

**APS Survey on International Programs
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Verbatim Comments

Question 15: *Please explain why you think the number of Beller and Marshak lectureship talks should remain the same.*

Students who earned bachelors in U.S.

In this way, physicists from different countries will have a chance to share their views, works, and progress directly. They may come up with new ideas.

It is appropriate

Recent entrants into workforce who earned bachelors in U.S.

3 is about the right number to allow the lectureship to remain a distinguished honor, while also allow many of us to have the opportunity to attend at least one.

I have not attended this meeting before. But my colleague who has attended it said this meeting is very good. Therefore, I think the number of talks is also very good.

It would provide an opportunity to a greater number of scientists to travel to US and keep apace. Further, an increase in lectureships would also increase the applications for them and gives APS a larger pool of applicants to select from.

Number of sessions on any APS meeting is very high. Hence people generally tend to attend what suits best for their respective fields and may be few others that interest them outside their immediate area of work. Increasing the number of talks on such a huge meeting arrangement may not bring desired results. Instead, it may be better to bring few good scientists in various fields in every meeting.

That's how you know about very high quality work going on in physics

To give more chances for scientists from abroad to participate and cooperate with scientists here

To give researchers from developing countries more exposure for their works.

Experienced workforce who earned bachelors in U.S.

3 doesn't amount to much of an impact

About right, given the time

At least, it is better to keep it running

Distinguished wouldn't be so if you had more lectureships.

I do not care if you can increase the number. But I do care if you are decreasing the number. Interaction between scientists to expand and share their knowledge as wide as possible is a recipe to save time and improve the efficiency for researches.

I just think that anything less would make it insignificant and more would take away from the speciality and the prestige of the awards. I have no clue as to the budget issues that would determine the number who can be awarded this per year, but as such seems like a reasonable number.

I think it is especially critical to continue engaging scientists from developing countries. I believe that final support is essential to allow them to travel to the US

It provides excellent opportunity to communicate and share ideas both for American and foreign physicists.

Provide broader exposure to excellent scientists from developing countries.

The current number seems about right. I can see no compelling reason to increase or decrease it.

There are a lot of good scientists outside the US, who could share their research with us. The real question is who and how selects the invited speakers.

This is a push-poll.

This seems to be reasonable number considering the number of "regular" invited talks that are offered.

Three lecture talks a year seems a reasonable number - large enough to provide opportunities for multiple visitors, yet small enough to have a special significance attached to it.

To be more accessible and better net working among physicists in exchanging their research interests.

Students who earned bachelors abroad

Because I believe communication between scientists is very important for the furthering of research.

Considering other responsibilities, 3 Seems like a reasonable number for a year.

It opens a door to communication among scientists around the world and also helps familiarize the scientists in the US about the research going on in developing countries.

It's ok for me.

More dissemination facilitates advances in science, obviously!

The more we can keep in touch with scientists from abroad, the better.

They are a good opportunity to increase the visibility of research taking place in other locations

Recent entrants into workforce who earned bachelors abroad

It's always important to hear outside viewpoints.

Experienced workforce who earned bachelors abroad

2 per APS meeting is what I would expect, i.e. 4

3 seems enough at present

Although the lectures give individuals an opportunity to showcase their work, the best relationships are forged during work exchanges. I prefer money be used to fund travel grants for work.

Because of the large number of foreign invited talks, it is difficult to select appropriate recipients because of the small number of available awards

Contain costs

Enough outside folks, many have not much to contribute, and trips to USA are costly.

Experience in organizing an APS session, where we had sought but not received funding for a distinguished foreign scientist.

Fewer would reduce communication, more would dilute the program.

Frequency is sufficient for now.

Good program, and should be a selective honor. Marshak was a close colleague over many years.

Greater impact per talk with fewer talks.

Hard to be precise when I do not have cost do a cost/benefit analysis. Doubling wouldn't be out of line if affordable but probably should not reduce #.

I don't really have an informed opinion on this.

I have the impression that there is not a strong demand for them by those that organize the speakers at APS meetings

I haven't heard anyone say they we need more lectureship talks from physicists overbroad, and I haven't heard anyone say that we need fewer.

I think that the quality of the lectureship talks should be maintained at a high level, and I think that increasing the number of talks could decrease their status and quality. If there was firm assurance that such an effect would not happen, then I would certainly reconsider my position on this.

It increases the exposure of researchers to new ideas and to areas that may traditionally not be seen as areas where physics is, or can, be done.

It is a question of encouraging international interactions at the highest level of competence

It may be difficult to find more excellent speakers.

It seems like approximately the right amount of resource expenditure relative to other initiatives of the society.

It seems to be working well so why tinker with it? If it ain't broke don't fix it.

It seems to meet the current need and interest.

It would be difficult to keep track of much more, but there should be a few.

It would help bring a more international flavor to APS meetings

Limited makes them prestigious, and for budget considerations.

My understanding is that this is an honorific lecture. Offering too many of them in one year dilutes the honor.

Physicists have a long tradition of working for better international understanding. That seems more needed than ever.

Physics is international and having more first rate international speakers will improve the quality of APS meetings.

Physics, and indeed all of science, is a truly global endeavor. Participation requires the ability to travel. Funding, especially for scientists from developing countries, to travel is required for them to be able to participate fully.

Present number limits access to a small fraction of physicists.

Promote collaboration between US & physicists in the developing countries

Representation and publicity among overseas areas US served, but no need to make the opportunities greater since these are given by well known individuals.

Seems appropriate for a named fellowship

Seems balanced

Seems like a good number

Seems like a relatively small number for a meeting that draws 7,800 attendees (March) or 1,200 (April)

Seems like a reasonable number

Seems OK now.

So that we can hear what others around the world are doing? This helps us not to become isolationists.

That's about all that would draw a crowd

The more the better.

The number appears to be appropriate (my guess) for quality talks on interesting talks.

The number of significant developments would support more lectureships

There are many subject areas within the APS. Having only 3 lectureships per year means a certain subject would be represented only one in perhaps 10 years on the average. This time lag should reduce as much as possible.

There are more than 3 people per year who would be qualified and significantly enhance the meetings.

There are plenty more than 3 excellent scientists per year.

There are already a large number of international talks at conferences and workshops.

There is no doubt that science is becoming more international in nature and that outstanding scientists from nontraditional countries should be encouraged and aided in traveling to international meetings as a means of fostering this promising trend.

These invitations lead to very positive follow-up in the lecturer's home country.

They are not important.

They should be doubled-to increase the number of visitors/scientists from developing countries who would have this opportunity.

To encourage exchange of ideas, of course and to make sure we are aware of scientific developments in places we might otherwise be unfamiliar with.

To maintain the level of the honor, it should be given to a select few. Alternative mechanisms should be sought to support additional international speakers.

To maintain the quality of the talks - there is always a trade off between quality and quantity.

Very important to engage international colleagues, and support physics abroad

We should seek all information possible. Educate the public.

Verbatim Comments

Question 16: *Please describe how the APS website with the information about visas could be improved.*

Students who earned bachelors in U.S.

How APS can support the visa application. Places/individuals one can go to for help with the visa situation. List of free/nominal fee advice organizations/websites.

It is also important for the foreign students studying at US universities to go out of US to interact with other physicists without worrying too much about getting a visa back to US. For Chinese citizens, the visa is only valid for one year (It used to be 6 months). Personally, I had to give up 1 or 2 conferences outside US due to visa issues.

More hyperlinks to some relevant websites should be added.

Recent entrants into workforce who earned bachelors in U.S.

I have not accessed this website recently, but it is important to keep it up to date. Visa application procedures (how long it usually takes, how to proceed, what to expect and how to get help if necessary) have changed in the last 5-6 years.

I have seen this section of APS website, but have not used it extensively to suggest improvements.

I think the website should strive to be a good visa information source for alien scientists traveling abroad for international meetings.

It is ok

Perhaps some cases (such as delays or expected time-line) could be described accordingly.

Experienced workforce who earned bachelors in U.S.

Better navigation

Couldn't find a quick link to VISA info on the home page

I checked it out a while ago because I am chairing an international conference this summer. I ended up using the information and resources provided by the NAS

I do not have any comment on how to improve it since when I needed it I found it very useful. I was looking for someone to help with a very special issue and I found the contact information immediately and the person I contacted responded much faster than what I expected, helping me with the problem (a visa for a postdoctoral researcher who was granted by was delayed because a letter was sent to a wrong address, this researcher missed half a year of his appointment)

I think the website is good

It is already extremely useful and we have linked to it for conferences we have hosted

It would be nice if there would be e-mail address and name of the APS representative who might help in the case of visa problem.

More detailed information about the various types of visas, especially as there are so many different types and rules associated with each.

This is a tough question because it covers a wide range of problems starting from F and J visa up to USA citizenship. A clear description of the most important steps and requirements is of high importance and will help a lot foreign scientists working in USA. Pending on funds availability a professional help is always welcomed - may be via an internet/e-mail interactive connection.

Students who earned bachelors abroad

No respondents submitted comments.

Recent entrants into workforce who earned bachelors abroad

Doing good still need encourage scientist participate more to attract young scientist. I recommend APS for next generation take over the technology we need think more to attract high school student to study science.

Experienced workforce who earned bachelors abroad

I need to study it more thoroughly to answer that question. Things are so complicated now with the war against terror and political wrangling.

I have not looked at it recently. I did so when a postdoc was stuck outside the country for two weeks, about 3 years ago.

I use it as a reference for colleagues from outside the US who wish to visit the US. I have received no complaints or suggestions from those who have used it.

Increase the availability of multiple languages, at least the major UN ones.

Information being sought was readily found on the website

It is fine the way it is. I found it very useful.

It is not immediately obvious from the home page how to find it, but at least three different routes got me there in one or two clicks. This is pretty good - it doesn't require the reader to know exactly how the web designer decided to lay things out. Two additional routes did not yield links to the visa page - the "students and educators" link, where a foreign undergrad might be looking, or the "Physicists and Other Scientists" link, where a researcher invited to the US might be looking. You might want to think about whether links to visa information might be useful on the pages that come up for either of these. But they were not among the first three places I checked.

Make it easier to find. Currently, one has to know that it is under Policy & Advocacy, and then one has to click on Issues. A direct link under Policy & Advocacy might make it easier to find.

Only suggestion would be for current info -- I believed I accessed this site when the APS meeting was in Canada, and it then had all the info I needed -- though US citizens/residents DO need to be aware that, NOW, they need a passport to travel to both Canada & Mexico.

Verbatim Comments

Question 17: *Please comment on whether you think young US-based physicists are currently getting enough physics-related opportunities to travel abroad. If no, what additional travel experience would be important for young physicists?*

Students who earned bachelors in U.S.

As far as my experience is concerned, there are very few opportunities for young physicists to travel abroad. I think it is important to support travel expenses related to attending international conferences and workshops.

Awards for young researches which included travel money would allow for more effective collaboration with scientists outside of the US.

Because of the visa problem, international students have lost many opportunities to attend conferences or workshops outside of USA.

Conferences

Due to the high costs of traveling aboard it is not easy to provide the funding for graduate students. For this reason, only a restricted number of the students, sometimes none of them, could be able to participate to international meetings. Obvious, this way, a valuable international opening is very restricted, if not completely missed. Partial or full sponsorship would be welcome.

Go to Japan or Europe to learn different view

I am not aware of many Traveling Grants available from APS to support traveling abroad. I believe there should be some Grant opportunity available.

I am not aware of opportunities to travel abroad as a student in the US. I have some friends who go to conferences in their countries of origin, or those working in big collaborations (like at CERN) traveling abroad for the summer. I would like to see advertising for conferences in other countries, as well as travel grants for student who would like to present their research in these conferences.

I believe that additional financial resources for non-american students should be available for non-american students which are carrying out graduate studies in accredited college/universities within the United States. As for now only American students are allowed to participate in these scholarship opportunities.

I believe that young physicists do get an adequate amount of opportunities to travel abroad.

I do not think many young physicists have many opportunities to travel abroad, but I do not think it is always necessary.

I do not think there is enough travel now, at least in my field. The most important conferences are APS section conferences (DFD for me), hence always in the USA. Furthermore, funding sources are usually from within the USA, if not directly from the government, which means there is no need and no money to travel abroad. I think young physicists should be encouraged to visit a conference in a different continent once every year, and that the APS conferences need not necessarily be held in the USA, since the APS really has an international impact, not just an american one. If it wants to stay that way, it should look beyond the borders.

I don't know so much, but it happened to me, and some of my colleagues in the department that, because our advisers ran out of money, we simply couldn't travel to conferences. I, myself was in this situation two times this year. I think going to summer schools is a good experience.

I don't know whether APS provide some opportunities for the international student. If there are no chances to get travel fund from APS for the international students, Could you makes chances for not only internal travel fund in US but also international travel fund for traveling outside of US.

I don't think graduate students have a lot of opportunities to attend meetings abroad. At least for my experience, I think some of the meetings in Europe or in Asia are actually quite good.

I don't think that young US physicists have enough experience with international education outside North America.

I don't think young US-based physicists are currently getting enough physics-related opportunities to travel abroad.

I expect to see more workshop or summer schools for graduate students.

I think it is fine as it is now

I think it is very important if young US-based physicists, especially graduate students get more opportunities to travel abroad, get experience of working as volunteers at foreign labs/companies, attend conferences abroad. And I don't think that graduate students get that opportunity often . When and if their schools do not provide funds, it is extremely important to have other sources for funding.

I think more scholarships/travel grants could really make a difference. These grants need to be even more well advertised in the premier institutions in the developing countries.

I think that young physicists from US don't travel abroad enough, maybe because there are a lot of opportunities to work and attend conferences at great universities and laboratories. However, this condition creates a vicious circle, because these people tend to forget the different perspectives of the actual physics problems that people from different countries have, according to their personal experience. I believe strongly that efficient exchange programs are necessary for these scientists to have a correct appreciation of physics' status quo.

I think the main emphasis would be for physicists to travel to developing countries. There is a lot of potential but lack of funds.

I think they are okay.

I think they get enough opportunity

I think this is dependent on the group the physicists belongs to. Personally I had the opportunity to go abroad and I enjoyed it a lot.

I think we area getting enough of it.

I think we need more physics related travel opportunities, which would be very beneficial for collaborations, bringing many talents together.

I think young physicists have enough physic-related opportunities to travel abroad and share their knowledge and increasing their experiences.

I think young physicists need more opportunities to travel abroad

I think young US-based physicists are currently getting enough physics-related opportunities to travel abroad now.

I think young US-based physicists are currently getting enough physics-related opportunities to travel abroad.

I think young US-based physicists need more opportunities to travel abroad.

I think, from the hallway poster in our department, and around campus, physicists have enough opportunities to visit other countries.

I'm a graduate student of non-US origin. I've noticed many physics-related opportunities for students who are US citizens specially for workshops and summer schools but there haven't been many for non-US citizens. Being a non-US citizen, I've faced this problem so I would really like you to make more opportunities available to students in US Universities who are not US-citizens.

I'm not able to judge if there are enough physics-related opportunities to travel abroad, but I do think that it should be an important part of the education. Opportunities to attend workshops in developing countries where an US-based scientist interacts with scientists from that country would be very helpful not only to broaden the horizon but also to become familiar with the difficulties and problems in developing countries.

In my own case and people around me, yes. I don't know about other places.

In my university, I am not aware of any study abroad or student exchange program for graduate students/Physicists. I think having this experience for graduate students to do related research in another country is beneficial to have them exposed to different research environments and capabilities. APS could sponsor such programs.

Interactions should be encouraged not only to expedite research, but to foster goodwill. More travel money for graduate students to go to conferences ABROAD (formative years are important, right!!)

It is difficult for students to travel abroad due to high cost of travel.

It is very important for the beginner physicists

More Travel would be nice. But this is definitely not what young physicists worry most. If resource is limited, better spend the money on other more important aspects.

No, because of a lot of hassle in visa problems, especially for US physicist who are non-US nationality.

no, more relations with developing countries

No. Inter-change problem should be broadened to more US-based physicists to travel abroad. Through this way they can communicate with people that they are not familiar with, or just learned from publications.

No. Maybe covering of travel experiences of PhD students for some summer schools.

No. More conference attending and lab visiting at foreign country are necessary.

No. More international conferences and summer schools would be fantastic.

No. Probably more travel experience to the developing counties.

No. Young physicists need more opportunities to travel outside and to know how is the research in his/her field going on outside United States. For example, APS could support more short trip to international labs in Europe. And if possible, some conferences held outside United States (for young physicists) are necessary.

no. More would be better.

not enough

Not really. Especially for non-US citizens to travel abroad, it may be difficult to get the US visa to reenter.

Not really. I think the young US physicists don't go abroad very often even to Europe.

Physics is a sensitive area for visa application, so there are some hurdles on the way abroad. Another reason probably is the insufficiency of financial support. But in my opinion, it is a pity to stay home doing research with door closed. It is essential to talk face to face.

provide more funding and awards for young physicists to attend conferences/workshops/exchange programs in US or abroad.

setup fixed schooling programs in abroad locations, provide exchange programs and subsidize costs

Some of the most important conferences in my field are in Europe and Japan. Some financial help should be provided!

The background check when applying for a renewed visa is a big barrier for physicists to travel abroad.

the more travel the better. Always.

The opportunities could be there but probably we don't know about them, and more essentially about the physics-related activities going on abroad.

there are not enough possibilities to participate in European summer schools paid by the APS

There are plenty of opportunities for the US physicists to attend meeting abroad.

There is a lot of exciting theoretical research that is also taking place in developing countries, e.g. India. It is very important for scholars at both sides to be able to exchange ideas, have access to journals originating in different regions of the world. While the developed world has the financial and technical resources to carry out cutting edge experimental research, those choices are not readily available in the developing world. It will be vital to learn how to progress with limited resources.

To introduce some good institutions for physicists in a regular base outside US, such as Europe, Japan, etc is helpful for young scientists.

To seek ways to inspire individuals abroad through physics would be one additional travel experience that would benefit all of us.

Travel funding is very tight at the university level in some research groups. So, APS could fund travel to those groups who can't even afford to pay their graduate students full time support -vs- those groups which are able to take 3 day ski trips after an APS conference.

we don't have enough opportunities to travel abroad.

well, may be not enough. However I don't think this is very important, since most important physics conferences are organized by US institution.

yeah i think so.

Yes, I think so.

Young physicists need to get encouragement for their further future progress and contribution towards new discovery. So I think Young Physicists should be given opportunities to take part in research activities by supporting them travel grants.

Young US-based physicists should be provided more funding opportunities to travel abroad (besides those from their own institutions) to attend meeting/ conference/ workshop/ summer school and/or to set up a collaboration.

Young US-based physicists should travel to other countries as much as they can to gain valuable knowledge and experience.

Recent entrants into workforce who earned bachelors in U.S.

I believe they do.

As far as I know, physics in US is very US centered. People from other countries come here to earn degrees or carry out research but normally not the other way around. Although not essential, I think it is useful to learn how things (including research) work in other countries.

Government supported communications.

I am not aware of the details of such programs by the APS, but I would like to stress that such programs are of quintessential importance to young professionals.

I am not familiar with those opportunities because I myself have very limited legal ability to travel (due to visa issues) anyway.

I do not know if US-based physicists get enough opportunities to travel abroad.

I do not think so. Some grants for young researchers to participate international conferences in their field is desirable. They should be well advertised for the all the young researchers and be selected randomly out of all qualified researchers.

I do not think young US-based physicists get enough opportunities to travel abroad. Reasons are many fold. They do not have appropriate funding to travel abroad. Many times they are not aware of funding agency which will fetch them for travel/collaborations. Just like APS has criteria that one must have collaboration with publication to be considered for getting travel grant, other agencies must have similar conditions. These are not conducive to young scientists.

I don't know about this subjects. Perhaps the summer school type conference (lecture and discussion) under distinguished physicists from the world will be helpful. In there young people who pursue science may also to build relationships between them. I heard several are already successfully held and scholarships are also often available in those types to encourage people to attend. It wouldn't be hurt to have more of them.

I don't think so. For the person like me, a postdoc working in University, I'm always worried about my visa if I travel outside US.

I don't think young US-based physicists are currently getting enough physics-related opportunities to travel abroad. Especially for those physicists who are not US citizen, even if they are studying or working in the US, it's not easy for them to get visa to other countries and to get a US visa to get back to the USA. Some of my friends originally from China or Russia got that problem for the APS March meeting in Canada 3 years ago. Many young physicists choose not to attend conferences outside the US. because of this problem.

I guess the US is one of the world leaders in physics and science in general and so young US based physicists do not feel the need to travel abroad. However, Japan and Europe are competing with the US for the position of leaders in science and technology. So I guess US based scientists will benefit from visiting these places. Places like India and China that are slowly picking up as can be seen from the increasing number of publications in APS and other journals are also places where US based physicists should travel to share their knowledge and maybe learn something in return.

I think it would be essential for young US-based physicists to travel to conferences abroad. That way international collaborations could develop, which in my opinion can only enhance the science that comes of it. I myself would have liked to travel to a few conferences abroad, but no travel money was available to cover such expenses.

I think it would be much better if nationals of certain sensitive countries currently residing in the USA could travel abroad without the visa related hassles.

I think it would be nice to have more travel grants as substantial travel costs limit the opportunities for travel

I think more money needed to support young physicists to do their research and travel abroad to exchange.

I think physicists in US especially at a graduate school level should be able to spend some time in an institution abroad to give them a cross cultural training in physics. I personally feel it would enrich one's education - physics and humanities as well.

I think that young physicist are not getting enough physics related opportunities to travel abroad. Travel grants are one way to help them.

I think that young physicists, post docs, or even professors in small colleges, should have more funding opportunities for travel.

I think the international travel is very limited for young non-citizen physicists due to visa problems. This has to be improved.

I think the opportunities are enough.

I think the opportunities to travel abroad from US are relatively good and enough (at least for condensed matter physicists).

I think they are not. For young physicists, travel experiences like summer school or workshop benefit them better than attending conferences

I think they are.

I think they do.

I think they get enough opportunities

I think, in addition to variety of opportunities in US, there are many opportunities for US-based physicists to travel abroad.

I think young US-based physicists are not traveling abroad because most the cutting edge science is in the US, and the US government and universities are not encouraging int'l exchange. Perhaps int'l conference sponsored by the United Nations might help.

I work in US since a short time and I'm not sure about the answer for this question

I would say they are getting enough.

If the advisor has travel funds, they probably are getting the opportunities to travel to relevant conferences. If this is not the case, then maybe they will not have quite as many opportunities. However, for 3rd world countries, it may be that there are NO local, less expensive conferences to attend, whereas in the US there are very many, lesser expensive opportunities.

I'm not completely aware about the opportunities the physics students here in America have to travel to other countries. However I consider these opportunities essential to compliment the basic physics training, in particular, for those areas in which the international community has a lot of things to offer: Astronomy, Quantum Optics and Information.

international specialty courses abroad is the best opportunity for young people to meet more people and understand the science situation in other places

It is hard for young physicists to travel abroad no matter where they work.

It is necessary and very important.

It seems that reasonable opportunities exist for US-based physicists to travel abroad. I do believe that more of an effort can be made by the APS to organize schools and conferences to give young physicists the opportunity to interact with colleagues in countries whose scientists don't have the same financial opportunities for travel.

Large number of young US-based physicists (PhD students and PostDocs) do not have enough opportunities to attend international conference held in foreign countries primarily due to the limited funding. In fact, some Asian countries like South Korea and Japan (those are not developing countries, though) send many young Physicists to the conferences held in foreign countries. I am a PostDoc working at a DOE laboratory, and it is practically impossible for me to attend a conference held in foreign countries. APS should also support young US-based Physicists to attend some APS-supporting conferences held in foreign countries.

My guess here is that you are trying to ask about collaborations. I think young people in nuclear astrophysics should get more involved in international collaborations. Areas like particle/high energy do much better because of their large-scale type of work. However, the science policy in my area leans toward the "competitive" rather than the "collaborative" efforts: wrong doing! In short, collaborations=travel. Now, if I did not understand well and you are asking about money for travel, my experience is that there are little resources to bring scientists from abroad to get them involved in our projects. Most of the time people visit when their countries have the resources to pay for the trip. This leaves developing countries completely out of the picture. We need travel money to invite people to join!!!

No opinion, most of my travel is through geophysics community. I have no direct experience relevant to this question.

No, I don't think they get opportunities to travel abroad, or if they do, I'm not aware of it, like some many of my peers, which means that these programs, if they do exist, are not part of any main stream in physics.

no, there's hardly funds for international travel, collaborations, and practical training at foreign labs, provide valuable experience.

No, young US-based physicists are not getting enough physics-related opportunities to travel abroad. US Colleges and Universities need to increase or develop science exchange programs with institutions abroad allowing US students to travel.

No.

No. Attending international conferences and doing experiments in international private or user facilities would be very important for all the US-based physicists.

No. Young physicists should have an opportunity for a short-term (2-3 months) stay outside their home institution to broaden their research experience.

Not enough. Attending conferences outside US, esp. in Europe and Asia region would be important.

not essential

physics-related opportunities to travel abroad are adequate

possibility to get a grant for participation in experiments and meeting/conferences in other countries would be great.

Probably not. Travel to small conferences related to their research for opportunities to meet one-to-one with scientists in other countries doing similar research, which could lead to potential collaborations.

Seems okay

Since I didn't study in US I can't have an objective opinion, although I believe that more opportunities should be given to young physicists in order to participate in conferences as well as to work in labs abroad for a short time period

The answer is no. I think it is very important for them to have this kind of opportunities.

There are limitations on spending grant money in international meetings and, at the same time, US researchers usually do not have access to travel grants.

There are still a lot of issues related to immigration and visas. In my opinion, there is quite a lack of freedom of movement for non-US nationals

They should be able to participate to conferences abroad that might not be possible principally because of financial limitations. Also, it would be very beneficial if the physicists would be able to go and work in a university outside of US. This might also bring some visa issues.

Though I know there are a considerable number of opportunities available for US-based physicists, I am not sure of the extent of such chances to make a suggestion.

Travel to CERN is quite expensive and not all of us have the possibility of traveling to CERN frequently enough.

When it comes to conferences abroad, there are many opportunities of getting at least partial funding to cover the expenses of such a trip. When it comes to collaborating with research teams abroad, things are not so easy. There might be ways of improving this.

Yes

Yes

Yes

Yes

yes I think so.

yes they have a lot opportunities through other countries fellowship programs mainly in Germany and Japan.

Yes, I believe they have good opportunities to travel

Yes, I think there are enough opportunities to travel abroad, at least at the major universities.

yes.

Young international physicists in US are not getting enough opportunities to travel abroad. Main problem is the immigration related paper work. Once you go out you are not sure that you can come back or not to finish your own research.

Young physicists should have more opportunities to participate in international conferences as well as in exchange programs with international coworkers.

Experienced workforce who earned bachelors in U.S.

1. Making connection for future researches. 2. Exchanging ideas

Adequate opportunities

All depends on the funding levels of the respective supervisors, which at the moment is not great at all to send students abroad.

As foreign trips are expensive one needs a good reason for a foreign trip, i.e. representing the whole group or making an important talk. That naturally makes foreign trips rare for young scientists (grad student or post-doc level). But I don't think that is too unfair or too damaging for career growth because domestic conferences are usually available for younger types.

At least in High Energy Physics and Beam Physics young US-based physicists are traveling to Europe, China and Japan because the next large accelerators will be in Europe and Japan consequently very important experiments are overseas. In the last 10-15 years the most important experiments in neutrino physics are being carried out in Japan, Canada only recently Minos and Mini-Boone are taken data.

Attend international conferences. Study abroad.

Attending workshops and summer schools

Because I work at a national lab, I face significant difficulties including multiple bureaucratic roadblocks to travel abroad for conference/collaboration. Other colleagues at national labs are facing the same problems and it would help if DOE simplifies the requirements for foreign travel involving only basic research.

Big meetings are very expensive, so young researchers often need help for that. Small focus meetings can be extraordinary beneficial, so there should be a way to ensure that young researchers have opportunities to attend them.

Coming from a materials science background, I cannot speak for all physicists. I think that we can use more organized international workshops catered for young scientists along the lines of Gordon conferences.

concerning my area of research, there are more than sufficient opportunities for young US-based physicists to attend conferences abroad. One needs to watch the ever increasing restrictions by DOE though.

Currently many of my colleagues do travel abroad for conferences, even though I myself have not had the opportunity. It would be useful to go to international meetings in the area related to one's research once in about two years.

Despite the fact that travel funds where tight sometimes, I have in general had good opportunities to attend international conferences and interact internationally. I am not sure that this is the case for all researchers. I believe that the hurdles for attending international meetings are higher than for attending domestic meetings, not only financially, but also due to the perception that these meetings are very expensive. Given limited funds and the need to look for a permanent job might often sway researchers to concentrate on domestic conferences.

Don't know the current situation. I have been out of academic research for too long. If the situation remains similar to the past, then there are nearly not enough international travel opportunities for young US physicists. Opportunities in which the student spends some time working overseas would be far more valuable than just traveling to a conference.

Enough resources but I am not sure if they are utilized

Establish more international grants that allow for Postdocs abroad and as important establish incentives for bringing back these people to the US (e.g. guaranteed job openings to come back in national labs, in reviewing agencies NSF, DOE, pay for conference attendance in the US while abroad for looking for jobs...)

Europe is much more effective in organizing Summer School programs for graduate students and post-docs. Sponsoring participation of US graduate students in these summer activities would be very helpful.

Even more important would be to start earlier and have an international component in the educational experience. Second best would be to provide the opportunity mentioned above. The insensitivity and arrogance with respect to other cultures and achievements will be our downfall, if nothing will be done.

Exchange in PhD programs * Summer Schools, also better advertisements of international schools i.e. through APS?

Exchange programs that would allow young physicists to spend some time, even 1 or 2 months but preferably longer, in an international lab. Would be helpful in the development of future connections and outreach to rapidly evolving programs overseas, especially in developing nations.

Exchange programs at all levels - from graduate students to senior scientists - would be most beneficial.

Federal funding levels are very low. Therefore it is virtually impossible to support travel abroad for young scientists, actually all scientists.

Foreign travel for (young) physicist is an important step in realizing that science is without borders. I believe that there are plenty of physics-related opportunities to travel abroad. However, it is not possible to force anybody to travel.

Funding is tight at present, but some young people still are able to get abroad to conferences. Travel to participate in experiments still seems to be occurring.

Funding is very tight - so there are few opportunities apart from an occasional conference or collecting data at a facility such as a synchrotron source, or a few collaborations. It would require massive funding at NSF and DOE to make a significant number of travel grants (say for 1-2 quarters) available for young faculty, post docs or grad students

Getting enough, at least in particle physics -- soon, nearly all US particle physicists will work abroad, given the current sorry policies of the DOE and NSF.

Grants to attend summer schools abroad are very important to make contact with international communities.

Highest level physics is a shrinking community and valuable young members should be picked and cultivated carefully. On the other hand physicists failed to make the case for their survival for the society in US and internationally. I think that APS should address the contradiction between the real need of physics knowledge dissipated broad and deep in society and the difficulty that Ph. Ds in physics have to find proper jobs.

How much is enough? As more physics leadership develops outside the US, more non-conference experience (1-6 months at 1-3 institutions) will become essential to maintaining presence and quality for US physics.

I am an experimental particle physicist. In this field most of the researcher have already plenty of opportunities to travel abroad. Most of us spend a lot of time in Europe since the highest energy accelerator will be based at CERN in Switzerland. The US program will need a future accelerator in US to maintain strength in particle physicist

I am not a US citizen. So, it is almost impossible to travel outside US, since it might take up to 6 month to get me US visa to return back to country. Clearly, my university will not wait for me to come back.

I am not personally involved in teaching of undergraduate and graduate students now, therefore, I have no clear opinion on this matter.

I am not sure that it is that important for young physicists to travel abroad. There are probably enough prominent conferences in this country. I feel that it is important to attend conferences abroad to feature one's work, not so much to get an education. The necessity therefore depends on the specifics of each case.

I am not well familiar with opportunities for youngsters to travel abroad. But as far as I know they not are sufficient.

I believe is very important to attend conferences, study/work in countries different from the one we are coming from or in which we have been formed. The enrichment gained from these experiences is obviously not only about physics, or more generally science, but, and almost most importantly, about the overall formation of a scientist that becomes aware of the existing cultural differences and that can work in the every-day life to reconcile them.

I believe that the opportunities for young US-based physicist to go for couple of months and work in Europe and Japan would be great.

I believe that young physicists, especially at small, undergraduate institutions should have significant support to travel abroad. Although, I must note that I haven't used any support programs offered by APS yet, so it's hard for me to judge current support.

I believe that young US physicists are not getting enough experience (or are not participating enough) in physics related activities abroad. I think it is particularly important that they get this experience, through short-term research appointments etc., during or immediately after graduate school.

I believe that young US-based physicists currently do NOT get enough opportunities to travel abroad for various reasons, including DoE rules about travel abroad, visa issues, and funding issues. I believe it is essential for young physicists to be able to travel abroad to attend conferences and workshops, to participate in international collaborations and work in labs/universities/experiments abroad, to give lectures or attend schools, and to spend sabbaticals overseas.

I believe there are enough opportunities.

I believe there is enough awareness about international conferences, especially in Europe (awareness about conferences in Asia, such as those in India and Japan might be lacking). More travel grants geared towards international travel might be appropriate.

I believe US-based physicists are getting enough opportunities to travel abroad. It would be useful if the traffic in the opposite direction can be increased.

I can only suppose so, I do not have enough information to answer this question.

I can tell only about particle/ accelerator physics needs. I would strongly support any additional contacts in accelerator physics for young physicists between the US Laboratories/Universities and Europe (CERN, DESY, other), Japan (KEK), China and Russia.

I can travel only if I have some grants. If not I cannot go

I consider important for young US physicists (post docs and grad students) to participate in international topical conferences, such as Nucleus-Nucleus Collisions, Int. Conf. Nuclear Physics, to a lesser extent also on large meetings where the physics case is made for new accelerator facilities. Those latter conferences will provide a window into the future and may get the young physicists interested to stay in the field of science, rather than become programmers for Wall Street firms.

I do not think foreign travel is important for young physicists other than what they can secure through normal grant process.

I do not think they are currently getting enough physics-related opportunities to travel abroad. Any kind of wide opportunities will be helpful for their future.

I do not think they get enough opportunities. When I see the wonderful opportunities that young European-based physicists get for such travel, I am envious. I think it would be most helpful for our young scientists to travel more to Europe and Japan, and possibly China.

I do not think young physicists are getting enough opportunities to travel abroad. In a variety of areas, the forefront of science has moved overseas, and there are few resources to help US students and postdocs travel abroad and learn.

I do see young US physicists at conferences abroad, so they seem to have a number of opportunities.

I don't really know whether they are getting enough opportunities. I would hope that most of them are getting some opportunity to travel to a non-US conference at some point in their graduate career, though I expect that perhaps they are not on the average.

I don't think any US physicists are sufficiently encouraged to travel abroad.

I don't think most young scientists have enough experience abroad. They should have the opportunity to travel to at least one conference abroad.

I don't think they get enough physics-related opportunities. More support of international collaborations is needed.

I don't think US-based physicists are currently getting enough physics related opportunities to travel abroad. This is an important experience for young physicists.

I don't think young US based physicists are currently getting enough opportunities to travel abroad. Spending two to three months in leading foreign institutions at an early part of their career would broaden their scope.

I don't think young US scientists are getting enough international exposure. International exchange programs that would allow young scientists to attend international conferences abroad and to conduct research programs (several month) at international research institutions.

I guess that there are no difficulties for American scientists to participate to conferences organized abroad excepting funding restrictions. For foreign scientists working in USA, there are some problems for example I applied for the Green Card and now I am "in between"... I have applied for travel documents but my lawyer advice me to avoid using them...hence I am not able to participate to any conference organized beyond USA. (I may tell you a strange story about my applications for Green Card.)

I have no clue how many young physicists travel abroad. My students do from time to time - never enough.

I have not thought about this issue before. So I do not have a valid opinion at this point. But I think global collaboration and cooperation is absolutely essential for the future of Physics.

I have very bad experience with the journals Physical Review

I only know of several colleagues that visa issues prevented them from traveling abroad. If you are not a US citizen or greencard holder it can be difficult to visit a conference abroad and come back without a serious risk of delays. The March meeting in Montreal is an example. Lucky enough I already had a reentry visa, but not all my colleagues were so lucky. Often contracts are one year renewable, which means you need to reapply for a visa each year. This also means you lose your reentry visa each year and it is usually difficult to get it renewed.

I think that US scientists in general (not only young physicists) do not get sufficient exposure to science in other countries. For young US physicists, I would recommend stays of 3-4 months in a laboratory abroad (extended summer projects) or the opportunity to spend one year abroad during their studies.

I think a program funding postdocs to go to other countries would be good - (I came to US on Canadian funded postdocs). I think every working scientist should have work experience abroad

I think it is especially important that young tenure track faculty have the opportunity to interact and collaborate with overseas physicists. Personally, it wasn't until my 5th year (when I was invited to a conference in Germany) that I had an opportunity to travel overseas. Without this initial interaction, I probably would be personally collaborating with fewer overseas physicists.

I think it is important to let young physicists go to conferences, including abroad conferences. Currently too much limited by the travel budget, young physicist's travels are not always encouraged.

I think it is OK.

I think it will be very good opportunity if one can visit international sites of historical importance to physics. I mean it can be inspirational experience to young physicists.

I think so.

I think spending some weeks abroad would be good for *every* student, not just physicists. The earlier the better. Not many seem to get this experience right now. Ideally, already undergraduates (juniors or seniors) should go abroad - if possible for a research experience of some sort.

I think that current opportunities are inadequate. Summer-long REUs for US-based students conducted at foreign research institutions may be useful.

I think that for US-based physicists there are opportunities to travel abroad, considering the large amount of meetings and conferences carried out in foreign countries. Perhaps advisors should make extra efforts to secure enough funds to support travel related expenses and encourage their students to participate more in events abroad. Graduate students are not always aware of these opportunities and 'someone' should make sure that they learn about them.

I think that our graduate students would benefit from more opportunities to travel abroad, especially for conferences. The main limiting factor is the availability of financial support. Also for non-US students there are visa issues (e.g. the requirement to travel to their home country to renew the US entry visa).

I think that the question is not phrased correctly. It could be misleading. I am not sure how do you define young. I think that inexperienced physicists are not as likely as experienced ones in making an impact abroad. However, less experienced physicists are the ones that can benefit the most.

I think that this is as important as bringing physicists from outside to here. I wonder if there are awards like the one we just talked about, but in reverse, i.e. supporting physicists from the U.S. to go out to give lectures. This would be a valuable experience.

I think that US-based physicists are currently getting enough physics-related opportunities, and in turn I think that it is also very important to ensure that these opportunities continue.

I think that US-based physicists, who are also US citizens or permanent residents, have enough opportunities to travel abroad

I think the problem is more in perception, that there's so much going on in the US that it's not worth spending money to go abroad to meetings. It would certainly be advantageous for young physicists to see what is going on in the rest of the world.

I think the US physics community is in general quite chauvenistic and inward looking. I think young US physicists who are adventurous enough to spend time abroad are at a disadvantage in competing for academic jobs on their return, as sadly a lot of academic appointments here seem to depend on patronage to a greater or lesser extent. Having an influential US mentor who can promote your career is undoubtedly an advantage.

I think the young US-based physicists in my field (particle physics) are getting sufficient number of opportunities to travel abroad (subject to the availability of DOE/NSF funding).

I think there are a good number of such opportunities.

I think there are a lot of opportunities for our students to travel

I think there are already a lot of opportunities. You just have to look. The best experience I had as a student was summer schools on a particular subject. This was hands on learning and way more fun than conferences or classes. If there is not already something set up, get a site organized with all the summer schools info listed or where summer schools can be posted.

Provide funding for even more summer schools. That's the best way to rapidly get students up to speed on a subject.

I think there are enough opportunities

I think there are enough opportunities for young physicists to travel to meetings abroad. It would be useful for them to work in laboratories outside of US for short periods of time. It should be noted that my comment is based on my experience working at a national laboratory.

I think there is enough traveling going on - however, spending significant time (>6 months) would be much more important for cultural exchange. Just visiting a conference somewhere in the world does not do much.

I think there should be more opportunities for physics students and recent graduates to spend time abroad. For instance, Summer Internships could be established at foreign universities and government-run research labs. Since physics is conducted generally in English world-wide, language would be a secondary consideration however, some preparatory training in the language spoken in the guest country should be provided from here.

I think they are currently getting a wide range of opportunities to travel abroad.

I think they have enough opportunities to go abroad but not many opportunities for them to give a talk

I think they have enough opportunities.

I think this is important. Since I don't know what are available, it is hard for me to make any intelligent comment.

I think US graduate students do have enough opportunities to travel abroad, but assistant professors do not. At least, I did not when I was in that rank.

I think US scientists, including physicists, travel far too little abroad. I think longer stays, where young physicists have the opportunity to work closely with physicists in other countries are the most important.

I think US-based physicists have enough opportunities to travel abroad.

I think we have adequate opportunities

I think young US-based physicists are currently getting enough physics-related opportunities to travel abroad.

I would like to be able to attend more international meetings, but I'm always hamstrung by funds.

I'm not familiar with the foreign-travel situation at universities. In National Labs, general travel restrictions exist and the contingent is mostly reserved for senior researchers and managers. A higher willingness of the seniors to share the contingent with junior staff would be welcome

Important for them to attend non-US conferences and collaborate in foreign countries. Perhaps there should be more scholarships for such activities.

In fusion plasma physics, there are probably sufficient opportunities.

In general I think anything that encourages travel and exchange between physicists in the US and overseas should be strongly encouraged. In particular, travel to perform experiments at overseas labs, or to work at an overseas lab for an extended period of time, could greatly broaden a student's outlook and foster international collaborations.

In general young US-based physicists do not have much opportunities to travel abroad. Visiting foreign countries (by attending conferences or doing experiments, or just visiting) gives the young researchers opportunity to network and understand their position in the world.

In my experience it is hard to obtain significant government agency funding for international travel.

In my field and as a member of a big international collaboration, young us-based students travel abroad constantly.

In my field of expertise, the young physicists seem to be getting a lot of opportunities to travel abroad.

In my field the young physicists have good physics-related opportunities for travel abroad. This will be more difficult in the future as long as the US dollar keeps its current low relative value with regard to the Euro.

In my field they certainly have enough opportunities. I suspect that in other fields this is not the case.

In my sub-field, I think there is enough opportunity to travel.

In particle physics and astrophysics physicists of all ages travel abroad.

In particle physics, some of the major experiments and conferences are outside the US, so young physicists should be getting opportunities to travel abroad. But, I don't know if this is enough or not.

In the field of plasma physics there exist a few opportunities for young people to work in Europe. I think it is very important for US physicists to interact with the rest of the world.

Incentive students/post-docs/professors to present/attend to conferences abroad and not in U.S.

increase the number of people getting financial assistance to travel

indeed, I think it's important for them to be involved in such programs

Interaction with international community through international travels is essential for US physicists. There should be much more travel funds for the international collaborations. It should be both for students and researchers.

International conferences, with travel grants for these on a competitive basis are available in some fields but not all - this would encourage more US-based physicists to go abroad. In addition, there could be fellowships available to travel abroad and collaborate with scientists in other countries. There is enough of an exchange with European countries but not with Asia and Latin America.

International exchange programs is a *must* in the area of physics. Young physicists will "see" how colleagues abroad think about similar problems

It all depends on the funding, but other than that there are plenty of opportunities

It is adequate

It is always good for young physicists to broaden their horizon including traveling abroad.

It is important for the young US-based physicists to travel abroad. They should participate in overseas meetings, and collaborate with colleagues in the other countries.

It is important for young US physicists to have travel opportunities abroad. The more that APS can do to facilitate this, the better.

It is very important for young physicists to get involved in communications with their colleagues abroad. This brings new ideas, inspiration and future fruitful collaborations, built on personal contacts.

It seems to be very difficult for the US-based physicists or scientists in general to travel abroad for lack of funding. This is my general impression.

It seems to me that traveling abroad is definitely not easy for young physicists in the US, even to other highly developed countries. This is often accompanied by the perception that there is no better place than the US to do physics, which is obviously not true. Therefore I strongly advocate more support for travel abroad anywhere, developed and developing countries alike, to gain a broader perspective and foster collaboration rather than competition.

it will be very important for young US-based physicists to travel abroad and have a contact with colleagues from other countries

It will be very useful for young researchers to spend time in a lab in a developing country to give them a feel for the research done and the budget constraints under which research is done in these countries.

It's all funding-dependent. The ones with good funding will travel. That's it. I think that the young physicists should try to travel to meetings/venues/events/ etc so that they get a lot out of it and it helps them develop.

It's hard to say because I don't know enough about all fields in physics. It is certainly important.

It's not critical but opportunity to travel to international conferences probably would be helpful.

It's very good to travel abroad for all young persons, but not very useful for PHYSICS-related opportunities. So it's enough.

Joint Workshops

Meetings and conferences abroad give some exposure for US young physicists to meet other countries physicists, but they can do so in more limited way in meeting and conferences held in the USA. It would be much better for US young physicist to have an extended stay of a couple of years in foreign universities and labs. Unfortunately this is quite difficult because many countries do not have a government structure that allows them to give a salary to such postdoctoral physicist. A program that sponsors such physicists would be very useful and formative.

More efficient immigration process will help US-based international physicists opportunities to travel aboard.

More encouragement (and funding?) to attend international meetings would be good. Also collaboration should be encouraged with international collaborators of mentors of younger students/post-docs. Of course this can be very subject specific.

More research funding for travel and for international cooperation would be beneficial. More research funding in general for basic science would be beneficial.

More travel support to attend international conferences

More would always be better

More young physicists can attend international conferences and can meet physicists from other countries, some of whom may become their future collaborators.

Most Americans have little or no experience of foreign cultures and that interaction, both professionally and socially would be a benefit to the individual and to US society as a whole. Funding such external travel/research should be made a high priority.

Most of the time, at least in experimental nuclear physics

My experience is that more promotion and communication of opportunities is the key. No additional opportunities are needed.

My impression is that opportunities for travel abroad lack sufficient support, although the specifics can vary from institution to institution. Neither the funding or other paradigms of American science provide strong support for travel abroad. Exceptions are for travel from large scale facilities in the US to European counterparts.

No -- especially those US-based physicists who are not US citizens have a very hard time traveling while their visa status is being adjusted due to the overly complicated INS processing procedure.

No work in foreign labs

no a two-year foreign postdoc stint would help a lot

No comment. Only VISA problem.

No. Somehow young people are not traveling enough

No they are not. Travel costs tend to very high and there is no way to cover them personally. And most research grants cannot cover the high costs either - you can attend two or more US meetings for the cost of one abroad.

No, definitely not enough opportunities. Especially not outside of the "western era of influence". It would be essential for APS to provide young but performing scientist with the frequent opportunity of invited talks to outside of the North America/Europe/Japan region. Senior postdocs and assistant professors are the most likely candidates for establishing long lasting and fruitful collaborations with bright scientist from less developed countries. It is a lot more effective to send US people to abroad than bringing in people from developed countries.

No, there is not enough opportunities for young US-based physicists to travel abroad. Providing stipends or exchange opportunities for working at universities/Institutes abroad for 1-2 semesters (sabbatical like) would expand/solidify sci collaboration opportunities.

No.

No. Meetings organized by Europe and Asia Physical Society should be attended by young physicists in USA.

No. Attending special-topic workshops and conferences such as ICFA in accelerator physics 3 - 12 month visiting scientist appointments in research labs.

No. Conference, workshop, or summer school.

No. Give them scholarships to travel to conferences, give them funds for collaborative projects.

No. They will have good experience if they go to the different European and Japanese lab.

No. Ability to do more collaborative work at foreign facilities within the envelope of normal DOE/NSF research grants.

No. As all the experiments we are involved in are conducted outside the US. Yet our funding from DOE does not allow us to travel as many times as we should go abroad.

No. Attending conferences in other countries would be beneficial.

No. I think it is increasingly difficult to be mobile because of reduced postdoc opportunities.

No. I think, APS should fully/partly sponsor international conferences held in other developing countries.

No. I wish there would be more chances to attend more events hold in Europe and Asia.

No. It would be nice to see there are more opportunities for young physicists in the US to attend international conferences and summer schools.

NO. It would be very useful to young Americans to travel abroad to conferences, and even more importantly, to workshops and schools in Europe and Asia.

no. more travel grants

No. NSF IRES program could be useful. In addition post doc program would be very important.

No. Participation in International Conferences.

no. summer program, for instance.

not enough opportunities, mostly due to funding restrictions

Not enough opportunities. Experience with research with physicists leading to long term collaborations

Not enough opportunities. Not sure what can be done

Not enough travel opportunities.

Not enough. Summer workshops organized in ICTP, Trieste are particularly useful for beginning graduate students.

Not enough. The US is getting behind in some areas more and more.

Not much familiar with such opportunities. so no comments.

Not really unless their funding is available. I hope there are more travel related awards for young and grad students.

Not sure. Mostly, it is a funding issue. Grants are hard to come by these days, and some government agencies have annoying and counterproductive rules regarding foreign travel.

not that important. no.

NSF, NATO Science program, CRDF.

Offer Physics courses in other countries under the umbrella of a US university.

Opportunities to attend international conferences (abroad) are certainly a desirable way to increase contact with physicists in the international community. Spending some time abroad as a collaborator, or as a visiting graduate student is even more effective, but certainly much harder to implement.

Over the last four years, I frequently took students for research to Japan. This has been a very valuable experience for them. I am currently trying to get new funding to continue these activities. I cannot comment on the general young physicist population.

Participate in workshop and conferences, Join collaborative research

Participation in any international conferences, physics schools is fundamentally important for all physicists

Participation in international conferences is important, but it does not have to be abroad.

People with generous research grants have no problems in getting to travel. People without grants or with limited ones are hard pressed to do this. This is unfortunate as, in my experience, this type of trips foster collaborations and provides a rich creative environment.

Physics is done differently in different parts of the world. Then it would be valuable for young physicists to interact with physicists from other geographies. Conferences or short stays as visiting scientists are good venues for that.

Probably adequate

probably enough?

Probably not enough

probably not enough, but I only started working in the US recently and don't have enough data. travel funds are a real problem.

Probably they are

Probably they do, through whatever grant it is that supports their employment (for post-docs) or their start-up money or grant support for junior faculty. In my own early job experience, at a national lab, there was abundant opportunity for foreign travel.

Probably, especially Germany offers Humboldt fellowships.

Providing grants would be essential.

Research grants outside US

Research opportunities abroad especially in developing countries are limited, but travel opportunities to teach for a semester or so will be valuable to the young physicist in academe and also for the host countries.

Scientists who are US Government employees are highly restricted in being able to arrange prolonged foreign visits, i.e., more than two weeks. Hence, young govt. employee scientists have limited opportunity to establish strong international connections. This is to the detriment of all. A more liberal policy, including a sabbatical program, would be highly beneficial for young scientists at NIST, NRL, etc.

Send bright students to study at a European university for a semester or two. There's a great deal of collaborative programs at European universities in which a semester can be spent at a university in a different country yet count toward one's degree. Why not have the same in between the US and Europe? In these times in which the two continents seem to drift further apart, improved understanding of not only science but also culture can only be helpful.

Short-term exchange programs with foreign universities.

status quo looks ok

Sufficient.

That really depends on their advisors and their funding situation. Young physicists should by all means be exposed to the research performed in other countries. Also, more US graduates should try and seek postdoctoral appointments outside the US, and that foreign experience should be viewed favorably in their resumes.

the answer is yes

The current situation is fine.

The most important thing for graduate students is that they have the support to attend one (or even two) summer schools outside the US (typically Europe) during their time as a graduate student. The most important thing for postdocs and young faculty is that they attend conferences and workshops abroad regularly, say about twice a year. I do not see a role for the APS to play in facilitating either of the above, but if US scientists from smaller institutions were to advocate that help from APS is needed to make both the above happen, then you should listen and consider such an argument carefully.

The most significant barrier which limits my ability to visit conferences outside the US is the visa problem. I have one-entry visa in US and for me it is horrible to leave US, since nobody at my job is going to wait a couple of months while I am obtaining a new visa.

The question is not very clear. In any case, grants do not provide enough money to travel.

There are always physics-related reasons for traveling abroad. But for alien U.S.-based physicists with no permanent resident status there is still an issue of visa renewal in the consulates abroad. I personally do not trust any announcements of any office about relief of the security check procedures so I do not find possible traveling abroad until the permanent resident status is obtained.

There are currently sufficient opportunities for US-based physicists to travel abroad.

There are currently very limited funding opportunities for young physicists in US, which limits not only foreign travel but also independent research.

there are international funded programs offered by NSF and others that fill this role.

There are many and sufficient opportunities for young US-based physicists to travel abroad.

There are some opportunities, but some times they do not get enough publicity so that potential users learn about them

There are very few young (student/postdoc) American physicists attending conferences abroad. The same is true for young European scientists and conferences in America or Asia. Conferences abroad are simply too expensive.

there is always room for more opportunities.

There is no clear reason for young US scientists to specifically travel abroad. The world, especially of science, is now very uniform and international. The conference or event should be interesting: no matter where it occurs. In fact, the role of APS should be to create events in the USA interesting enough that people from abroad will come here on their own funds.

There seems to be a reasonable scope for young US-based physicists to engage in collaborative research in Europe in areas such as high energy and plasma physics. In my own area, biological physics, the opportunities are somewhat weaker. Collaborative research with groups in India and China is very possible and is not sufficiently exploited.

They are not getting enough. With today's global economy, it is not wise to keep us from the rest of the world. It is important for them to find out the practices adopted in other countries.

They do not get enough opportunities, but I am not sure what can be done to enhance their chances.

This is difficult for me to judge. I think the international travel procedures at the national labs are unnecessarily complicated, but this does not seem to be a real impediment, so I would say that generally speaking things work out well... It would be good if foreign postdoc experience were encouraged when hiring staff.

This is hard to answer, but here's my off-the-cuff reaction. It depends, on what the physicist in question finds 'important'. Is it for his or her professional development? Then travel to a foreign expert, working with a leading group in another country, etc., would be very important. But, what about a person's development as an individual? For better understanding of the world? For getting to know foreign women (or men, depending on the person's interest)? Travel is important for those things too. Having said this, I should also say that I don't know because I'm in the DoD consulting business, wherein international travel is not particularly necessary. But, from my observation of 'real physicists doing real physics' at the Advanced Photon Source, I get the impression that young physicists at such elite institutions get lots of opportunities to travel: how much they do it depends largely on the size of their (or their professor's) grant, and the field they are in (with synchrotron radiation studies being particularly international, as is particle physics:

my guess is that solid state may be less international (and less lavishly funded). Another variable is the physicist's background. If he or she is already from abroad, and came for study or a post-doc, and if they came from a developed country in Europe (Germany, England, the Netherlands, etc.) they would tend to keep contacts and travel back home, even when their work is in the US. It's different for US born and bred physicists, as you can imagine. At this point I should give a different answer, in the spirit of the earlier questions on contacts with developing countries: it's really important for foreign students to come to the US (or to Europe, including Britain), because that's where they might have a chance for a good job. In contrast, it's not important for US physicists to go to those countries, except of course for their personal development. In fact, that's what I did when I was in my mid-20's, before coming to the US.

To attend physics related conferences outside the U.S. without the complicated procedures in obtaining return visa.

Travel and exchange is almost always beneficial, so "enough" has to be in terms of some yardstick. It would be good for US-trained physicists to try to understand how creativity could grow among physics communities which do not have access to as many resources as are generally available in the US.

Travel for collaborative work is normally covered by research projects, at least for experimental work. APS should support travel for young physicists for conferences and exchange programs.

Travel of young Americans to European conferences might be important for young scientists in both continents, since only some Europeans travel regularly to the US.

Travel support for international meetings, and travel for conducting experiments in central laboratories abroad.

travel to Budker INP (Russia)

Travel to countries like India and China, or south of the border to experience a different reality in the way science is taught and experienced.

Travel to meetings abroad is very important in my field of physics. It has become increasingly difficult to do so because of government regulations (in particular, those at national laboratories, with which I am most familiar).

Trips are quite expensive and our grants do not cover travel expenses for our students (in the best case, one conference inside the US such as the APS meeting). Special funds for international schools would be very useful.

Undergraduate research abroad

US based physicists rarely travel abroad, especially if they are still in a temporary position (post-doc and such). That is because of reentry visa hassle and also because most of the PIs are not willing to pay for a trip abroad for somebody in their lab since there is always a US equivalent meeting. Even more important than attending physics meetings abroad would be doing a short research stage (1-3 months) abroad: this would give them a good opportunity to learn about the

different approach foreign scientists and universities have to research and would give them the possibility to forge collaborations.

US born students tend to be not that interested in traveling abroad for physics-related opportunities. (Existing exchange programs are not fully utilized.) It would be important for US students to acquire more international experience in view of the globalization of the high-tech companies where many of them will find jobs. The difficulty is getting them motivated to go abroad.

US citizens/permanent residents don't have a problem traveling abroad. US-based foreign scientists would have a tougher time going outside due to visa issues.

US scientists are isolated in terms of interactions with outside scientists. Europe and Asia have multiple collaborative programs, I do not know of many in the US.

Visa problems prevented a lot of US-based physicists who are not US citizens from traveling abroad. I don't think you can improve the situation for these young physicists without solving the visa problems.

Visiting teaching positions for US-based physicists would benefit the host institution and give valuable experience and collaborative opportunities for the visitor. Could be modeled after a research sabbatical.

well, it is interesting that you add the word "us physicists", in some cases travel support for US sponsored meetings abroad has been denied to me because I am not a US resident. Instead, many conferences in the US, will support European scientists traveling to the US venue... so I guess I do not understand the asymmetry. I think it would be good to provide alien young scientists working in the us with the same opportunities as those who are US citizens. In any case, I think that there is not enough support to young scientists in organized conferences. Invited speakers are always the same big shots, but never postdocs, who are the ones who really need to get their work known as their own, not their advisor's.

Well, the Internet makes physicists travel less and less. It is not clear to me "enough...". Perhaps, it depends upon the view of young physicist.

What I do requires traveling to international facilities. It is very important to provide young physicists to travel to international institutions and conference for experiment/collaboration as well as for building their own network.

with the growth in strength of international physics programs and the increase in research opportunities abroad, I believe it is essential that young US trained students get the opportunity to go abroad for joining research projects and participate on international collaborations.

Working abroad, meeting people abroad, making personal contacts

Yes

Yes

Yes

Yes

Yes, for materials physics it is useful for US-based physicists to visit countries that are ahead of the US in research (such as Japan), but researchers in these countries are sufficiently well funded to support visitors. Sending US-based young scientists to third world countries is not aiding their education and a poor use of US and APS funds.

Yes, I believe they do.

Yes, I think there are enough opportunities.

Yes, I think they are getting ample opportunities (but I speak mainly from the viewpoint of a particle physicist, where research at international sites, mainly European, are numerous).

Yes, I think they get enough opportunities.

Yes, there are enough opportunities.

Yes, they meet international scholar during their visits to the US or during the experimental collaboration in the National labs.

Yes, US-based physicists have ample opportunities to travel and work abroad.

Yes.

Yes.

Yes.

Yes. I think they travel abroad more than enough. In fact many of them spend far too much time traveling period.

Young physicist should travel abroad.

Young physicists in the US should have more chances to communicate ideas with people from Europe.

Young physicists should engage in a summer exchange program.

Young scientists need exposure to international science, in particular in Europe and Japan. At present, there are too few opportunities to do experiments or theoretical studies there.

Young US- based physicists will be more familiar with the country they visited and make interaction with physicists with other countries, it will bring cooperation and coordination between them and enhance their knowledge in physics oriented topics.

Young US based seem to have enough opportunity to travel abroad in my institution, a national laboratory, specially lately due to collaboration with the LHC.

Young US-based physicists are currently getting enough physics-related opportunities to travel abroad.

Young US-based physicists are not getting enough physics-related opportunities to travel abroad. They should try to spend some time abroad either teaching, or contributing to workshops/conferences. Traveling through different countries and cultures is a very enriching experience, as one gets exposed to different approaches to solving and thinking about scientific problems.

Students who earned bachelors abroad

A program that funded students to do research at a university abroad for a summer would be appealing. There could be some deal where one student from the US went to another country, and a student from that country came to the US.

A young US-based physicist myself, I have had no physics-related opportunities to travel abroad. That said, I do not believe I would take advantage of such an opportunity should it present itself.

Abroad travel opportunities are fair.

All of my experience abroad has been attending conferences. However, that will change shortly when the LHC comes online (I'm in particle physics) in that case, many more students will be sent abroad to do their research.

Although there are many opportunities to travel abroad, there is little funding in areas that would not be considered as "hot topics".

As a first-year grad student, I really can't make any general comments, but within my lab, a lot of people do go abroad for conferences, collaborations, etc. So there seem to be enough opportunities at least here in my lab.

As a student, I realized a long time ago that no matter how much I thought I knew, I really don't know much in the grand scheme of things. Any type of exposure to new information or even old knowledge that I don't know yet, is considered priceless to me. To be exposed to other minds from different Countries with a different type of upbringing and process of education should be considered a must for US-based physicists, at least in my opinion.

as a young physicist i would like to travel abroad but i felt i had no opportunities to do so.

As far as I have seen in my career, there is only opportunities to travel abroad in High Energy Physics. I believe there are excellent labs doing wonderful research in other fields (mine is Biophysics), and travel to some of these labs would be very important.

At my institution travel opportunities are sufficient.

Being a US citizen, I think that experience abroad is priceless. The majority of physicists communicate (or can communicate) in English and I think US students are limited in some aspect by not being exposed to an environment with different languages and cultures. Experience here would make for stronger international collaborations.

Being able to go where others in your field are making great progress is important. Personal interaction with colleagues is important.

Clearly not enough travel is taking place now. I did not travel to any foreign country during my PhD study. If some APS sponsored conferences were held abroad in Europe, that might be a place to start.

Collaboration with scientists abroad, and the opportunity to travel to their home institutions, is what I think is the best way to learn from experts in other countries (and to experience their scientific and social cultures). Conferences are easier but the second-best way, since they have no personal contact.

extended stays

From my particular experience as a theoretical particle physicist, I would say that these opportunities exist in modest abundance, particularly in the form of conferences and summer schools. I cannot comment on other subfields.

From my rather small sample, many have gotten the chance to do physics abroad. I have no idea whether that is typical or not.

From what I can see, U.S. based physicists can travel abroad.

From what I have seen it appears that essentially any physicist who needs to travel abroad for research purposes can find funding for it so long as they are frugal about where they stay and how they travel

Grants for attending conferences abroad.

Have some financial aid to go to conferences and winter/summer schools overseas.

Haven't had any myself, but not sure if my experience is typical. Maybe if there were additional grant programs or funds we could apply for, even competitively...

I am a young physicist, and I have not yet had an opportunity to travel abroad for a physics related purpose. I feel that there are options open to me, but I simply haven't availed myself of one yet. I thought about going to the CAM conference though.

I am not aware of all that many opportunities to travel abroad. However, while travel abroad would help in networking with young foreign scientists, the more established foreign scientists can often be met in the US, either when visiting universities, or at the APS meetings.

I am not aware of the opportunities that exist in this area. Maybe I will look into them now that I know. I think any service that can help researchers connect should be provided as much as possible.

I am not knowledgeable about the subject and I would not like to make a false statement about it.

I am not really familiar with the subject to answer.

I am unaware of any such opportunities, but I believe that exposure to research elsewhere is important.

I am uninformed on this topic.

I assume that there are opportunities for young physicists to study abroad, but I am currently unaware if the supply meets the demand. It seems to me that the culture is fairly asymmetric in this regard: many more people come to the US to study/research than vice versa. While I think travel outside the US is important culturally, I don't feel that it would necessarily lead to a better/more diverse educational experience. There are so many different researchers in the US (many from outside the US) that there is lots of diversity here. If US institutions/colleges etc. put more of a priority on studying in foreign countries then I think it would be important for the APS to facilitate it.

I believe ample opportunities exist for U.S. physicists to travel abroad.

I believe that young US-based physicists are currently getting enough physics-related opportunities to travel abroad.

I do not think that US based physicists are getting enough opportunities to travel. I think this is especially true in Asian (non-Western) countries. Learning about other languages, cultures, and research practices enhances ones own research. So I think it is useful for students to spend some time living, working, and/or researching in another country.

I do not think that young US-based physicists are getting enough opportunities abroad. As a young US-based physicist myself, I only know a few that have had opportunities abroad. I think any travel to labs abroad would be very beneficial.

I do not think that young US-based physicists get enough opportunities to travel abroad, unless they are conducting research at a remote synchrotron/accelerator. It would be nice to have funding for young physicists to present their results at conferences abroad.

I do not think there are enough opportunities to travel abroad. That said, I think it is more important to sponsor physicists in developing countries to come here if that funding choice has to be made.

I do not think young US-based physicists get enough physics-related opportunities to travel abroad. Additional travel experience that would be important is to go to major international meetings like IAEA or EPS.

I do not think young US-based physicists have enough opportunity to travel abroad. Exposure to international systems and cultures is vital for perspective on our own system. Due to the rigorous structure of graduate study, however, that leaves undergraduate summer programs (similar to REU's or internships) as the best opportunity for students to learn about these aspects of physics. Young professors are also too busy, but partial sponsorship of overseas post doc positions would also be a good idea.

I don't feel that I have enough information to make an informed answer to either of these questions.

I don't have enough information to remark on this, as I am still an undergraduate student. Physics related travel opportunities for undergrads do seem to be limited however, as compared to other disciplines such as chemistry.

i don't know anything about the first question. However, I do think it is important that more international collaboration occurs especially among younger physicists. These days there is less and less of a "brain drain" to the US. More and more talented physicists are staying in their home countries. this is a good thing for them and their home countries, but we all benefit with greater international collaboration.

I don't know if travel abroad is necessarily key. I have traveled around the US for physics conferences during my career. If a particularly important meeting occurred in a foreign country, I would hope to attend that too.

I don't know much about this topic - I have never been able to travel abroad for a physics-related opportunity.

I don't see any special need to specifically travel abroad. It's physics that's important, not the location, and there are sufficient opportunities to get exposure to the field domestically.

I don't they getting enough opportunities, and if they are I think these programs should be advertised much more. Young American physicists should be afforded the opportunity to travel to developing countries so the can interact more with the students there. This would help in increasing the interest in physical sciences in these countries.

I don't think many US-based physicists are getting opportunities to travel abroad mostly because their school/university does not inform the students. And APS membership is not being pushed on undergraduates like it was several years ago.

I don't think that young physicists are getting to travel abroad. I think that it would be important to see how european labs are run.

I don't think there are enough opportunities considering how big the physicist community in the US is.

I don't think there is a lot of information about opportunities to travel abroad. I think it would be great if young students would have the opportunity work abroad for short periods of time in other labs or to go to meetings to converse with scientists from other countries

I feel a chance to collaborate overseas with scientists from established and developing nations would greatly supplement our knowledge base as students of physics.

I feel it would be important for young physicists to visit other countries to experience alternate physics cultures in their area of expertise.

I feel that there is a dearth of opportunities for young US physicists to travel abroad. Of course, internships, and work with respected professors who do research abroad, lend more exposure, however, there is no true clearinghouse for the average US physics student to turn. Aside from the direct educational and professional experience, I feel that the ability for a young scientist to interact with his/her peers abroad, can definite open his/her understanding of what stimulates the thoughts of other young scientist. I guess the biggest example of this would necessarily be the development of quantum theory (which I feel to have been an exclusively European development). You must ask, had WWII not occurred, would the US have had the scientific advantage of QM? Ponder this while we consider whether young scientists need to travel abroad.

I have not looked into such issues. I could not offer a meaningful comment.

I have not yet had the opportunity to travel abroad, nor has it as yet been a concern whether any of my peers has the opportunity. Objectively, I believe that travel abroad could do nothing but help any student if for nothing else than to see how "someone else" thinks.

I have recently been given the opportunity to present research abroad, and believe that this will be invaluable. Many physics disciplines have an international community, and it would be invaluable for young scientists (such as myself) to interact with others abroad and gain valuable insight that may not be available otherwise.

I know multiple physics students who had an internship in Japan one summer. Not many physics-related opportunities are geography based, so I don't consider it highly important to their training as physicists.

i personally have had a number of opportunities to travel abroad for conferences, but many students have not. i think funding for conference travel and collaborations with international scientists would be helpful.

I really have no opinion on this as I have neither seen such a need for myself, nor for any of my friends (yet).

I see a lot of graduate students and post-docs traveling to man shifts at experiment sites and for conferences. It seems more prevalent in Nuclear Physics (my area) than for many other areas of physics.

I suspect many US graduate students do not get an opportunity to travel abroad because of insufficient funding. There is some funding available for conference-related travel, but I think that some of the most useful travel is not large conferences, for which there are special travel grants available, but rather small meetings or even short (few-week) visits to collaborators at other institutions. It would be great to have additional funds available for that type of research-related travel.

I think it is difficult for US physicists to study abroad because typical US citizens only speak English. I think the importance of foreign travel will vary widely within each field of physics, and for those fields and sub-fields that find international collaboration important, I think the institutions themselves put forward the travel monies to make it happen. I would probably not consider traveling abroad for any extended period of time because of my family constraints.

I think it is essential for younger physicists to travel abroad and help build a stronger relationship between US and foreign scientists. Younger scientists are frequently given the opportunity to travel abroad in order to attend a conference but the opportunity for a longer stay involving research at an academic or industrial institution isn't so readily offered. Extended time donated to research in another country will help make international collaborations more effective and exciting.

I think it's enough.

I think students should stay where they are and get their research done. There is no need to add additional distractions while students are completing graduate work. As for undergrads, I don't think the APS should fund physics undergrad to go sit on the beach in Brazil. Money spent on undergrads for traveling abroad is money that could be spent on Ph.D. students trying to complete real physics research. As for young US-based physicists professionals, provided a formal proposal process is used, I feel that this is a good idea. However, in the formal proposal, I think a key component will be to prove that go abroad is crucial for their success wherein the facilities make it possible for their work to be performed. I don't want to see US-based physicists from, lets say Antarctica, get funding to do research in Antarctica when they are simply trying to get money to spend a few months at home. I apologize for my cynazm, but I'm currently finishing up finishing up my PhD and funding, at times, has been an issue. I have a 4.0 GPA, and 4 peer-reviewed journal publications (2-first author), I was recently awarded 2 best poster awards one was at a regional APS meeting. However, I don't attend a tier-1 research university and I'm not a minority or female, so after 4 tries for funding, NSF, DOE, NASA, and ...No wait I guess it was just 3 (the APS doesn't even have a funding opportunity for the second largest demographic category in the US, second only to the white female, the white male. WTF!!!!!!!!!!!!!!) I am a little perturbed to hear about people be sent abroad to "experience the culture" when I am here in the US conducting good research and am up to my ears in debt(and they don't have special loan programs for white males either)...Doing some quick research...12.6% of US are below poverty limit. 12.6% are black, 4.3% are Asian, and 14.6% are Hispanic, and 66.7% are white. Granted, these percentages become very different when normalized to the total number of people in each group. However, poverty is poverty, so why are we always concerned about the percentages of poor instead of the total number of poor people. If a company were to produce bad parts with the same above percentages for their 4 different product lines, they would not allocate resources towards in accordance to the # of

defects normalized to their gross production numbers, they would allocate them based on the total number of defects. I wish the APS would do the same...Its very upsetting for me to see that there are over 6 scholarships for women and minorities and none for white males.

I think that ample opportunities exist, but I found that they couldn't accommodate many people, such as myself. Generally, they increase the student's undergraduate program by a year, which usually means the student isn't eligible for financial aid for the last year of school. Also, given how competitive the study abroad programs are, few people are able to participate.

I think that it is important that opportunities be given to travel outside of the traditional regions where Physics conferences are held (Europe, Russia...). While older physicists may be invited to give talks in rapidly expanding regions (India, South America...), fewer opportunities for interaction among the younger physicists of these regions with younger U.S. physicists exist. It is in such interactions that there can be much to gain from the sharing of ideas.

I think that more grants should be available to students wishing to travel abroad for conferences.

I think that obtaining research experience at prestigious foreign laboratories or universities is important for young physicists.

I think that there are adequate physics-related opportunities available for US-based physicists to travel abroad, especially if one takes the time to search for these opportunities through physics newspapers, physics journals, and information online.

I think that there are many opportunities for young US physicists to travel abroad and I know several that have done so. However, I think that this effort could be expanded to make it easier for the prospective travelers to learn about these programs and reducing the bureaucratic requirements.

I think that we are. I know many colleagues who have traveled abroad for physics-related reasons. I think that even for those that want to and haven't it might be more of an issue of not knowing where or how to look for the opportunities and funding.

I think the opportunities are there in terms of conferences, but the costs are often prohibitive.

I think the situation for young US-based physicists is fair in general.

I think there are enough opportunities, it is more a matter if there is sufficient funding to take advantage of the opportunities abroad.

I think there are plenty of opportunities for travel. At my university, the younger faculty and graduate students do quite a lot of international travel for experimental collaboration and conferences.

I think there are plenty of opportunities to travel abroad. A number of my friends have taken advantage of them.

I think there are sufficient opportunities to travel abroad in this context.

I think there are sufficient opportunities. I don't think there is a tremendous amount of interest among young US-based physicists in traveling abroad.

I think they are.

I think this is a matter of initiative on the part of the young physicists. If they sufficiently desired to do so, they can.

I was lucky enough to be able to participate in one of the few international REUs (at CERN), but more of these type experiences should be available. More effort should be made to address young physicists' fears that they will be cut off from the US (and thus a future US career) if they spend time abroad. Providing postdoctoral and other fellowships for a year or more of research abroad (maybe in partnership with collaborators in the US) would encourage more young physicists to go abroad.

I would say they are, as I have been to Europe about once a year for a conference in the past two years. And I'm moving to Switzerland this year, which certainly counts as a physics-related opportunity to travel abroad.

If the conferences happen to be abroad, then it's good for people to travel there. It's not obvious to me that doing a short research project elsewhere is that important. However, I grew up in Europe, so perhaps I have less of a desire to travel than US citizens who never left the country.

I'm not really in a position to say.

I'm not sure, frankly. I'm in condensed matter theory, and it seems like most travel abroad is with high-energy or other big projects (LHC, ITER, etc.). I'd be happy to see more opportunities for travel abroad for students and young researchers, independent of big international projects.

In my experience I feel that young US based physicists (or scientists for that matter) do not get enough opportunities to travel abroad or at all. Funding is low, as we all know, and PI's choose to spend money on equipment or daily activities, travel for themselves and others who have PhD's so students get little or no exposure to conferences until they are almost finished. Being exposed to other research and communities earlier in ones career I believe is essential to a mature development of a student. This definitely needs to be continues into the young PhD's as well. I find that those who have traveled the most and have interacted with many different people can convey their ideas more effectively. This is important in our rapidly changing world. I believe that there should be more funding available to physicists (or physics related fields) at all stages of development for travel both domestically and internationally. One of the issues that I have experienced is that I don't know about the travel funding opportunities until it is too late to apply. Also many of the dates are very early in conjunction to the deadlines for various conferences. There needs to be a user friendly way to see previous deadlines and ones in the future so its easy to know about the opportunities that exist. One could also consider having more rolling deadlines or multiple deadlines for opportunities to fund travel.

In my experience some young physicists do get such opportunities, and others do not. Those who do are usually involved in international collaborations. It would be good for those who do not to get international travel experience. There are many international conferences, and it

would be good if there were plentiful opportunities for all students to attend such meetings. While some opportunities do exist, in many instances it's the costs associated with international travel which prevent students from going (or, rather, prevent research groups from sending students).

In my experience, opportunities to travel abroad are dominated by the student's graduate advisors ability to fund such travel and study. Other programs offering such opportunities are few and far between or at least not well advertised. I think travel opportunities would be very valuable.

In my own experience, I have traveled abroad for research-related purposes twice (once for a conference and once to meet foreign collaborators). Both trips were incredibly valuable not only for my own research but also for exposing me to the work and scientific culture of the world community of physicists. These trips also helped me make connections with physicists abroad, which helped me get a postdoc position in Europe. Travel experiences such as these should be more common for graduate students. Physics really is a world-wide collaboration and more young US-based physicists should have this kind of exposure to the broader community.

In my undergraduate time I tried to study abroad in Beijing in a program that was meant to be physics/engineering related and it turned out that it was just the usual non-scientific study abroad despite the way it was advertised. Working abroad for anything more than a very short period of time was discouraged because people said "you will be out of the loop and find it hard to get back into the U.S. system". So I would say: What physics related opportunities to travel abroad?

It depends very much on the group someone is in. In my group we have plenty of opportunities to go to conferences abroad but this is not true in most groups in the US. However, I was extremely disappointed to discover that the NSF stopped supporting the REU at CERN that I had participated in. I think that REUs abroad are incredibly important, especially considering that the undergraduate science curricula are not typically flexible enough to allow study abroad.

It has been only 5 years since I took my first (introductory) physics course as a freshman in college. But even during my extremely short career in physics I have spent six months at CERN, attended schools in Sicily and Les Houches, and participated in workshops and conferences (including those at which I was an invited speaker) in Paris, Geneva, Edinburgh, Vienna, Marseilles, and Cambridge. I have more than 100,000 frequent flier miles and virtually all of this reflects physics-related travels. So in short: physics has given me more opportunities to interact with people abroad than I could have ever dreamed possible 5 years ago. Physics has expanded my horizons in more ways than one, and I am truly grateful for the opportunities that I have had. And yes, I think it is terribly important that young physicists get a chance to meet and interact with people working in their field across the globe. Science knows no borders.

It is hard for me to comment on this as I don't know about the opportunities available to the US-based physicists. In my opinion this is very important since a lot more universities in the developing countries are being funded very well now and the interaction with US-based physicists will benefit both sides.

It is not usually necessary for us to travel abroad. Most important conferences are held in the US. Travel is increasingly difficult as airport security in and entering the US grows, I have little desire to travel even within the US. Fix airport security and then I would say it would be a good idea to send students abroad.

It seems a lot of my friends in physics are getting to travel a lot more than me. I would really like to be able to travel abroad. I'm sure it would be a help in making me more aware of the field.

It seems that there are plenty of opportunities for international collaboration, though I don't see very large numbers of my peers taking advantage of them.

It would be great if there were more REU programs abroad as well as other organized summer programs for graduate students.

Just simple travel grants for traveling to society meeting that may be out of the budget abilities of certain institutions.

More collaborative work should be promoted with grants offered for students willing to travel each way between the US and developing countries.

Most assuredly not. They are not getting any opportunities to travel abroad, in fact, it is highly frowned upon. I am dismayed at this, and find it is hindering student's versatility and skill development.

Most students at my institution do not travel abroad for physics related events. It would be beneficial for us and the US image to have young scientists attend more international meetings. Having programs that would fund such endeavors would be essential here as few Professors' grants could cover these expenses.

My impression is that this varies widely by research field in physics. In particle physics, international collaboration is the norm and travel is a necessity. This may not be the case for smaller-scale experiments in areas such as AMO and condensed matter physics.

No, I do not think that young US-based physicists are traveling abroad enough. More financial support, as well as increased information resources for international research locations would be necessary, although not necessarily sufficient, for increasing this number. I think the opportunity to work at foreign laboratories and research institutions in both developed and developing countries is absolutely integral for many areas of physics, yet very few Americans are presented with this opportunity compared to our international colleagues. Familiarity with other research techniques and perspectives shapes any scientist's ability to discern between good and bad approaches to nearly any problem. Our European colleagues, in particular, are becoming increasingly well adapted to working in an international community of research and the young US physicists who spend their entire careers in a single laboratory will be at a disadvantage to participate in such collaboration in the future.

no, I don't think that they are. I don't think that the opportunities are made known to young US physicists.

No, many US students do not get this chance. It seems that most students that do get the chance are either in high energy physics (HEP) or astronomy. Other students seem to lack these opportunities. I assume it is a matter of where most of the funding goes. Nonetheless, I think all young US physicists should travel more. The US has a chronic problem of not understanding the rest of the world. Not only would such travel help students make connections with other physicists, it is also imperative that US students gain experience outside of the US. Physicists are very influential people. They should have a good understanding of other parts of the world and other cultures. This is important because statements by physicists have great political sway. We must take care to be as informed as possible. Part of being informed comes from being well traveled. Also, physics, particularly HEP and astronomy, is a global field. US students need to understand other countries better to help facilitate international collaboration.

no, not enough research money to support students traveling.

No, research collaborations with institutions in both developed and developing nations could be mutually beneficial.

No, travel grants for international conferences would help young physicists learn about research in other countries as well as allow them to meet with distinguished physicists outside of the United States.

No. In my field, travel experience is fine. In others, I've noticed that they rarely travel. I believe that they should be able to travel to international conferences and/or participate in international collaboration.

No. I do not know any young, US-based physicists who have traveled abroad for physics-related purposes, at least in the DPP. Scientists in my research group have attended international conferences, but they are all over 30. Certainly, having an opportunity to present research at an international conference would be a wonderful opportunity. Given today's funding resources, this typically precludes graduate-level presentations.

No. Travel to international conferences would be very important.

Not at all. There needs to be more promotion of programs to give US Grad and Undergrad students opportunities aboard.

Not. A major "march"-like meeting gathering physicists in Europe, another one for Asia (both top quality research grounds) to which US-based physicists were encouraged to participate.

Personally, I believe it is important for young physicists to travel to learn and present their work. I also believe that lots of young physicist take these kinds of trips just for fun and are not serious about the work. Everyone likes to have fun, but the main purpose of these trips is to contribute knowledge through presentations, do work abroad, or attend an interesting school abroad.

Possibly. Speaking from personal experience, I've gotten to travel abroad once for a conference and found it both beneficial and enjoyable. More opportunities would be nice, but I can only speak for myself.

Short externships (a month or two) in research labs in other countries are very valuable.

Sure

the APS could very well be doing an excellent job in this regard, however I have not personally heard about such opportunities sponsored by the APS. So in this light I would recommend that a larger emphasis be placed on diffusion of these travel opportunities abroad. In general, I do think there are conferences and summer schools that students can attend, so there are opportunities.

The physicists I know have ample opportunity to travel abroad because of all the international conferences in exotic locales.

There are plenty of good opportunities but not enough money (esp. scholarships) available.

There isn't enough federal funding for all young physicists to travel abroad and gain international experience. While not all research is going on overseas, it would still be nice to have the opportunity (i.e. enough funding) for them to do so. This overall problem stems from a lower amount of federal funding for science in general, in my opinion.

There seem to be a fair number of opportunities, but they are not evenly distributed among students. Some students have abundant opportunities while others have none.

There seem to be plenty of APS related conferences abroad, and the student registration fees for APS conferences are almost always reduced from the professional Ph.D. rate. I think, however, that whether or not young physicists attend is determined exclusively by their Advisors and their departments. There seems to be a prevailing view that it is too expensive to send students to conferences abroad, so most Advisors (in my experience) will not send their students even though they would if the conference was in the U.S. It might be a good idea to inform professional physicists of the real difference in costs or to provide a reduction for professional physicists to go to conferences abroad if they bring their students with them. In sum, I think the lack of student participation in conferences abroad is due to the perception of their advisors (and/or departments) that traveling abroad is too expensive. Whether or not this is true depends on the individual case, but there is certainly no lack of available opportunities.

There seem to be plenty of opportunities to travel to developed countries. I'm not sure about opportunities to travel to developing ones.

Travel opportunities to do medium to long-term based research would help. Publicizing this is very important, as well.

Unsure. I know students who travel abroad frequently and others, like myself, who have never had the opportunity or ability to pay for such travel.

US-based physicists have opportunities to study abroad. However, these are usually through interpersonal relationships or specific fellowships. These programs are helpful for these scientists.

We can always use more opportunities to travel. By allowing physicists to travel, new and beneficial collaborations may be set up.

yes

Yes

yes (but based on only a few data points)

Yes and I hope the trend increases.

Yes, a good percentage maybe 10% of graduate students in my program have traveled abroad to give talks and or collaborations in my recent memory.

yes, for those that seek them out.

Yes, I do. Unless they intend to conduct research abroad, I don't believe having research experience abroad is at all necessary, and I'm not aware of an inadequacy in travel abroad opportunities for the few US-based physicists I've known who wished to conduct research abroad (and not just primarily sight-see).

Yes, I think people get lots of opportunities based on their research topics

Yes, I think they have enough opportunity to travel abroad. More would be nice, but it seems sufficient.

Yes, well I am so I assume its possible for everyone but I guess there could be more

Recent entrants into workforce who earned bachelors abroad

As long as you are an American or European citizen, I believe there are plenty of opportunities to travel abroad for research related purposes. I've seen several colleagues avoid international conferences because of visa issues. I find international workshops to be particularly helpful.

At least one conference a year abroad would be very helpful.

Conferences abroad Research semester abroad

Doubtful, of all my colleges in graduate school I knew of none who traveled abroad for physics-related opportunities, not even an occasional conference. I would recommend increased travel for both conferences as well as face to face interaction with international collaborators. Although graduate studies in physics within the US provide significantly more exposure to international students, cultures and research than many other situations within the US I believe that further exposure through actual travel would likely further improve international collaborations as well as general international relations. When young people travel and experience other cultures they bring back pictures and stories that are shared with friends, family

and often the internet as a whole. This helps to improve cultural understanding throughout all socio-economic areas of the USA. Simply having met and worked with international students within the USA has a similar effect but only for those individuals with whom there is direct interaction, there are fewer photos or stories told and most can be more easily dismissed by the prejudiced by claiming those individuals cited are the intellectually elite and not representative of the rest of the culture.

For now, Physicist in this country needs to participate in more meetings

From my experience as a recent Ph.D. recipient, I have been to only to one physics-related opportunity outside the United States. Primarily this was due to my advisor's limited funding for conference travel. I believe that it would be useful for the APS to make known any possible funding that might be available to students to take part in physics opportunities abroad. I believe it is important for young physicists to make connections and experience the international physics community.

From what I have seen, opportunities to travel abroad are relatively rare.

I am a mechanical engineer, so I cannot comment about physicists. There are many conferences outside the US, but many funding agencies within the US restrict student travel to domestic only.

I am not very familiar with the opportunities available.

I believe that there are opportunities. The only suggestion that comes to my mind would be if the APS, in conjunction with other regional physics organizations, wishes to organize a conference specifically for early-career physicists. I can envision this conference including: A technical program of attendees presenting on a broad range of topical research. A professional development program including esteemed and senior scientists from academia, government, and industry presenting their life/career stories and lessons learned and having a lot of time for questions, mingling, connecting, and also presentations from the physics organizations about resources and tools available. A social program including many opportunities for attendees to meet, network, connect and also with some fun activities. Attendance would be early-career physicists employed in all fields and across work sectors and from around the world.

I believe that US-based physicists are currently being given about the right amount of opportunities to travel abroad. Many meetings are routinely held outside the USA, and collaborations abound with Europe and Asia, at least.

I believe that's very field-dependent. For the most part, I think money for travel can be found if the PI is motivated, but as a postdoc, I have little direct experience trying to secure such funding.

I cannot speak for others, but I have had ample opportunity and encouragement for physics-related travel and collaboration abroad.

I do not think that young physicists get enough experience abroad. It should be very important for young physicists to get an opportunity to go to one conference abroad in graduate school.

I don't necessarily think it is important to travel abroad, but that it is mainly important to go to a good number of conferences, no matter the location.

I don't think many graduate students in condensed matter physics get to travel to international meetings since there are great opportunities here in the US.

I don't think that traveling abroad is that important for that advancement of science. We in the USA are very privileged that international scientists travel to our meeting here, allowing us to forge the needed connections world-wide.

I feel that travel to international conferences is essential.

I hope to take advantage of international travel when I have more results to present.

I only know about research group-specific opportunities, which were and are sufficient in the groups I've worked in.

I really cannot comment on this. However, I have never considered a lack of opportunity to be an obstacle. The reason I have not gone abroad is simply a personal choice.

I think it depends on your advisor. Some advisors are open to attending international conferences and others are not. I have friends who go to international conferences/summer schools at least once per year, whereas I have not.

I think so. US, Japan, and Western European countries are the only handful of countries that can really support a large number of students traveling abroad.

I think that I do think they are getting enough physics-related opportunities to travel abroad.

I think that such opportunities exist and are accessible.

I think the opportunity exists, but unfortunately, the funding does not always exist.

I think the travel opportunities at present for young US based physicists are rather good, but it is hardly something that there can be too much of. I think it is important to emphasize programs that involve working abroad, more than just attending conferences (which are, of course, also important).

I think they are sufficient

I think they're getting enough opportunities. I don't think they need that many since it doesn't seem essential to their careers, and there is a great deal of international exposure within the U.S.

I think young US-based physicists in my field have ample opportunities to attend European or Asian conferences. They are limited only by their travel funds.

I would like to see grants to give talks at foreign conferences.

In my experience, there are plenty of opportunities for US-based researchers to travel abroad for conferences, workshops, etc.

In my experience, there has been ample opportunity to travel abroad - both myself and close colleagues

It depends on the funding situation in the department they are affiliated with. Most people I've worked with have not had problems getting funding to attend conferences.

It has been my experience in my field that generally young scientists are passed over for opportunities to travel abroad (e.g. to foreign-hosted conferences), due to the fact that travel funding is limited. Attendance at such conferences by young scientists would help provide a broader perspective in one's field, given that many foreign scientists are unable to attend conferences in the U.S.

It takes a lot of work to organize foreign travel from a US national lab.

lowering the cost for international travel would be essential!! also, many international (esp European) conferences have bursaries/fellowships available to defer travel, registration, and accommodation costs for young participants, but these are usually not available to those outside that country. Some method of providing cost coverage would be essential.

Maybe at the topical-group level there could be scholarships. I work in general relativity, and there is an international conference every 4 years I believe. It would be great if the topical group in gravitation were to have travel grants, like they do for the April APS meeting.

Might be nice to have more advertised physics-based job opportunities abroad (intro level and temporary positions esp) outside of academia

More international REU's. Travel is difficult for graduate students unless a specific collaboration is already in place, and you can't force research and relationships that way. Assistance for finding and obtaining international post doc positions would also be good.

More travel experiences would be nice, but I don't think this should be a top priority. Travel to conferences and labs related to their research areas are most important. If those happen to be out of the country, that's a bonus.

My observation is that many opportunities exist for young high-energy physicists.

My sense is that there are many opportunities to participate in international programs - funding and time seem to be limiting factors, not availability.

No, young physicists are not given much opportunity to travel abroad. Having exchange programs between universities or national labs of young physicists would foster better understanding.

No. Easier travel abroad (visas).

No. The cost of traveling overseas or even across the US is expensive and then you have hotel/meal/taxi/conference fees. More student awards covering these costs would greatly assist in getting young scientist to travel abroad.

Students at the better universities probably have opportunities, while students at universities with lesser reputations do not. Funding to attend conferences outside the United States or to work at places like CERN would foster communication and cooperation, but one has to solve the disparity problem in the US educational system.

The more the better, especially to develop collaborations.

There are very few opportunities to do so. My conference in England was funded by a travel award from my graduate school. More funding from APS would always help.

There is a need for more exchange at the early career level. I was fortunate enough to be able to use the NSF East Asia Program to go abroad for a summer. However, I did not consider doing a post-doc abroad due to the potential problems I saw in re-establishing my career in the US.

There is not enough collaboration amongst US and world scientist.

They're not what would help are research programs allowing students to spend summers/semesters working at research facilities overseas in their specialization areas.

This seems to depend greatly on ones graduate or post-doctoral advisor. Some young physicists are given more opportunities than others. I think summer schools and small conferences are the most important experience for young physicists.

Travel for young physicists should be focused on the content of information exchanged at the travel destination, not where that destination is located. Traveling abroad is a great way to get a vacation using grant funds, but is not critical for the development of a physicist. The vast majority of active international physics groups will send a representative to one of the major North American meetings (March or April), and a more efficient use of funds would be to create specialized meetings and training sessions around those meetings, rather than supporting free standing meetings all over the world and throughout the year. If the physics community wants to complain about funding, they need to be prepared to demonstrate responsible stewardship for the funds they have been given. Sending students overseas is more properly viewed as a generous perq, not something that is required for training in physics.

travel to australia

Travel to conferences abroad is important, but I think young US-based physicists should be given collaboration opportunities that allow them to work side-by-side in foreign labs with the foreign colleagues. This interaction provides not only a rich, motivating interaction, but helps US physicists better appreciate and understand the work of our non-US-based colleagues

US based physicists have essentially no opportunity to travel abroad until they have their own funding and can grant their own approval. However, with many international conferences held

in the US, I think additional funding for travel in the US should be a higher priority than international travel.

US-based physicists are currently NOT getting physics-related opportunities to travel abroad. Furthermore, I would say it is discouraged in certain federal labs, in particular the DoD.

Yes, in my field, young physicists get a lot of travel experience. Maybe too much! But it is valuable, as our community is very international and these trips stimulate productive collaborations.

Yes, my experience has been that there are many opportunities for young physicists to go abroad to conferences, workshops, summer schools

Yes, travel has been adequately provided by my universities.

Yes.

Experienced workforce who earned bachelors abroad

A great impediment is funding. In our department faculty have received invitations to speak at conferences abroad that they could not afford to go to. Internationally-based conferences is a first step in developing international collaborations. While we do meet international physics at US conferences, it represents a certain subset.

Active particle, nuclear, and astro-physicists probably have ample opportunities to travel abroad. In some other fields, where individual budgets are smaller and the work is one individually or in very small groups, opportunities are probably fewer, and young physicists might benefit from participation in important projects overseas.

Additional opportunities to travel to international conferences would be helpful.

Additional travel experience is not the issue, the issue is lack of effective recruitment from developing countries.

Adequate

Adequate opportunities for travel abroad exist.

All DoD and NSF money is for domestic travel. You must have a private stash to travel abroad.

All post-docs should have the opportunity to travel abroad at least once just to see how science is done in another part of the world.

American physics students often interact with fellow students who are from other countries. This interaction provides valuable cultural experience for both parties.

Among my acquaintances who are young physicists there has been quite a bit of international travel. It looks to me like opportunities are there for those who want them.

Anything that can foster relations with physicists in developing countries is good for the spread of viable physics research worldwide.

APS could usefully provide a program.

As a grad student ten years ago, I traveled to England, Germany, Brazil, and Mexico on short fellowships or for conferences. I don't think much has changed since then and I think I had plenty of international exposure.

As far as I know -- the International meeting I typically attend is the LT meeting (next one in 08 in Leiden) -- and graduate students with whom I've worked have been able to attend LT.

As I am in particle physics and by and large students do get opportunities to travel abroad usually to do their research at a lab located outside the U.S. and also to attend conferences.

At least in my own area, CECAM plays a major role here. I believe the number of opportunities is sufficient.

At least in the research areas I have been involved with, young US-based physicists have had many physics-related opportunities to travel abroad.

At national labs, US government policy makes foreign travel much more difficult than domestic. This fact plus budget issues typically result in fewer opportunities for younger researchers to travel abroad.

At reasonably funded institutions, yes I think opportunities are adequate. Fellowships to students to partially support long-term international stays could be helpful for students who need long-term work abroad with unique apparatus as part of their thesis work.

At the place where I am still engaged in research (NYU) the graduate students and young faculty seem to travel a lot. When I was a young Ph. D. (1960) I did too and it was very good for me.

At the universities with which I am associated the answer is yes.

Attend international conferences in his/her field

attend meetings

Attendance at foreign conferences is extremely limited for students and staff at FFR&DCs, and is an important experience that meant a lot for me.

Attendance of foreign meetings and the chance to collaborate at foreign labs

Based on youth attendance at the conferences I attend, there seems to be adequate representation and availability to travel. These are mostly metrology conferences, so they tend to be skewed

older anyway. The bigger problem is political limitations placed on foreign travel in election years.

Because I work in a large international collaboration, the young researchers I work with do get adequate opportunities for international travel. I am not in a position to judge the situation in the larger community.

Because of a lack of information on my part regarding this matter, I cannot make a comment.

Because of tight fiscal environment, fewer opportunities are being used than could be.

Because of the industry I work in (defense) my interaction with international colleagues & institutions is severely limited. I do not think there's a lack of opportunity just I myself have not participated.

Being retired for several years, I'm afraid I'm not in a position to comment meaningfully.

Between the wide range of opportunities in the US, the Internet, and the archival literature, its not as important now as it used to be, for scientists to travel abroad.

Certainly in particle physics, young physicists have the opportunity to travel abroad at least once a year.

Collaborate in the EU and Japan

Companies have cut back on travel to conferences as they trim expenses. They do not understand how important it is for physicists and other professionals to be able to discuss new ideas with their colleagues.

Conferences are the key because they lead to recognition, relationships, and collaborations. But international conferences are expensive, and so many cannot afford to attend them with any regularity.

Continued and expanded support for young scientist to attend international conferences

Coverage is very spotty. It all depends on the contacts of your research group. some have great opportunities, while others have almost no chance. A year studying abroad is potentially useful for young US physicists, especially in an ever-shrinking world.

Current opinion is that opportunities are adequate.

Current visa requirements make international collaborations difficult and time-consuming.

definitely need more opportunities to travel/study abroad.

Definitely. With the development of the LHC, GSI, J-PARC, RIKEN, SNOLab, there are ample opportunities outside the U.S.

Depends on employment

Depends on the grants. Our research falls under "Space Physics" and the support has been decreasing

DOE often limits the attendance at international conferences abroad. This tends to limit the opportunities for young physicists to attend conferences.

DOE rules on domestic and foreign conferences have become more harsh, discouraging some of our younger people to attend them. Long-term foreign leaves are hard on students with families, but short-term travel can be valuable, at least to make foreign contacts.

Domestic and international travel are perks of being a physicist that we tend to take for granted. I work with a lot of very senior and very talented electrical engineers who are lucky if they are able to attend one domestic conference a year -- and have never traveled abroad on business. Only physicists have customers who are willing to pay for these perks.

Don't know. Must vary widely among fields. Opportunities exist in my area (particle physics).

Don't think this is an important issue

Due to the cost associated with foreign traveling, most research group cannot afford to send students or postdocs to foreign conferences. APS can help in providing scholarships with foreign sister organizations e.g. in European physical societies and Asian physical societies etc.

Electronic communications (internet) obviate the need for travel other than location specific activities (as in astronomy) or cooperative experiments where unique equipment is required.

Enough

Enough. But I still think that our Scientists should FIRST work in and for the USA.

Europe and Asia seem like important regions for this.

Europe is developing large-scale collaborations with mobility of young scientists among participating research groups in different countries and universities. This provides a heady scientific environment for young scientists, more of them should seek postdocs or visiting positions in Europe.

Even limited travel (conference or a school) is very good.

every us-based physicist needs foreign experience. It will enrich the us physics community immeasurably.

Except for agency approval red tape, it's adequate.

Exchange in my field between the US, Europe, Japan, and China is moderately easily accessible. Exchange to Korea and India is available, but not so easy.

Financial support to go to conferences abroad

Fine. Important to travel where need to to get good, usually US is okay

For experimental particle physics, it is very important to have young US based physicists be able to collaborate effectively on the LHC experiments, by working directly with collaborators to participate in key analyses. Whether the support is adequate remains to be seen.

For those interested the opportunities are there.

Foreign travel for US Government and National Labs requires a rather lengthy and cumbersome approval process which tends to limit the number of foreign trips for both senior and junior staff. In the last few years, travel to Canada was declared foreign travel and hence falls under the same restrictions. In general there is not enough flexibility for travel to Europe or Japan for conferences.

Foreign travel is important, but with the attitude toward the United States it could be a concern.

From my own observations, in my particular sub-field of ultra-intense laser-plasma interactions, there seems to be quite a healthy amount of international travel for students. In particular, workshops in Japan and Europe on short pulse laser matter interactions have been very successful in not only exposing US students to efforts in other parts of the world, but also serve in attracting bright foreign scientists to the US.

From my view, US physicists are getting enough opportunities, but the reverse needs to be improved (visitors from abroad in the US)

From reading the APS News, young physicists and students have physics-related opportunities for travel abroad. I think those opportunities are important.

funding restrictions make foreign travel by young scientists difficult -- hard to fix given how tight the funding is currently

Funding to go to conferences abroad.

Generally speaking it is rare for a young physicist to be given funds for travel to international conferences unless they are presenting results. Most active young physicists should be given the opportunity to attend an international conference every 2-3 years independently of whether they are giving a talk.

Generally yes - though cost is probably the biggest issue.

Going to international conferences is of course important. It would also be very helpful if funding opportunities were available for short visits (of, say, a week to a month's duration) to establish or invigorate international collaborations.

Good physicists can get the funding to travel to foreign conferences. If they can't get funding, perhaps they're not deserving of the expenditure. It's not the responsibility of the sponsors or the APS to provide "travel experience" for young physicists. It's their responsibility to make it

happen. My 27-year-old son, who works in another line of business, has traveled extensively in Latin America on his own, and he's already gone to Europe twice for work.

graduate students and postdocs would benefit from more international summer school opportunities.

Hard to quantify. Some US companies (similar to mine) provide this opportunity, but I want to guess that the number is small.

Hard to say. In my field of particle physics, travel outside the US happens as part of the job. I can't say if young physicists outside my field are getting enough travel opportunities. However, it is clear that such travel is very important for their development.

haven't thought about it before. in my own sphere of experience, where it fits the research needs, we find a way. However, with email and the internet, it's not too hard to collaborate across oceans without extensive travel. For the students to get enhanced cultural exposure on the other hand, it's very important in the global economy, however, this should be integrated into undergraduate curricula somehow, rather than be shouldered by a professional membership organization like the APS. There would never be enough resources to do reach all deserving students (it should be all of them, probably, in order to help break the US born students out of their geographically isolated upbringing).

I am a proponent of anything that helps young scientists broaden their experience.

I am concerned that there are - at least in my field - almost no "young, US-based physicists". They are all from abroad and have no stated commitment to remain in the US long term. I think that the APS should develop programs to support US students to become physicists, and US universities should train US citizens in this field. At the present time, we are educating only the rest of the world.

I am currently unfamiliar with the travel experiences of young physicists.

I am finding that the young US-based physicists are not taking sufficient advantage of the existing physics-related opportunities to travel abroad. The younger physicists seem to have less interest in foreign travel.

I am in no position to know. But why limit travel to "young" physicists - they're not the only ones who should or need to benefit from international travel and collaboration. - An "old" applied physicist.

I am no longer involved in a scientific field and believe myself incompetent to comment

I am not able to comment generally about the experiences of young physicists. Those that I know seem to have good opportunities to work abroad for short terms.

I am not clear that they do not have enough opportunities, but I believe that these are either few or are left unused. The best experiences will be short-medium length visits (1-week to 3-months) to create useful working relations with researchers there.

I am not familiar with the current opportunities that exist for young US-based physicists to travel abroad.

I am not in a position to comment because I am not "organizationally involved" currently. However, I think international exchange in physics is vitally important for the U.S. and for the contributions of the physics community to the world's intellectual and cultural as well as specifically scientific life. Engaging young physicists, especially during later graduate and early postdoctoral work, can be effective in engaging them throughout their lives in this important aspect of scientific life that is a traditional virtue of the physics community.

I am not in a position to comment on whether or not US-based physicists are getting enough opportunities for international travel. That being said, it certainly would be valuable for all scientists to have some experience abroad, whether it's part of collaborative research for thesis work, post-doctoral collaboration, or just part of a summer stint early on in graduate studies. Given the technological tools to collaborate at a distance (web meetings, conference calls, server access, etc.) much can be done with respect to international interactions without travel. The discussions, meetings, and joint work prior to such travel would probably help define the objectives of a visit and might help provide justification to appropriate granting agencies or departments, given that a ground work had been laid before the request for help with travel expenses was initiated.

I am not sure that they have enough opportunities to attend international conferences. It is almost too expensive to pay their way on a typical research grant.

I am not sure that travel abroad is the most important issue facing young US scientists. They have other issues: the failure of older colleagues to retire, the general failure within the US to support small groups, the overall lack of competitiveness of US research & technology, and the long haul to tenure. Of course, if these trends continue, young US scientists will need much larger support for foreign travel, because it will be the only way for US scientists to see state of the art research programs

I am not sure there is an overwhelming demand for such opportunities. Support for extended stays rather than for attendance at Conferences should provide more substantial experiences.

I am not sure what opportunities currently exist. I work in academia and many colleagues have traveled abroad.

I am not too familiar with such programs, but my understanding is that they are very competitive. The physics related opportunities are there, maybe we just need more of them.

I am not well informed in this area but it would seem that they have ample opportunities.

I am unaware of the number of opportunities available and/or used by US physicists. I think the important thing is that researchers should be able to attend an international conference that deals with their field regardless of where it's being held. This would apply to US researchers going to foreign conferences, or foreign researchers attending pertinent US meetings.

I believe young physicist are most concerned about jobs in the United States.

I believe enough information is available

I believe so.

I believe that enough opportunities are available

I believe that graduate student should attend at least one international conference prior to graduation and that currently this is not happening.

I believe that there are sufficient opportunities.

I believe that young US-based physicists currently get sufficient physics-related opportunities to travel abroad.

I believe that young US-based physicists have adequate physics-related opportunities to travel abroad.

I believe that young US-based physicists have many excellent opportunities to work abroad, and I believe that this is good for the US program. I would support a modest increase in the number of "work abroad" opportunities.

I believe the bigger problems are - getting young physicists into the country and getting US-based physicists who are not US citizens BACK into the country after a trip.

I believe there are adequate opportunities for good young physicists

I believe there are more opportunities than ever.

I believe there is ample opportunity through funding of their mentors or themselves.

I believe they are getting enough opportunities to travel abroad

I believe they are, but really have not data to support. I believe it is extremely important for US physicists (especially young) to get out and see the world. It is amazing to hear the various perspectives, but we (Americans) tend to be seen as arrogant getting our young scientists out around the world may help this image. Additionally, there is a lot of great research going on outside this country that needs to be seen!

I can only speak to my own subfield, particle physics -- I'd say that, in terms of the development of their work and careers, young particle physicists probably get adequate opportunity to travel abroad.

I cannot comment on the situation in general, especially since my area of work has always been international in scope, and the young people coming into our area generally have opportunities for foreign travel.

I cannot speak to this question firsthand. Travel in connection with one's work is essential for all groups of physicists, but whether to travel abroad or not depends upon one's field and interests.

In general, however, I do not recall hearing much about such opportunities, except those that are extremely competitive and result therefore in few awards being given.

I can't assess the current situation. I think it is important, although not essential, to have foreign travel for young physicists. It allows them to compare their circumstances in the US with those of scientists abroad and thus to better judge how to plan their career.

I can't really say regarding universities, etc. However, I do try to see that the post-docs in my group get to travel to at least one international conference each year.

I do not consider that this is important as an objective by itself, so cannot define "enough" meaningfully.

I do not have any statistics on the present exposure of US based physicists to travel abroad. From my experience with my students and postdocs participating in at least one major conference abroad exposes the budding physicist to a world wide effort and scientists from around the world. This has major impact on their perception of physics as a world wide activity.

I do not know the extent of travel abroad for young physicists. I think it is very important for everyone to have exposure to and understand other cultures.

I do not know the opportunities available, but I do know, we need as many as possible.

I do not know. Travel to labs outside the U.S. is probably very important since physics is often done in very different styles, at least in experiment, in other countries.

I do not see travel as an essential aspect of a young physicist's development.

I do not think that young physicists get enough opportunity to travel abroad. Attendance at foreign conferences, workshops and schools is critical. Short-term research assignments with foreign colleagues is very important, particularly for industrial physicists.

I do not think there are enough physics-related opportunities to travel abroad. Especially for students, opportunities to meet with distant colleagues might encourage unique collaborations, and perhaps also increased job opportunities.

I do not think there is enough opportunities for young US physicists to travel abroad. If there is, this should be advertised through emails or APS website.

I do not think young US-based physicists are currently getting enough physics-related opportunities to travel abroad. One possibility would be to develop an exchange program for physicists to trade places with other physicists in a different country and/or continent. Another possibility would be to have a "research fellowship" similar to the Fullbright fellowships.

I do think that young US-based physicists get opportunities to travel abroad, more so than when I was a grad student.

I do.

I do't believe that young US-based physicists are currently getting enough physics-related opportunities to travel abroad. In addition to the usual attendance at professional meetings, short-term exchange programs with foreign universities/laboratories in fields of common interest would allow lasting professional contacts to be established.

I don't believe there is a need for the APS to support young physicists to travel abroad.

I don't have enough data on which to base a valid comment. However, as a general rule, young, US-based physicists should have at least one "conference-type" physics-related opportunity to travel every two years. An opportunity to do research as a Visitor for a year or more is much more desirable.

I don't have enough information to comment on whether or not they are getting enough such opportunities. I do believe it is extremely important, especially now that other countries are catching up to the US many areas of fundamental research. At a minimum, young US physicists should have the opportunity to attend and present at foreign conferences at least once every two years, preferably more often.

I don't know enough young physicists to be able to answer this question well. Knowing that university funds are usually tight, I assume that a young physicist with desire to study or work abroad will find a way.

I don't know how important this. Travel to any meetings, domestic or international, should be a goal.

I don't know if they are getting "enough" travel or not, but I do think experience abroad is important and should be encouraged. International collaboration in the scientific fields is one way science can help make the world smaller and eliminate communication barriers.

I don't know much about travel abroad for young physicists.

I don't know the numbers involved, but do think that travel opportunities are very important.

I don't know the specifics but I am of the opinion that all US citizens would benefit from travel abroad.

I don't know what is enough -- I think the opportunities are increasing all the time.

I don't know what opportunities currently exist for young physicists, but I think it is very helpful for them to spend some time working abroad to learn about other cultures and to develop relationships with foreign physicists.

I don't know, but I think international collaboration is important.

I don't know, but it is important.

I don't know. This must be different according to subfield. In my area (magnetic fusion) international collaboration is essential. This must be true in high energy physics also.

I don't see that many US students in the physics classes in my university. All I see if foreign students.

I don't think it is critical for young US-based physicists to get opportunities to travel abroad. It would of course be a nice thing to have, but I don't think it is essential.

i don't think such experience is critical for young US physicists. they can see real physics, and meet foreign physicists, at their home institutions and at US meetings. it is more important for their 3rd world counterparts.

I don't think there is a sense among physicists that travel abroad is important for their education as a physicist since the US is a major research country. There is not a perceived need to go abroad to gain experiences not possible in the US.

I don't think there is enough travel abroad for US physicists of any age. Mostly Asian and European physicists come to the US - this is not good for development of mutual understanding.

I don't think this is amongst the big issues for young physicists. (Think jobs, not travel).

I expect they have ample opportunity if they have the qualifications.

In experimental particle physics = YES. With reduction of US accelerator facilities, youngsters are being push to CERN or KEK or DESY. Let's continue to support US facilities to prevent this brain-drain!

I feel that international experience for the vast majority of U.S. citizens, regardless of their field of work or study, is lacking.

I feel that one or two conferences abroad may be enough for most students. If those meetings create collaborations with international scientists, so much the better. I would not feel it is a great use of funds to make very many international trips, as it is rather expensive and many conferences in the U.S. are all most students should need.

I feel that the extreme pressure on grants in the US is forcing PI's to use funds carefully. This has an impact on travel for students and post-docs. I feel that this is a serious situation preventing them from having valuable interactions with physicists from other countries

I find that it is becoming more routine to travel abroad, as the major meetings are increasingly taking place outside of the US (at least in my fields).

I found it very helpful to my career development to have the opportunity to spend sabbaticals abroad to build an international network of colleagues and initiate collaborations. I believe such experiences would be beneficial to most young physicists.

I had two opportunities to travel abroad during graduate school. While more is generally better, I think that cost and environmental factors constrain too much international travel. It is very important that some international travel is possible, and then the most important thing is to optimize the connections that are made: i.e. the workshop that I attended was much more useful

than the large meeting because I made some connections that have continued rather than just hearing people talk which I could have done online. I also think that making physics conferences available for online access is a very useful pattern for the future. The ICTP in Santa Barbara has done this effectively.

I have M.S. physics. I work in applied industry, don't get chance to get funded travel abroad. For others, I don't know. I think it is important, however. If could visit foreign institutes on personal travel, made available by APS, I might do it.

I have a strong feeling that our young physicists should be open to what others are doing. However, the science that is developed in the USA, should remain in the USA, regardless of the temptation to divulge the direction of 'our' scientific exploration to others (nations). I believe that the young bucks should spend time with the few pioneers that are left in some of the National Labs and working retirement.

I have no idea on the opportunities that exist. In my personal opinion it is very important

I have no idea. This would not have been important for my own training in physics, but I can certainly imagine areas where it might make a difference. I suspect that foreign travel would not be helpful for the majority of US physics students, but I have no quantitative idea of the minority who might benefit.

I have no knowledge or experience in this matter, at least currently. I knew some "fresh PhD's" 20 years ago who worked abroad (Soviet Union, Europe), but do not know how prevalent it is today.

I have no strong feelings about this. I have been using video-chat software (the iChat system on the Mac) to interact with colleagues in Australia and the UK. This is an excellent system. On some level, the growing use of such systems might well reduce the need (as opposed to the desire) for foreign travel, although it can't eliminate it completely.

I have not done as much overseas travel recently for family reasons, but when I was younger it was a very important part of my development as a scientist. I think young US scientists do not get enough opportunities to attend international conferences, collaborate, and interact with colleagues overseas.

I have not really thought about this question. Certainly my own opportunities were wholly inadequate.

I have to admit that my own research is well supported, and so I am happy to sponsor my younger collaborators' visits abroad. More generally, I think this is a vital part of growing up as a scientist (and, more generally, a citizen), so I am in favor of increasing these opportunities to the greatest extent possible.

I haven't thought about this question, but I think there are plenty of opportunities.

I honestly do not know - I have not thought about this very much.

I know of several grad students who have postdoc-ed overseas, and also several foreign grad students who have postdoc-ed here.

I know very little about how many international opportunities exist or how many people utilize them. Therefore, I have no opinion on this.

I observe foreign travel opportunities as increasingly limited by budget pressures. From my own experience, the opportunity to work in a foreign laboratory for a period of months was very valuable.

I only know one young PhD data point. In that case he's had LOADS of trips. I have had a lot of experience with young college students with other majors. Many have traveled abroad, both for pleasure and for study. Based on this sample, I'd say they have plenty of travel opportunities.

In our department they do but I don't know if this is true in smaller places

I personally do not have any funds for travel abroad. I teach at a small university and they do not have a large travel budget. It has been hard for a single researcher at a small university to acquire NSF research grants that would allow me to do research and be able to travel. As such, I think a grant program for people in situations like mine could and would really benefit from a travel grant program. I am guessing that a travel grant would have to be on the order of \$3000 to \$5000 depending on registration costs, when, where and for how long.

I personally feel that every talented graduate student (upper 75%) should attend at least one international conference during their graduate career...to provide an awareness of the international nature of physics and to gain some familiarity of other researchers in the field. Travel budgets are so constrained that I feel that this is getting to be impossible.

I personally have found that traveling abroad and working abroad is extremely valuable and I recommend it to young US-based physicists. I recognize that it is not always easy to arrange (I was not married at the time, for example).

I really can't comment here. There are so many international meetings I assume that anyone can go wherever they want if they have the resources.

I really do not know. For me, it is a funding issue.

I really don't know on what scale young US physicists are traveling abroad, so it would be hard for me to say if is 'enough'. However, I traveled overseas several times as a graduate student and postdoc and had the opportunity to spend extended stays (2 weeks or more) abroad. I continue to collaborate with colleagues I met during those trips and I think that a similar experience would be extremely beneficial for all young researchers.

I really don't know. In my agency there are travel opportunities.

I take the US relationship to international fusion research (ITER) as an example of very poor US participation in such work, whether the physicists are young or old.

I teach at the community college and do not know enough to comment on this.

I think funding physic-based anything is insufficient for our nation to maintain the US standard of living.

I think it depends on the industry. From my experience, "no", and cost is the limiting factor in travel.

I think it is important for US-based physicists to travel abroad. However, I do not know how this need compares to the opportunities available.

I think it is important for younger physicists to visit developing countries to meet scientists and collaborate. In addition, visits to countries that are not on the "nice" list of the US government ("axis of evil", "terrorist sponsors", etc.) is very helpful for everyone to see beyond the propaganda and engage real human beings on the other side.

I think it is important to have these opportunities, but I don't know whether there are enough of them or not.

I think it would be good to have more opportunities and encouragement for college undergraduates to spend summers overseas. The younger the better primarily for language skills. Once students have become comfortable in another country, they will be more likely to develop lasting professional relationships. I spent six months in France as a sophomore/junior, and that formed the bases for later collaborations and my 1995 sabbatical.

I think it's about right the way it is.

I think its adequate.

I think most graduate students get a chance to travel abroad, but it could be a bit better. Funding the travel is the issue.

I think one international trip for a grad student is good enough. After that, it should be on an as-needed basis.

I think opportunities for travel abroad vary widely depending on the circumstances of each young US-based physicist, primarily the financial situation of their employing institution, and the "connectedness" of their mentor/professor/boss. It would be nice to create some connections with the larger physics world for people who are in somewhat "backwater" places or who are working with physicists who won't have specific suggestions for international experiences. Maybe something like a travel grant for a couple of grad students from each state to present their work at a conference of their choice abroad?

I think physicists travel abroad because that is where almost all the major facilities are. If we had more here, we would not have to travel so much.

I think provision of some financial assistance is a good program.

I think so.

I think that both young and also old but active physicists, without external funding due to their age and/or university circumstances (such as a small or non-Ph.D. department) would benefit from travel opportunities. I think that the field of physics would also benefit.

I think that if they have funding they can go, but it is expensive and that may limit some trips

I think that needs to be part of their research and education and not part of the APS.

I think that particularly in my field (particle physics) overseas research experience is by necessity going to become critically important. Especially with the shutdown of US accelerator-based particle physics programs at SLAC and Fermilab, real research work in this field will now continue primarily in Europe and Asia. Even though foreign work is always more costly (especially now with the increasing fall of the dollar vs the euro and yen) and time-consuming than US-based research (for US researchers of course), it is now becoming a necessity rather than a choice. It seems as if the number of research choices are decreasing rather than increasing (or even remaining level)--and that is sad.

I think that the amount of international travels depends a lot of the institution and sub-discipline which are tied to the level of funding, funding categories and the nature of employment. For example, physicists in small teaching colleges may not be as active in research and do not travel as much.

I think that the answer is no. Most of the people I know who go abroad frequently are older and more established. The exception concerns younger astronomers who go to observe.

I think that the opportunities are for the most part there, but that they are under utilized. I found my years in Japan to be extremely beneficial. I don't think people in general know what an eye-opening experience this can be.

I think that the opportunities are working.

I think that there are lots of opportunities to travel abroad!

I think that there are opportunities. enough?? I am not an expert on this subject.

I think that young US-based physicists don't get much chance to travel abroad because of travel budget restrictions combined with the fact that more senior physicists tend to get the invitations to give the talks at international conferences. One way to help this would be to provide financial support to send more students to summer schools abroad rather than only sending them to schools that are domestic.

I think the main value of such experiences would be to develop contacts with researchers in similar areas. I am really not sure how widespread such experiences are.

I think the opportunities are sufficient in my field, outside of my field (space plasma physics) I do not know.

I think the overall level of travel support is too restrictive and the senior people use all the funds.

I think the US graduate school experience is 'international' enough with all the foreign students coming here. Physics-related opportunities abroad are best financed by the hosting countries/organizations as they need talent. I am not sure we need to 'create' opportunities for young US-based physicists to travel. Money is probably better spent elsewhere. International travel opportunities tend to 'happen' for those who seek them.

I think the US is increasingly isolated from the rest of the world, a politically driven development. Unfortunately I think this impedes travel in both directions--to and from the US.

I think there are adequate opportunities for US-paid physicists to work abroad.

I think there are an ample opportunity for young physicists to travel abroad these days.

I think there are enough

I think there are lots of physics-related opportunities to travel in some areas of physics, such as high energy that employs many physicists and has experiments in other countries. I can not speak for other fields. Actually, I feel that there should be more opportunities for high energy physicists to be able to work on experiments within the US. I find it very disappointing that currently all near future planned experiments are outside the US (LHC, Daya Bay,)

I think there are more opportunities than are being utilized, at least for working abroad as a postdoc.

I think there are plenty of opportunities for travel abroad -- at least in the subdiscipline of astrophysics.

I think there are several opportunities for foreign travel at present. More would be nice, but not essential

I think there are sufficient opportunities, at least for those working in large well-funded experimental programs with which I am familiar.

I think there are sufficient physics-related opportunities to travel abroad.

I think there is a reasonable amount of opportunity for foreign travel.

I think there should definitely be APS sponsored travel awards for US based physicists and specifically for US Citizens preferably.

I think they are

I think they are getting enough opportunity. I don't think enough take advantage of the ability to go abroad.

I think they are getting enough support for travel

I think they are getting enough travel abroad.

I think they are getting enough travel experience

I think they are not. Attendance at conferences abroad would be important/useful.

I think they are.

I think they are.

I think they get enough opportunities to travel abroad.

I think this kind of activity is very important but also expensive. I would reserve it for few, carefully selected people but would give them a chance to spend a reasonably significant amount of time interacting with physicists abroad.

I think those who want to find an opportunity abroad can do so these days. Maybe it would be good for both parties concerned to have more programs for one year physics highschool or undergraduate teaching in developing countries.

I think travel abroad is good for everybody. I'm not sure I think the welfare of our country (or of science) is more dependent on physicists going abroad than it is on every other segment of the population going abroad. I think the same money spent on education abroad for high school and undergraduate college students would be more effective.

I think US based young physicists have sufficient physics-related opportunities to travel abroad.

I think US-based physicists who have external grant money have plenty of opportunities to travel abroad.

I think young particle physicists have ample opportunities.

I think young physicists at major universities and research labs have ample opportunity to travel. I'm not so sure about others.

I think young physicists can travel abroad using their grants or those of their supervisors.

I think young US-base physicists are currently getting enough physics-related opportunities to travel abroad.

I try to be sure that the young people in my research group get these opportunities and believe we are doing well. I don't know about the US situation in general.

I would love an opportunities but it cost to much to travel. Help with travel to the U.S. meetings.

I would think that some short term (weeks) exchange programs between young physicists for both those in industry and academic positions would be very valuable professionally.

Ideally physicists as well as people in other scientific and engineering disciplines should have this opportunity. Unfortunately the actions of our government are adversely affecting this kind of broadening opportunity by increasing the hostility of the rest of the world towards US citizens.

If there is a unique facility abroad that is not duplicated in the U. S. and the student's research is primarily based on research conducted at this facility, the student should have the opportunity to travel there if possible.

If they use large facilities abroad, ISIS, ILL, ESRF, the opportunities are there.

If they want to go abroad, they can find support.

I'm a particle physicist, so my viewpoint is skewed: without international collaborators the field would collapse instantly.

I'm getting reacquainted with physics research after a hiatus of several years. It is useful for physicists to get exposure to a global perspective (and appreciation) on physics rather than a purely American perspective.

I'm not at a university and work as a chemist, so I'm not knowledgeable on this topic.

I'm not sure when I was young there were many opportunities. I think it was a great experience to work in Germany.

I'm not sure how many physics-related opportunities are available for young physicists to travel abroad. ANY travel experience is important.

I'm not sure I can make a general comment, but in my case I got a decent amount of international exposure in graduate school.

I'm not sure what opportunities are, or are not available, so I'm not really in a position to make a reasoned judgment.

I'm not working closely with young US-based physicists so I'm probably not the right person to ask - but I imagine that travel funds to send US-based physicists overseas are pretty tight. The travel grants would be appropriate for sending US-based physicists to developing countries, but not so appropriate for sending them to developed countries.

In a few years the leading physics research may be done abroad and it is important for young physicists to be encouraged to travel abroad for research collaborations.

In a field like particle physics where many of one's colleagues and collaborators are likely to return abroad, it is very natural and important to travel abroad. I would guess this is also true in other subfields.

In addition to research collaborations, I also do think APS should encourage teaching collaborations, especially to those employed at undergraduate colleges so that novel pedagogical methods could be shared and fine-tuned.

In astrophysics there are plenty of opportunities to travel abroad.

In astrophysics there are many meetings abroad and costs of meetings abroad are often not terribly much greater than meetings in the US.

In astrophysics, I assume most of my post-docs will go abroad at least once a year. At national laboratories, however, there are severe constraints on this travel. I think this will significantly hurt the science done at these laboratories in the long-term.

In experimental particle physics, students and postdocs seem to have enough opportunity to attend conferences abroad. With the LHC turning on, I expect the opportunities will increase, but I am concerned about the cost of maintaining students and postdocs at CERN given the weak dollar.

In general, I'm not sure whether they have enough opportunities. My personal circumstances were such that I had many chances, but I don't know how common this is. I found my experience extremely valuable, but that was partly because of the length and depth of my travels. If I had only traveled to simple conferences, I'm not sure if that would be the same.

In group, I send young scientists abroad on a regular basis. The issue centers in the need to go abroad. If that is where the collaborative or observational opportunities are located, generally a way can be found to send the scientists.

In HEP there is a large international effort in LHC and in General international collaborations give enough opportunities for people to travel and spend time at outside facilities.

In my agency this is not a problem. Not sure what the situation is in Universities or in private industry. My feeling is that private industry is mainly where there may be a problem in getting travel opportunities, either abroad or otherwise. Private industry in the US has a general disdain for true research anyway, and tend to expect either academia or the government to do all research related activity for them. Any funds they put into research seem to be either window dressing or narrowly focused on areas where they see an opportunity for a quick buck. For young physicists, best experience would be to work in foreign research labs for period of 3 to 12 months. Next best is to be able to attend international symposia.

In my area of research there is adequate opportunity.

In my current situation, I think APS should spend more time worrying about unemployed US physicists in the US - especially women and minorities. I feel like I live in a US-based third world situation in which I can't use any of my training or expertise to earn a living in this country.

In my day such travel was unheard of but today working in a foreign country and language should be required for higher degrees.

In my experience, the opportunities are appropriate.

In my experience, this seems to be working well. Young physicists get the chance to go to international meetings to discuss their results. We still have re-entry problems for people from outside the US returning following such travel.

In my field (plasma physics and fusion energy) there are many physics-related opportunities to travel abroad, for young and established scientists alike. Likewise, there are many opportunities for foreign scientists to travel to the USA. I think this is the way it should be.

In my field I think there are sufficient opportunities to travel to conferences and for postdoc experience

In my field it mostly comes down to money: is there enough to fund students, post-docs, profs, etc., to go abroad. There isn't enough money...

In my field there are many opportunities - maybe even too many.

In my field they go out to do experiments at non-US facilities and usually have non-US colleagues come here to work at local facilities. Conferences are international so that does not concern me but a program of 1-2 year fellowships to allow young people to work abroad as part of their 'formation' would be useful.

In my field, elementary particles, yes they are getting enough.

In my field, it seems OK.

In my field, opportunities are adequate.

In my field, plasma physics, young US-based physicists have many opportunities to travel and do research abroad. I have a postdoc who has been to Germany twice and China once during his two years since completing his PhD. His work with foreign scientists is very important for his research and for the scientists he works with in other countries.

In my field, probably yes.

In my field, there are sufficient opportunities. I can't really comment about other fields of physics.

In my field, travel to international conferences and schools is common, and travel for international collaboration is not rare. So I think the amount of this kind of travel is about right.

In my industry (Optical communications), young US-based physicists have opportunities to visit and work with their non US-based colleagues, and attend conferences outside the US. But very few have the opportunity to live and work outside the US for an extended period, say more than a few months.

In my particular field (Gravitational Wave Detection - LIGO) there young US based physicists are currently getting the opportunities to travel abroad due to the international nature of this

branch of physics and strong international collaborations that exist. I believe the same can be said of HEP but other areas I am less sure of.

In my small field, opportunities abound.

In my vicinity, young physicists have enough opportunities to attend meetings and conferences abroad. Limitations are usually financial.

In observational astronomy, international travel and collaboration is critical, and most active students and post-docs do a lot of it.

In particle physics they unfortunately must travel abroad a lot, as the forefront accelerator is at CERN.

in some cases yes, in others no. they should attend at least 1 meeting during graduate work, and once every 2 years thereafter

International conference attendance would do much to expand the horizons of young physicists, but is often prohibitively expensive for advisors. An APS travel grant program to send accomplished young physicists to topical international conferences would be money well spent.

International conference funds would be helpful for graduate students and post-docs.

International conference travel for early career US trained scientists is more important now than in the past. They need to see how competitive the world has become, and how US leadership is eroding in science.

international cooperation is very important to encourage

International experience played a fundamental role in my formation as a physicist. This happened by accident. I would like to see some kind of central clearinghouse that young physicists (graduate students, postdocs) could turn to in order to learn about opportunities abroad.

International opportunities are important. For particle physics, my impression is that there are sufficient opportunities.

International scientific exchanges are quite important. One big international meeting to get flavor of physics overview in area of specialization. One workshop for more applicable scientific interactions. This fosters international collaborations.

International travel funds are very difficult to obtain.

International travel is expensive. With limited funding, I would prefer to support travel to U.S. meetings. I don't feel that this is a significant disadvantage to me or my students.

International travel is high hurdle for a researcher to provide for his postdocs though those this group could probably derive the most benefit from it. Early career scientists who are reasonably funded can probably travel easily enough.

International travel is vital, not only for developing useful physics contacts, but also for observing how physics works in different cultures. The opportunity for travel exists now, and it is not uncommon, but it is discouraged by excessive funding agency requirements.

International travel opportunities for students were quite good in the 1990s but, with increasing DOE restrictions on travel, have all but evaporated.

Int'l meetings and exchanges are expensive and normally carried out by senior scientists, with relatively limited opportunities for young physicists. A broad based program for international travel grants to encourage submission and attendance by young physicists at major international meeting or short-term research abroad would be very useful.

It all depends on their work environment. Researchers in Govt. laboratories or at universities with industrial/government grants or contracts generally have opportunities to attend international conferences and they are encouraged to participate. However, long-term stays abroad are not so easy to obtain - especially for young folks who have not yet established themselves in their fields. I would concentrate on research opportunities abroad for students. Relationships are formed and a pattern of international cooperation is established that lasts a lifetime.

It appears relatively common to me.

It could be beneficial to have international internships (if there are not already) at places such as CERN/NASA/NRL. Since big science projects will most likely require international efforts in the future the increased contact between young US based scientists and their foreign colleagues is essential for making these projects and future ones a reality.

It depends strongly on field. Particle physics has many opportunities, other fields, far less so.

It has been my experience that US based physicist travel extensively, and that with a significant number being foreign-born helps to evangelize physics to the developing world.

It is actually far easier for many young physicists to travel abroad than for those of us at government labs where foreign travel is painful, strongly discouraged, and closely scrutinized by upper management.

It is almost certain with the typical budget constraints that exist at most research institutions, academic or not, that young physicists would not get much opportunity for foreign travel. Whether or not to increase these opportunities depends on the severity of the budget crisis and consideration of what would be lost if funding is diverted to travel.

It is common in nuclear physics to travel abroad to meetings or to collaborate either with theory groups or experimentalists.

It is hard to tell without more information. Young physicists, especially now, should have significant contact.

It is important for expt particle physics students to spend 1-2 years working directly at the experiment, but with the focus shifted to CERN, the cost of housing in the Geneva area makes this difficult. CERN and the US are not doing enough to provide low-cost and obtainable housing near CERN.

It is important for US physicists to travel abroad and meet other scientists to learn about their culture, their problems in performing scientific work and their successes in scientific research.

It is important that young scientists be connected to the larger international community. I don't believe there are enough opportunities widely known for this kind of activity, especially for those not connected through their research to an international collaboration.

It is important to develop ties and collaborations with the international community.

It is remarkable how many opportunities there are for young physicists to engage with counterparts around the world. It is a great strength of our system.

It is very field dependent. In some areas, nuclear and particle physics there is substantial international contacts. It is also group dependent, some groups do better than others. This is an important component of their education.

It isn't clear to me that foreign travel is important to US-based physicists. Travel to conferences abroad always seemed like a luxury to me.

It might be good to offer special grants for graduate or undergraduate students to spend summers doing research at international laboratories and/or to attend international conferences. As far as I know, conference travel grants for students are only to attend APS (within the US) conferences. I would like to see more opportunities to expose undergraduate students in particular to a broader range of research opportunities. For example, the NEUTRINO conferences (last year in Sante Fe, but previously in Paris e.g.) are quite expensive but would be good for encouraging young physicists to continue in research.

It seems (to me) most physicists perceive no need to travel abroad except to attend association meetings.

It seems that there are more opportunities for foreign physicists to travel to the US for research, but less so the other way around. I think the addition travel experience is important for young physicists.

It seems that there are plenty of conferences abroad, and young US-based physicists go to them, at least in Nuclear/Particle.

It seems that when it is connected to their work, opportunities exist.

It seems to be too tied to particular areas of research to give a general answer.

It would be better if our students/postdocs could work outside the US before they become faculty members or become established in permanent positions in the various labs. DoD agencies do provide money for such activity for their own staff, perhaps an overseas NRC postdoc program could be established (not likely given the current atmosphere in the US).

It would be good for U.S. grad students to have an international experience, if only a week abroad. Most Americans don't travel abroad very much.

It would be good for young US based physicists to travel to other advanced physics programs such as in Europe, Canada, and even South America and Japan. I would NOT support programs for young US physics to go to under developed regions where people are trying to extract our technology for fee such as China.

It would be good if all students could attend one international conference in the last year or two before Ph D. Some seem to get none, others more than one. level it out.

It would be good to encourage mobility among the younger generation, so as to lay the seed for future international collaborations.

It would be nice if they could go participate in summer schools at places such as CERN *without* having to go to colleges such as Yale, MIT, etc. that seem to over-populate such programs. I teach at a smaller, non-research college and just can't fight through the hoops that are present for the few such programs that exist. I know there are such programs for graduate students, but undergrads could also benefit.

It would be valuable for new professionals in research to be exposed to the broader community

It's difficult for me to comment on this, since I'm not all that familiar with what opportunities exist for young US-based physicists to travel abroad. But I'm also not aware of an enormous number of benefits such physicists would derive from traveling abroad, unless they are doing researches that must, by nature, be done in other parts of the world.

It's just a matter of money. Grant agencies should know that this need exists.

It's more important to send Americans abroad than it is to bring foreign scientists to this country. It would be good to provide a scholarship program to cover American physicists who wish to work and study abroad.

It's nice but it will come as they earn a reputation, no need to rush into it.

I've never traveled abroad so I don't know anything about it.

I've usually had sufficient funding for foreign conferences when necessary and appropriate. Cannot comment on other physicist's experience.

Junior year abroad, foreign language study returned to a PhD requirement, if possible an undergraduate one, government to provide stipends for AMERICAN students to go to

conferences, under aegis of US competitiveness and inventions committees lately put together in DC.

Language study, particularly Mandarin

Many are not getting enough opportunities to travel, although for some their research involves a big international collaboration. Funding specifically to support student travel for research collaboration would help.

many particle physics students have ample international travel, with the LHC coming online. Other young physicist probably rarely experience international collaboration. Young physicists should experience international collaboration in meaningful ways -- having interactions lasting one or more months where they solve research problems in an international team. this has the potential to clearly illustrate how diversity increases a team's problem solving effectiveness.

money for conferences is in short supply because NSF and DOE grants are very sparse these days.

More competitive awards for young physicists to travel abroad to international conferences.

More conferences abroad would help establish contacts at foreign laboratories and encourage collaborations. Additional funds for experiments abroad would also increase collaborative efforts.

more conferences and sabbatical programs to encourage young physicists to gain international experience.

More encouragement of international cooperative grants. NSF pretends to support international activities, but other is really no money. More travel support for young Physicist regardless of visa status.

More international postdocs. Some previously important programs, such as the NATO postdocs, no longer exist, limiting exchange of young, vital, researchers.

More opportunities to attend summer schools would be helpful.

More short visits would help communication and, hopefully, reduce world tensions.

More support from funding agencies

More travel would be good.

More undergraduate exchanges, such as junior year or semester abroad

Most of the ones I know are. US support of conferences abroad and research exchange can be very helpful. I actually helped organize a US-India Conference which led to several collaborations with Indian scientists, but those funds no longer seem to be available.

Most of the young physicists I know travel abroad frequently.

Most physicists I know do have enough opportunities to travel abroad.

Most US-based physicists have sufficient opportunities for pursuing scientific work abroad.

Much new scientific progress and product are being developed by students in universities. There should be no restriction on their travel to any safe source of information or supply.

Much of the innovative work in my field has begun to move to Europe. With the decreased funding for physics, especially from NASA, travel opportunities for young physicists are decreasing. It is imperative that these young physics have funds that allow them to go to foreign meetings and interact with foreign colleagues.

My European postdocs were formative. I think programs to encourage intellectual exchange at the postdoctoral and workshop (1-6 weeks) level would be tremendous in helping young physicists network. This is particularly true in the less applied fields such as particle and astro-physics which have become very international.

My experience, in accelerator physics, is that there are enough opportunities.

My general impression is that foreign travel in connection with professional responsibilities is MUCH easier now than it was when I was a young physicist (late '70's and early 80's).

My German experience was invaluable in developing who I am personally and professionally. So I strongly advocate these opportunities. But I cannot say if the opportunities for present young physicists are sufficient.

My guess is that there are good opportunities for students at major universities, less good for small institutions. Outside of universities, I do not know.

My impression is that there are many opportunities but that the types of experiences are somewhat limited.

My impression is that young physicists are not that anxious to travel abroad so my guess is that there are enough opportunities.

My only experience has been attending international conferences, which strongly depends on whether the young physicist (or his/her advisor) has funds. I am not familiar with other opportunities, or the lack thereof.

my perception of government labs and academia is that opportunities are adequate

My personal observation suggests young US-based physicists are currently getting enough physics-related opportunities to travel abroad.

My sense is that they do have numerous opportunities, at least those that are in strong programs.

Neither young nor old plasma physicists have much opportunity to travel abroad, either for conferences or for short-term collaborative work.

Neither young nor older US-physicists are getting enough physics-related opportunities to travel abroad. I work in a DOE National Laboratory and the approval process here to attend a conference abroad is very difficult and travelers are frequently not even informed the final approval until a few days before they travel. I know of many colleagues who have been denied travel to a conference even when they were the first author on a oral paper and had been identified as a workshop lead coordinator. I think that it is very important for young physicists to get an opportunity, early in their career, to interact with their colleagues abroad and to establish professional working relationships. Conferences are the starting point. Co-operative projects should grow from that.

Never considered it myself since the opportunities in the USA were so rich and available to me.

No -- additional interaction with international colleagues (via conferences and/or workshops) should be encouraged and supported with awards, etc.

No it would be helpful to have some support for attending international conferences.

No there have never been enough opportunities for international collaboration and travel. NSF, however, is starting a number of programs promoting international travel for students and early-career scientists. Active international collaborations can only benefit research in all involved nations.

No - there should be travel grants to support both short and extended visits

No basis for opinion

No comments - not active

No direct knowledge.

No personal knowledge base on which to answer this question.

no, reduce beauracracy in granting agencies

No strong feeling. But my own experience at the Max Plank Institute in Germany was valuable in seeing how science can be done in a different culture.

No they are not. Very important: Post docs/employment abroad Important: International conferences

No We need more information about existing supports and programs for such possibilities. Another major issue limiting the travel abroad is the visa problem for those physicists from countries such as India and China. One of my colleague got rejected when applying visa to go back to US due to the ridiculous reason that his research area is too sensitive for national safety. Many of my colleagues around me refuse to travel abroad before they get green cards. This is also the reason I never try to do that during my past 7 years. I am very sad about this. This is one example how politics becomes priority over science.

NO! In many cases scientific visits have produced diplomatic advances. The younger the individuals when they visit, the greater the likelihood of benefit to them and to the United States.

No, budget constraints often limit international travel.

No, I do not think US-based young physicists get enough support or encouragement to travel abroad. The DOE/NP office in my experience is not enthusiastic about participation of US physicists in programs abroad. I believe 1-2 foreign assignments for young physicists in foreign research activities is a valuable experience.

No, not enough physics-related opportunities. Support tends to go to senior researchers (which is appropriate given the source and reason for most international travel funding). Young physicists would benefit most from opportunities to do medium-term (1-2 month) stays at labs and institutions abroad, but also benefit significantly from support for conference attendance.

No, not enough. And of course, this overriding issue is funding.

No, of course they are not. The job pressures discourage young physics from getting too remote from us-market. The cost of living abroad has risen abroad. Worse couples have difficulties find position in same area long-term separation is stressful on relationships. So as universities have worked hard to handle "spousal" hire, international travel opportunities have to work together to add "couples."

No, our desire to have our young colleagues give talks most anywhere is usually outweighed by conference organizers desire to have big names.

No, the cost of international travel precludes many grad students from attending. I think attending a few international conferences abroad in the early stages of a career is very important. Not as important for grad students but still useful.

No, there is not enough opportunity for such travel for US-based physicists. I believe that young scientists in particular would benefit from exposure to foreign science institutes, research, scientists, culture, etc. This would help to form life-long bonds of friendship and collaboration that could turn into vital international links between the US and other countries.

NO, we do not get enough travel money on our grant to go abroad....

No. In my case I was 35 or so before I traveled abroad. The experience and contacts would have been useful earlier in my career.

No. There should be a program to offer US students and recent US graduates free or low cost travel and lodging to foreign conferences.

No. Travel to conferences.

No. At the least, provide travel grants to international conferences.

No. Especially important to physicists in industry to spend time in another company lab for a 3 to 6 month period.

No. Government help would be appreciated

No. It is particularly important to provide opportunities for young physicists located at regional institutions. These schools usually do not have the same resources to support international collaborations or international travel.

No. More APS funded summer school types of events without strict selection criteria. A lottery perhaps. A summer school, in the model of Les Houches for example, is a superb way for young physicists (and would be physicists) to interact with the world physics community at large. APS should move in this direction.

No. more financial support, reducing barriers for approval process, helping non-US citizens getting VISA abroad

No. More grant money funded by industry should be made available. APS should get aggressive with companies like Intel and Applied Materials that have considerable international presence and employees.

No. Opportunities for young physicists to present papers at major international conferences.

No. Support to attend conferences and workshops, most of which are held overseas, would be a major improvement on the situation as it is now.

No. The Department of Energy has restricted foreign travel, due to budgetary problems. Foreign meetings are essential to all physicists who are actively engaged in research.

No. They are not. About 1/2 of my career has been devoted to promoting travel of US physicists to Japan and Europe. These opportunities are supported by granting agencies (i.e. DoE), but the real attraction comes from the availability of outstanding equipment in foreign labs. Some funding also comes from foreign funding agencies, such as MEXT (Japan) and Helmholtz (Germany). It is extremely important for young physicists in my field to have the opportunity to use facilities in these countries because of the lack of investment and aggressive use of infrastructure/facilities here at home.

No. Topical conferences and summer/winter workshops.

No. Travel to and participation in more of the Topical Conferences and Workshops being organized annually and bi-annually by many Senior APS Members and Fellows in their fields (mine is Solid State Electronics/Optoelectronics) in various countries abroad, including Europe, and Pacific Rim countries. Also spending more time as Post Doctoral Fellows in Japanese and Chinese Gov't and Industrial Laboratories. Many opportunities are available, particularly in Japan, but the pay is minimal.

not a physicist. Most of the grad students here are engineers. In 25 years, I don't think we ever sent a grad student to a foreign conference or internship. We generally only send one person

once a year abroad to a conference. But we have hosted many foreign students, post doc, and researchers.

Not enough

Not enough opportunities. Reason: tight travel budget for researchers

Not enough opportunity. The best idea I have is to have federally funded postdocs that include a guarantee for one year abroad followed by a guaranteed postdoc job back in the U.S. The postdocs should go with the recipient, not given to faculty. That way, the recipients have their own money and would be very attractive to essentially any researcher in their area of specialization

Not enough travel abroad. At the least, provide more subsidized travel to conferences and workshops.

Not familiar enough to comment on this issue.

Not getting enough opportunities abroad.

Not important for US-based physicists since they have resources to do that on their own if they wish.

Not knowledgeable in that area.

not knowledgeable about this matter

Not only postdocs but also grad students should better supported to attend conferences, both in the US and abroad.

Not sure how important this is. Only great importance if US continues its slide in physical sciences.

Not sure whether there are "enough" but I think that increased availability of travel grants and possibly funds to support extended stays abroad would be good.

Not sure, but I think that it is very necessary.

Not sure, but it may not be a big deal.

Not sure, but perhaps more opportunities to travel to conferences and for collaborations.

One can always assume that additional work related travel for young physicists would be beneficial. How best to go about it is a harder question. Probably the most obvious response is the most likely to work--give them additional opportunities to travel to places where research is well established. There may, however, be mutual benefit to be derived from sending the occasional young physicist to a country where the possibility for research is quite limited.

Opportunities abound.

Opportunities are adequate.

Opportunities are available, but quite competitive. Exchanges with CERN are worthwhile, but soon the US will have no operating HEP accelerator facilities.

Opportunities are there if one wants them. The restriction that US agencies will only pay for transportation on US-flagged carriers is annoying but not too onerous.

Opportunities exist to travel to well-funded facilities, but not necessarily third world locations, where the benefits would be more significant.

Our group has two postdocs and four graduate students that travel abroad regularly, so my perspective is that there exist sufficient opportunities.

Our group only sends senior people abroad. I think it would be helpful to send the younger people more frequently.

Our travel is NSF-supported and the opportunities are sufficient.

Overseas travel for conferences is expensive and highly, if not overly, regulated by the Federal Government.

Partial travel support seems to be the most important

Participation in international conferences.

Particle physicists are likely to have abundant opportunities for travel abroad. In other areas I think this is somewhat less likely to happen. My own students and post docs have reasonable opportunities to attend conferences in Europe. In our field of medical physics, I believe this is quite important.

Perhaps not knowledgeable enough to comment...

Physicists employed by well funded laboratories have better access to travel abroad. This is much more difficult for smaller research programs that would also benefit from foreign contacts. It might be helpful if travel funds were available for these smaller research programs.

Physicists travel too much - at least High Energy Physicists do. All the information from conferences is online.

Physics can be done anywhere. Travel is unimportant. However, the cultural experience is important. Perhaps as important as music or art appreciation. But the APS does not fund music or art appreciation, so I am hesitant to support travel-related activities.

Physics programs in Latin America, Africa, and parts of Asia could benefit from closer contact with the U.S. community. In my experience, exchange of personnel in both directions are important for these programs.

Place articles in Physics Today with the names of several people to contact. The International Program at NSF is very difficult to reach and get help from.

Postdocs abroad for several months or several years would be of real value. However, employers (NIST in my case) are in a better position to help or hinder the process than is the APS

Probably

Probably enough

Probably getting enough opportunities.

Probably not enough travel abroad (guilty of that myself). Undergrads would benefit enormously from REU-type experiences abroad. Grad students would benefit from a summer or semester abroad. However, all of my grad students were from abroad to begin with, and needed that experience less than US students.

Probably not enough. More conferences, more summer research programs would be good.

Probably not, but cost is a significant factor for young people and so they must wait or find a job in a foreign land -- the old fashioned way

Probably not, foreign travel is considered as wasteful by many officials. This attitude must change.

Probably not, though as the economy improves it might be easier. With the low dollar, it is pretty expensive to visit many countries.

Probably not. A summer abroad program for PUI (primarily undergraduate institution) faculty would be useful.

Probably not. Opportunities to attend foreign conferences and conduct research in foreign labs are always growth experiences.

Probably not. There is much to learn from other cultures and their approach to physics.

Probably not. Travel to those countries having scientists with expertise, access to facilities and/or common interests in physics would be most useful to young physicists.

Probably not. Understanding the global world is becoming increasingly important.

Probably not. Visas, for some countries, have become more difficult and problematic. With a weak US Dollar, costs for foreign travel and collaborating abroad have become significantly higher than in the relatively recent past. Periodic international meetings are probably sufficient to "grease the skids" and further foster international scientific communication.

Probably not. A 3-month stay at a national lab would be great.

Probably not. Based on my experience in Vienna (one week, on physics in newly independent eastern Europe) I find they have almost no contact with American young scientists.

Probably OK

Probably yes at Federally Funded R&D Centers, but probably not at most privately funded research organizations. I believe APS and other societies should encourage corporate support of young US-based physicists, but exactly how, I am uncertain. Possibly through some recognition method to the young physicist AND their corporate organization, and/or more liberal federal rules for use of federal research funds permitting federal funded travel for young physicists.

Probably. Foreign meetings don't cost too much more than domestic ones.

Research in physics is becoming more international every year. Costs for big science projects, in particular, are being more widely shared. The opportunities for young physicists to travel abroad will increase as well. All this is very healthy. The only potential problem I see is that the funding agencies could reverse the current trend of supporting international science.

REU abroad

Scientific exchange programs are of great benefit, but seem to be increasingly difficult to support.

Short-term stays in labs in other countries would be very beneficial for young physicists.

Simplified visas for more exchanges would help. More invitations to/from the USA.

Since almost all young Physicists in the U. S. are current or recent foreign nationals, it does not seem essential that they are lacking non-U. S. experience or would benefit American Physics by touring outside the country. Most would choose to travel to their countries or continents of origin. American-born physicists would benefit from travel opportunities abroad.

Since I don't work in Physics, I am only guessing. But I guess that there are plenty of opportunities for those interested. There are probably enough opportunities here at home for those physicists not interested in going abroad. But any physicist worth his Ph.D. should be resourceful enough to determine for him or her self what overseas opportunities exist in their area, and should be able to MAKE their own opportunities.

Since I'm 20 years past my own degree and not working in Academia, I cannot respond in detail regarding current conditions. My degree research was in particle physics, and there was ample opportunity for US students to travel to CERN (and occasionally other labs) in that field. Opportunities for international travel in fields with less highly concentrated research facilities were certainly more rare at that time, and I would expect that trend to continue. For persons in all disciplines, experience in foreign laboratories is preferable to travel for the sole purpose of attending conferences.

Since my experiment is located outside the US, my students get enough opportunities to travel abroad. Don't know if this is true in general.

Small labs can certainly use all the financial assistance or benefit APS can give to increase scientific exchange. I pay for everything so far,,,

Some are some are not. Perhaps the physics societies in the different countries could encourage and help make known opportunities for young scientists to visit universities or research facilities for short stays.

Some international students/postdocs studying within the U.S. (e.g. Chinese nationals) are still hampered with Visa issues. This makes it difficult and somewhat risky to travel to conferences outside the U.S.

Some of them are and some of them aren't. Traveling abroad is a luxury, not an essential to the work of the physicist. After all, don't the laws of physics apply equally in all locations?

Something like the former NATO fellowships and sponsored meetings would be very valuable. The US definition of astronomy and astrophysics is getting very insular, and because of the distortions caused by NASA funding, research fields are diverging from the rest of the world (and not in a way which is likely to be good for us in the long term).

Spending at least two weeks in a non-US lab should be the rule rather than the exception.

Students from my research group get the opportunity to travel abroad sometime during their Ph.D work.

Sufficient, when funded to attend international conferences as part of a research program.

Summer schools, internships at gov and university labs.

Support to attend international conferences

The difficulty is not insufficient travel abroad, the difficulty is in insufficient opportunities for gainful employment using their hard-earned skills within the country after graduation.

The DOE has committed the U.S. to the LHC but is not really providing the university groups with enough funding to send our people there. The cost of living is quite high.

The funding in the US is reducing the ability for US-based physicist to travel abroad. I was at a meeting in Dresden this summer when that was clearly apparent (the M2S-HTSC meeting in July 2006).

the more the better

The more we can communicate with others abroad, the more we can learn from them, the more they can learn from us, and the better we can understand each others thoughts and opinions.

The most important physics-related opportunities are all centered on performing research. If a student's research is enhanced by a trip to take data or learn something from a lab anywhere in the world, then that trip is valuable. Travel abroad for travel's sake is not useful.

The NSF programs for post docs appear to be in great demand, but the funds are limited. I think it is extremely important for young scientists to work abroad for at least a year if possible.

The ones I know appear to travel abroad fairly regularly, perhaps mainly because they are mostly foreign born in the first place. It would probably be a good idea though for young scientists to obtain at least one foreign research experience much as many foreign scientists routinely come to the US for post-doctoral research.

The ones I know do get international experience.

The US is one of the few countries in the world that does not actively encourage, if not demand, international experience as part of a scientific career (through fellowships, exchange programs, etc). To the extent the US does have such programs, their primary focus is to allow foreign researchers access to US institutions.

The young physicists with whom I work seem to have ample opportunity to travel abroad.

The young US-based physicists that I know are getting enough opportunities to travel abroad. But it would be great to have a fund that they could apply for to go to International Conferences.

There appears to be a two-fold imbalance for travel for US physicists to travel abroad. The first is there appears to be more opportunities for young physicists to travel than older (or established - not the same), There is the presumption that once established or older, such opportunities are a given. We strive to ensure that young scientists are able to travel, which they should, but then drop the ball later. Those who have secure funding links, often through major national or international programs, travel much more frequently than those who don't. Second, US physicists are at an extreme disadvantage in competing with foreign scientists, especially Europeans, in that very frequent travel to scientific meetings is standard. Being current and actively interacting with other colleagues routinely provides opportunities for them, whereas US physicists are lagging behind and afforded less opportunities. (not sure what's next in the survey so please transfer this comment to a latter section if appropriate)

There are a number of special programs around if young physicists in academia are looking to travel overseas.

There are current ITAR and export control limitations that impede but do not stop foreign travel (particularly for FFRDC and US Govt employees). Travel funding is also a concern because of falling federal support for research. US-based physicists can profit much by overseas scientific contact because of the exposure to new techniques and results. US research focus is driven by federal funding (or lack thereof) which may be limiting the perspective of young (and older) physicists to what worthwhile problems exist. Foreign travel helps physicists escape from the "Republican war on science" in the US.

There are enough opportunities for the demand. But there ought to be more travel abroad, and more incentives for it. The problem is, at least at the student level, the candidates are not that interested.

There are enough opportunities in the post-doc areas.

There are enough opportunities.

There are enough physics-related opportunities to travel abroad. It does take initiative to find those opportunities.

There are most likely ample opportunities for scientists to travel institutions and universities in developed countries, but, I think there should be some grant available for scientists who wants to travel to developing countries and work.

There are multitudes of international conferences, so the opportunity for travel abroad is widely available. The issue is funding. International travel is generally more expensive than domestic travel, and young Ph.D. physicists are often very short on funding to sponsor international travel.

There are not enough opportunities for young physicists to spend quality time in foreign institutions. Fulbright programs, for instance, do not support all areas or all institutions. Just like postdoc experience is essential for physicists, spending time at foreign institutions can be a break-or-make opportunity for most US PhDs.

There are opportunities at postdoctoral level. PhD students have trouble getting funds to attend international schools and meetings.

There are quite a few international conferences and summer schools in my area of particle / string theory. I'd say generally students and postdocs get quite a few opportunities for international travel.

There are so many foreign graduate students in the US that probably all American born graduate students have weekly if not daily contact with foreign students. The programs mentioned are very important but mostly for those students who are studying in their home countries.

There is much -- perhaps too much -- international collaboration in my field. Specifically I am talking about ITER. What a colossal mistake.

there is a big barrier to taking postdocs outside of US, for the fear of losing contact with the ``grapevine"

There is a general trend to limit employer-sponsored travel to project-related field work and funding-related sponsor meetings. Beginning physicists and engineers usually do the former, rarely do the latter, and very rarely participate in more general conferences.

There is a great deal to learn from our overseas counterparts. I went to one conference in Italy as part of my NRC Postdoc, and it greatly expanded my view of how my research was done by others.

there is increasing need for travel abroad as our science becomes more integrated internationally. APS efforts to stimulate this exchange would be most welcome.

There is insufficient grant funding to send graduate students abroad for conferences.

There is insufficient national funding for young US based physicists to travel abroad or to take their sabbaticals abroad.

There is NEVER enough of this. More more more is always better better better.

There is really no need to travel outside the US.

There needs to be more international exchange between physicists. APS should facilitate travel to conferences, internships abroad, etc.

There seem to be fewer and fewer scientific opportunities these days. Fulbright seems to be going more in the direction of humanities and languages rather than the sciences. I believe that working and living in other countries is valuable both from a scientific as well as cultural point of view.

There seem to be lots of opportunities to go to meetings, but less to go and stay long enough to do some work. There is little support from the US side for this, as far as I am aware.

There seem to be, if anything, too many such opportunities.

There should be a research experience abroad program similar to the REU program for undergraduates in the U.S.

There should be grant funds available for young physicists to travel abroad to attend conferences in other countries.

There simply isn't enough money for science in the USA.

They are at Harvard. I also see a lot of young folks at European meetings. I do not know how special is my sample.

They are in my group.

They are probably not getting enough international opportunities. Conferences are a good entry point for such exposures.

They are sent to CERN, only problems are with visas.

They may be getting to go to conferences, but they don't tend to get trips of week or more duration to visit foreign laboratories and really work with collaborators.

They probably have enough opportunities.

This is a very broad question. In my area of specialization, viz. synchrotron radiation related research, there is ample opportunity to travel abroad.

This is culturally important, but probably not scientifically essential.

This is probably something that physicists in academic settings can answer better. I am not sure what opportunities exist for such travel, but certain fields are very strong outside the US, so travel is certainly important.

This is sub-field dependent. In certain sub-fields where large experiments have international collaborations it is essential. Attendance at international conferences is important, particularly in areas where key conferences are held abroad. It would be highly desirable if there were less travel restrictions and if more travel funds were available to young physicists.

This issue is very much dependent on the organizational environment, and sponsorship resources. There are also issues related to the direction information transfer and exchange. Travel to developed countries is mutually beneficial. Travel to under-developed countries is an instructional opportunity both are beneficial, however, the latter might be better served by mature scientists.

Those whom I know appear to travel with little difficulty

To begin with, I should state that my initial experience abroad was with the Peace Corps, shortly after I received my doctorate, I taught at a university in Turkey. Most US-based physicists, as far as I can see, are familiar with work done in Europe, and often know colleagues from China, India, and some other locations as well. However, they seem to know little about the rest of the world, which should be part of their education. If physics, and science more generally, is to be a means of helping the world stay in one piece, it would be extremely useful for US physicists to extend their experience, especially with less developed countries. It is hard to appreciate what the world is like until one has some experience with it. Probably the best way for young physicists to understand this is to interact with colleagues from the rest of the world.

Travel abroad is limited to select conferences. International research collaborations for "small science" should be encouraged.

Travel abroad is not a big issue in my thinking.

Travel abroad is very important for the development of young US physicists, and I support increasing this. I was able to spend 18 months at the Fritz-Haber-Institut in Berlin Germany as a recipient of a Max Plank Society Fellowship. This experience opened a new area of physics for me and dramatically changed the direction of my research. I also established collaborations that have endured, and became fluent in another language. For young people, a program analogous to the German Humbolt or MPG Fellowships, but for US physicists to study abroad would be invaluable. Going to conferences is good, but extended work abroad for at least a few months would be better. Perhaps even a postdoc exchange program.

Travel budgets are too small for international collaboration. The dollar is dropping. Young physicists should be able to contribute outside of huge collaborations

Travel is essential and should be strongly encouraged.

Travel to international conferences. travel for collaborative research.

travel to meetings where they present material and get to know colleagues.

Travel to third world countries, and working with international NGOs.

Traveling abroad is not the problem -- receiving adequate funding here is!

Two things are increasing: the cost of travel and the ability to communicate instantly worldwide. I am less enthusiastic about world-wise travel than I once was.

Underwriting travel expenses for graduate students and beginning postdocs to international meetings where they give talks would be important. One's research grants often have some but not enough money for all such occasions.

Unless there is a specific collaboration or facility that dictates travel abroad, I don't think such travel is important to the development of a physics career (there may be good non-physics related reasons to travel but that is not the subject being raised here).

Unless you see a way to change Dept of Energy, HHS, etc limits on foreign travel to conferences, I don't have a recommendation.

US based physicists should plan on spending some time abroad since the priorities in physics and teaching and research methods differ overseas.

Very difficult to determine. International travel is essential for young US-based physicists.

Very important to provide these experiences.

Visa for non-US citizens are difficult, so there are not enough foreign visitors to the US, and this reduces the collaboration and opportunity for US citizens to work and travel to visit foreign collaborators.

We could improve the opportunities for foreign travel. Funding for international collaborations is below what it should be, in part because it is difficult to get separate approval in both the US and abroad. In addition, the US often places restrictions in regular grants that require the recipient be a US citizen or permanent resident, cutting out the international collaborators.

We get the opportunities that we write grants to pay for is there some other way?

We need more experiences - as lecturers and students at programs/workshops/short courses, etc

What is, I think, needed more is something to persuade physicists whose brains are still flexible enough for it to learn the languages of the collaborators they already have. I don't know how you do this (except a fairly new postdoc who just dropped by my office to chat is now involved for NSF with a project with the German counterpart. She is married to a German scientist whom she first met at an overseas conference and has acquired considerable proficiency in German both by formal study and by living there for a while with him. Not sure how generally applicable this model is!

Where funds are available there are no issues. The problem is that young scientists without grants have difficulty traveling unless they want to pay out of their own pockets. A better approach is needed but what that could be is not simple.

Why are these opportunities important?

Why we are failing to produce enough young physicists would seem a more important problem.

With the center of gravity of particle physics moving toward Europe, it is important for young US physicists to go to Europe. The opportunities presently do not seem sufficient to meet demand.

Work on international experiments

Work with non-academic colleagues.

Would be good to have an opportunity to take a sabbatical year or half a year abroad.

Yes

Yes

yes they are

yes they are

Yes they are.

yes they are.

yes, I think most young physicists travel pretty readily

yes, for DoE supported HEP. I don't know more generally.

yes, from my viewpoint in fusion and plasma science there are several opportunities abroad for US-based physicists, esp. in EU and Asia

Yes, I do think US physicists have enough opportunities to travel abroad for physics research and conferences.

Yes, I think interaction is a very important way for all of us to learn. Biological Physics has not had very much interaction internationally. It is still young and has very little representation on NIH and NSF study section. There is more at NSF. Young people would profit from meetings like the Biophysical Society Discussions.

Yes, I think opportunities are adequate and reasonable.

Yes, I think young US-based physicists are receiving good opportunities.

Yes, there are enough opportunities.

Yes, there are plenty of opportunities.

Yes, they are getting enough opportunity to travel abroad.

Yes, they are getting opportunities

Yes, they are given ample opportunities to travel abroad.

Yes, they are.

Yes, they are.

yes, they are.

Yes.

Yes.

Yes.

Yes. But these need to be widely publicized.

Yes. Good luck with this administration, however.

You can never have enough travel. Going to more international conferences and collaboration meetings is always good for young physicists. Of course, traveling to where experiments are actually being performed is even more important. There is ALWAYS a shortage of travel funds for such trips.

Young employees in my lab get to go to the best meetings in the world.

Young faculty in my department, who are actively involved in research, have worked with colleagues abroad on several occasions over the past three-four years. It appears to me that resources are adequate for those who wish to do so.

Young people who are associated with research groups that have international collaborations generally get such opportunities, but others do not. It would be nice if there were a program that could send students to work in labs abroad for limited periods (e.g. 3 months). This could help foster such collaborations as well as provide good experiences for the students' professional development.

Young physicists in my industry certainly get the opportunity to travel abroad to meetings.

Young physicists benefit from meeting the international community in their area of specialization. In many instances, members of the international community have neither the time nor the resources to come to meetings in the US. Visits abroad, therefore, help to establish working relationships.

Young physicists in the U.S. with foreign visa have much less opportunity to attend conferences abroad.

Young physicists need to be able to travel and interact with their colleagues across the globe, just as physicists from other countries have done for decades. At a minimum, traveling to conferences is critical. Even better is the opportunity to spend time (at least a summer) in a foreign physics institution/department

Young physicists would be attending more conferences outside the US. The number of junior faculty and researchers at the conferences that I attend is very small. The young faculty also need to become better aware of differences in the educational systems outside the US.

Young U.S. based physicists need to be encouraged to make their careers abroad since science as we know it is ending here.

Young US based physicists have great opportunities to travel abroad due to many international conferences. The challenge is for physicists to find employment that rewards the participation in conferences, whether they be abroad or in the US.

Young US based physicists should be given to attend extensive professional meetings with foreign colleagues. A month during the summer would be preferable.

Young US physicists get the opportunities they need to travel abroad.

Young US-based physicists are not getting enough physics-related opportunities to travel abroad, partly due to the local demands to establish one self at their home institution.

Young US-based physicists may benefit from participating in international research conferences, where they may present their research results.

Verbatim Comments

Question 18: *What additional international programs that other associations have would you like APS to consider undertaking?*

Students who earned bachelors in U.S.

APS needs to establish several research activities abroad.

AAPM

ACS

African Physical Society (if any) EPS. Chinese Physical Society (if any) Indian Physical Society (if any)

AVS

Direct collaboration with top universities in the world, e.g., the Indian Institute of Technology.

energy or bio-physics program related to divisions of APS, like Division of Fluid Dynamics.

exchange faculty and scientists regularly for doing research for a period of time between US and the other countries.

Exchange program

gathering APS in other countries

Graduate student research competition/recognition in a particular category like polymers for example. This would really be helpful in my thinking, as a mere recognition provides enough fuel to graduate students to fare better and better in research.

Helping other physics meeting in developing countries. Assign world renowned APS member to give plenary talk in those meeting.

I am really very new to research and have very, very limited experience about APS or other associations so I can't comment on this as well.

I attend the DAMOP conference every year . All participants are generally from US and Canada. It would be beneficial to us to have participants from other countries to join and make it an International event. Last year I attended the International Conference on Atomic Physics in Austria and they had arranged for a 2 week-long summer school before the conference. If APS also arranges for similar summer schools or workshops before the conferences, many students will benefit.

I think APS should look for a means for Physicists in developing countries to have access to APS journals at a moderate cost or free if possible.

I would refrain from spending US taxpayers money on developing science in other countries. If you have excess of money - spend it within the US on your own students and scientists. At least that is not what people, who pays taxes, expect from their government.

I would suggest save the money for something else.

Information about Physics related fields which have job opportunities for a someone who is primarily from a Physics background can also be provided through different forums under APS

international school on various new fields of physics

international meeting arranged by physics societies from many countries

International Scientific-Technological Center, ISTC

Many programs organized by and for Asia-Pacific countries.

Maybe promotion of student exchanges with international labs.

More cooperation between US and developing countries. Especially between young physicists.

More interaction between young physicists around the world.

More structured collaborative basic research, in those areas where such collaborations are feasible within the constraints that may be in place.

MRS

Provide students and postdoctoral fellows from abroad financial support to attend conferences in the US.

push current programs so that more people know about it.

Scholarship for international students, at the PhD level enrolled in Physics or Astronomy Department.

Sometimes, the meetings should be held in some developing countries.

specialized conference in developing countries.

Sponsor physicists without citizenship to attend international meetings abroad through a competitive selection.

student presentations : selected students should be given travel award and chance to present their work.

support for using facilities

The institute of physics, London, offers travel grant to student to attend conferences abroad. I'm not aware if APS has a similar program.

Travel award for students within the United States

Recent entrants into workforce who earned bachelors in U.S.

APS can start developing a summer internship program by bringing together various international universities. I know of no scientific body that does this kind of service, but would be of great value to physics at the end.

APS may have a special program to honor and award Physicists working in developing countries and able to develop research in physics that impact science. Some special or distinguished prizes may be also awarded to them.

Assist in bringing more talented and promising scientists to US/developed countries to continue their careers in physics.

Exchange for scientist from developing countries

Gordon conference.

I believe many countries have their own Physical society. So, it may be a good idea to have exchange students program between APS and other Physical society in foreign countries. APS may support financially some qualified students.

I think that exchange programs between colleges and Universities can make a difference in this direction

ICAM and I2CAM have interesting programs for international exchange.

Immigration related paper work.

More courses similar to the Curie.

More number of student exchange programs with universities especially in Asia, which will give opportunity for both sides to exchange their experiences.

More programs for supporting physicists in the developing countries to help them to build new labs

Outreach. We need more scientists to live in the US.

Perhaps promoting visiting programs where people from the developing world can come to the US to study for a year or so could be useful to bring foster collaborations

postdoc fellowship program for young scientists in USA like Humboldt fellowship of Germany.

Several European conferences seem interesting. But, the problem like visa and costs made me hesitate to join them.

Small scholarship program

Some associations have joint meetings involving two or more (normally geographically close) countries. I imagine that many countries would be interested in that possibility given the high research level of the US.

Sponsor seminar and conference in developing countries

Student exchange programs

The international program should also include excellent undergraduate students abroad.

travel support

Try to connect to European programs like ERC (FP7), Marie Curie fellowships etc. and help scientists in the US through the application process

Experienced workforce who earned bachelors in U.S.

1. For example a one month summer research exchange for PhD students or for pairs PhD student/supervisor would be interesting. 2. Initiate an International Center for Theoretical and Experimental Physics, located within USA (like ICTPE - Trieste) with courses, PhD students, laboratories... 3. For USA...Physics professors teaching at US universities should take at least 4 to 8 weeks courses in advanced experimental and theoretical physics every 5 years. APS should start with such a programs before anything else... to keep the American professors in good shape...

2-3 month long sponsored visits to do experiments and/or do a series of seminars (lectures).

A program for scientists from developing countries that gives the opportunity to spend periods ranging from a few months to one year at US research laboratories of universities, governmental and private institutions, which operate in different branches of physics. You can see the Italian program at <http://www.ictp.it/pages/education/tril.html>

a) I would suggest to incorporate an international collaboration component partially supported by APS inside (for example) NSF Career Awards. b) a JOINT support or organization of joint international conferences or meetings by APS and a foreign country physical society or other foreign science organizations like Russian, Chinese Academy of Sciences, etc.

Actually, for a start, I would like to see better dissemination of information about the programs that already exist. Further programs which no one ever hears about will not be very useful, even if they look good on paper.

All federal, private, and industrial funding agencies

APS can undertake other international programs especially from Europe.

APS does well. I try to get other societies to copy APS.

APS may want to consider co-sponsor overseas workshops and conferences.

APS really needs to step-up outreach programs to inner city kids, etc. There is a huge pool of talent waiting to be tapped. I know because I work with them sometimes. And I never found APS to be responsive to holding a booth at science fairs, etc. Very helpful would be to provide giveaways like pens, frig magnets, etc.

APS should avoid politically charged initiatives. It is not its role to be on the vanguard of liberalism: APS is a PROFESSIONAL society. APS journals should stop publishing articles (co)authored by people from Iran, Cuba, and other such no-trade countries, or at least conduct a survey of the membership regarding such policies. APS should have programs for "travel-help insurance" and local-colleagues-help-network in case of problems, for US scientists traveling on scientific visits. Discounts offered to "developing" countries should be reciprocal: "what's in it for the US Science?" should be clearly answered. For example, why should US university libraries pay for free access at "developing" countries? Is the answer to this obvious? It is not to me (and I guess many other APS members). Who defines a "developing" country? Do we finance science for some dictatorships that later might develop atomic weapons to use against us if the political tides change and a new dictator comes to power? Instead, invest resources to help recruiting their best young scientists to come to the USA: job search visits, for instance.

APS should consider funding visitors from Developing countries to visit USA for up to two months or so for collaborative purposes to US universities. This is likely to pay off in the long run for all concerned.

Associations like APS in Asia or Europe.

Conducting Short Courses on specific topics

Direct involvement on the funding level. Fellowships should be allocated to support travel for people who are willing to frequently travel to developing countries and develop long term fruitful relationships. People with proven track record should be identified and if they are willing to travel awarded a specific named prize and access to travel money (dependent on the success of their proposed travel proposal).

do nothing. APS does not have to do this. It should be initiated by individuals.

donate textbooks, computers, lab equipment, and journals to colleges and universities in developing countries.

Don't know. Perhaps some highly regarded scholarship program that can be considered a highlight in a student's resume would make it more attractive for young people to work abroad. Currently, there seems to be not enough incentive for students to go abroad, because there is not a perception of prestige associated with international experience.

Don't know: but, I'm very much in favor of cooperation with physicists in foreign countries. For one thing, physics in Europe (and also Japan) is very well developed, and we can learn a lot there. Cooperation with physicists in developing countries is another matter. By and large, intelligent, hardworking people that you need in physics can not thrive in developing countries, for lack of funding, lack of history, and political problems (when you are smart, and you think not only about physics but also about politics, you could well end up in jail rather than in a laboratory). Therefore, it's very important for such people from developing countries to be able to spread their wings in the developed world. Almost anyone who manages to get out of there with enough smarts to make it in physics research in the US must be really smart, well-organized, creative, etc., exactly the type of people that we need.

Enhanced visiting scholar programs

exchange programs

Exchange programs

Exchange programs for graduate students. Maybe this is something that is already existing and I just don't know about.

Exchange programs would be very helpful. I completed all of my education, including my PhD in India. I work in the US now (NASA). During my PhD I had just one opportunity to visit Germany to present at a conference, funded by my institute and the Indian govt, but never an opportunity to visit the US. Funds are a big deterrent. Even an opportunity to attend the APS onetime would have been helpful

Exchange programs.

exchange teaching programs

For example: the US-Polish conference like APS - PTF (Polish Physical Society). There are hundreds of Polish scientists in the US and such a conference would be fruitful.

Frankly, nothing in particular. I like the APS to focus on what it does best, publish journals and organize meetings. Let international travel and international affairs be funded by the usual suspects: NSF, DOE, ONR, etc., through the normal channels of research sponsorship.

Funding of international exchange programs in particular for post-docs.

Having joint conferences outside US?

Hold topical meetings or workshops in other countries.

Human rights -- APS has a respectable record, keep it up.

I am a physicist planning to go back to China to work for a small university there. I wonder whether there is any chance for us to get support from APS for coming back to the US occasionally to communicate with my collaborators here.

I am only familiar with the German DAAD (Deutscher Akademischer Austausch Dienst, or German Acad. Exchange Service) arranges short stays for academics (students included, I believe) with other countries. There is also the Alexander-von-Humboldt Stiftung which brings academics into various programs abroad.

I don't think any other association has such a program: sponsorship of a general exchange program for young students, for example to spend one study year at CERN(Switzerland), at GANIL(France) or at GSI(Germany), arranged together with the European Physical Society. It is also important to have some exchange program with China and India.

I think helping to obtain Visa for the APS conferences would be very helpful.

In general, wider access to scientific information via Internet for APS members from developing countries

International exchange programs where both countries fund their researchers for conference and experiment related work.

International lectureship programs exchange student or scholar programs.

International Linear Collider

International meetings outside the US, with APS active co-sponsorship.

International postdoc exchange programs ?

International Society of Magnetic Resonance in Medicine

international summer schools focusing on a mix of young US/foreign scientists, with close interactions during the school.

Internships for young scientists in Europe and Japan.

It would be great to have a program promoting the visits of graduate/undergraduate students from abroad for summer research programs.

It would be interesting to have programs where foreign researchers could spend a relatively extended period of time as visitors (say from 3 to 6 months) in the USA and the same vice versa. I'm aware of course that this will affect teaching and other research responsibilities but I think that these problems could be solved in principle. For example one could imagine creating grant programs where money could be requested to pay a teaching replacement to cover teaching duties in such a way that departments are not affected for the temporary departure of one of its

members. The ICTP in Trieste, Italy has a program similar to this one where scientists apply to be accepted as associate scientists and they could visit that institution once a year (if my memory does not fail me) with local expenses paid. Their own institutions are responsible for travel expenses. A program like that allows foreign scientists to visit ICTP and interact with other scientist from around the world for longer periods of time than the one allowed in conferences or similar types of meetings. Perhaps the APS could choose a certain number of institutions in the USA where to test a pilot program based on these ideas and see how it works.

It would be useful if the APS made funds available for travel grants to students and postdocs to participate in International Conferences outside the US. The AAS has a program like this.

Joint conference and workshop

Joint research, multiyear programs, covering travel grants for both US-based and a party abroad (like NSF joint international programs).

linear collider and ILC

lobby for cooperative research grants from NSF/DOE/NASA

make all physics journals free and online.

maybe exchange programs for students and postdocs

Mexican Association of physicists

Model your distinguished lectures program on the line of IEEE Distinguished Lecture Program

No, each association should have their proper international programs, and I do not think that APS needs to undertake everything.

None Fellowships for fresh PhDs to do a first postdoc outside US would be helpful. But this is not necessarily APS matter.

None that I know of - I think the APS does a good job of engaging with the international physics community.

None. APS is quite active in this area.

None. Promoting international collaboration should be primarily the job of the funding agencies - perhaps with a push from the APS. The APS should concentrate on doing what it already does in this area well.

Not familiar with international programs of other associations.

Not sure without looking at them - something like the Alexander Humboldt fellowships in Germany - but set up for US students, postdocs and young faculty to visit other countries, would be useful, but not at the expense of cutting already slim research funding.

Organize schools and extended workshops with fellowships for students from less developed countries

Physicists who do not have full time jobs and still want to do research, should be able to get research grants in US as the full-time hiring is becoming very difficult. This funding may be presented in the form of awards after the completion of the work.

postdoctoral exchange programs

Program for International High School students (developing countries) to participate in US Students scientific programs to exchange knowledge and for their own development of thoughts.

Programs to promote research collaboration in cutting edge areas, especially of multi-disciplinary nature, among young researchers.

Promote to importance of international experiences

provide grants for so called "sandwich" graduate studies, where institutions here and elsewhere collaborate on graduate research projects and training.

provide Physics Today with more money to offer services to the physics community.

Providing physics text books for cheaper prices to developing countries.

reduce registration fees for full member

Scholarship for scientists on Sabbatical to work abroad.

Short term (3 months or so) exchange of scholars.

Short term fellowships for graduate and undergraduate students to spend time at US institutions

Sorry, I am not well familiar with this matter. I would recommend to look at the European Union programs. On my opinion, young scientists in Europe have more opportunities for abroad traveling than Americans.

Sponsor international conference programs with different regions of the world, such as Asia and Europe, etc.

sponsoring more undergraduates to go with short visits (~1-2 months) to see research abroad

Sponsorship of joint workshops and summer schools between the US and other countries.

Sponsorship of short term visiting opportunities to research institutes in other country.

strengthen the relation with Leipzig University in Germany on both students and faculty levels

Student travel award to March Meeting

Summer schools abound in Europe, in different fields of science, to which young researchers from all over the world are invited. It would be very rewarding for both US scientists and institutions to organize workshops where the attendance and participation of foreign young physicist is supported and encouraged.

Support of bright students from abroad for education in the US and support of talented American students for getting advanced courses in Europe.

Support students from developing countries by providing specific scholarships to visit labs and universities in USA for summer research.

The current programs are enough.

The fellowship and research awards granted by the Alexander von Humboldt Foundation in Germany are a model for programs to develop international scientific cooperation.

The visa situation is becoming critical for those from developing countries who visit the US from abroad, either to collaborate and use facilities, or just to participate at conferences. I know of at least two triennial international conference series that now seem to avoid a US venue exactly for this reason. This situation is hurting US scientists, not just those from the developing world.

There is a tendency, induced by ease of access, for the American scientists to refer to the work of their own colleagues. Thus a conscientious attempt to include foreign speakers in plenary talks at the APS meetings may be considered.

To increase interactions across borders, one might think about introducing "partner institutions" similar to partner cities. There could then be an exchange between students/teachers or, depending on the match, researchers. Just a thought....

to provide money for international conferences

to sponsor at least partially participation of scientists from developing countries in US conferences

To sponsor more international conferences for the joint multinational societies that are held outside US.

Travel grants for attending the meeting abroad.

Try to facilitate as much as possible foreign graduate students to come to the US and at the same time to do as much as possible to convince young American physicists to work/study abroad.

Use cyber to connect scientists from third world countries to major US facilities. and facilitate access to instrumentation.

We need to strengthen our connection with scientists in Middle East, Africa and South and Central America. I would like to see: -program of travel grants for these physicists to attend the APS meetings. -APS sponsored grants for extended visit of these physicists to research groups in

Universities and National Laboratories. -APS sponsored grants for students from these areas to attend graduate school in the States.

What about the International Materials Research Society conferences?

Work to enhance K-12 Science Education in developing countries.

Students who earned bachelors abroad

Assistance for physicists, including non-academic, who want to travel abroad to teach

Don't know. My NSF-IGERT fellowship paid for me to do either 3 month internship or 3 month RA rotation in the US or abroad. I chose to do an internship in China and it was very rewarding. The fellowship also paid for me to get up to yr of courses or tutoring in the language the year before I went. It helped that I had 4 yrs in college. However, I think this was a great opportunity. I think others should have the same opportunity.

Dual membership partnerships could offer some members advantages to interact with colleagues in different associations.

Exchange programs for graduate students and early PhDs.

Funding for more international women in physics.

Get international undergrads to participate in REU programs.

I believe the NSF has some fellowships for young scientists to work abroad. It would be good if APS had a similar program (though it may exist, I am not aware of it).

I believe we should be putting the best Physicists we have in this Country into the elementary/primary and high school classrooms a few weeks a year to help promote science and engineering from the earliest of ages forward. I know APS already has student's interests in our sights, but we need to help promote the curriculum without prejudice in the same manner that booster clubs promote football in our high schools. The coaches that spend their afternoons on a practice field helping young men turn in to mindless crash test dummies, get paid extra to do so. Why shouldn't the science club teachers be treated the same way? I believe the APS along with other science and engineering based societies should even consider getting together under a common goal to put physicists, chemists, and mathematicians amongst others at every PTA meeting in North America at least twice a year until people reconsider what they are NOT teaching our youth prior to college level course work.

I don't think I'm familiar enough with the possibilities to list anything here. I suppose any programs/associations available.

I find myself rather uninformed on this subject, and thus I don't have any recommendations -- however, I hope that this is not taken as a recommendation for doing nothing!

I know that there is a group in Prague at Charles University that has tried to hold an international physics teaching conference in Prague but since they could not offer support it was hard to get people to come. Support for such things is very important and some type of formal program would help.

I look forward to using some of your services for job applicants when I graduate. Closer ties to more industries would help since the majority of physicists will not find placement in academia or government labs.

I'm going to the Latin American Symposium on Nuclear Physics and Applications this summer under an NSF grant. If funding for this conference or similar conferences were available from the APS, more students would have the opportunity to go.

In addition to extended research internships, add shorter "lab visits" so more students can participate.

International atomic summer seminars (glorified summer school)

International physics schools.

It seems like the APS should assess what countries are stronger/better than the US in each branch of physics and then send create opportunities to send US scientists there. Similarly, the APS could assess what foreign countries would benefit the most from US scientists and then create opportunities to send them their.

maybe some sort of competitive "semester or summer abroad program" for graduates students to do research abroad and starting forming relationships with collaborators outside the US. by their very nature, accelerator based labs essentially do this already. I'm talking about a program for other more table top fields like atomic or condensed matter physics.

Modest awards for travel to labs in other countries, with perhaps a small stipend for living and equipment, would encourage scientific exchanges.

More exchange opportunities.

More international workshops (like IOP) and more sponsorship of physicists in developing countries (I am not actually sure if other associations have more of this vs APS, though).

Opportunities for US physicists to teach or do research abroad, maybe?

Organize volunteering trips for Physics teaching in Africa and some countries in S America. Possibly subsidize some of the traveling costs.

Perhaps something like a Fulbright?

Postdoctoral fellowships for 3rd world scientists

Research grant to physicists in the developing countries with collaboration with physicists in the US maybe. Especially to developing countries where physics research opportunities are limited, Nepal for instance. Even if the sum is not too large, if the grant was large enough to support a theory group, I think the contribution from the physicist from underrepresented part of the world could really benefit the field.

SPIE's Biophysics Summer School abroad as well as summer schools in other areas.

Sponsored degree abroad programs

Sponsoring US-based physicists and students for foreign summer schools (I can think of at least 10 per year in Europe alone).

The APS would be an excellent voice for the advancement of clean, reliable energy resources for the world. I would proudly support and wholeheartedly recommend the APS work with our international counterparts to elevate the discussion of sound energy policy worldwide.

Undergraduate institutions have a study abroad program. They are very effective in teaching students about other areas of the world. It would be wise that all young, emerging physicists be required to work in another country for at least several months of their student career.

Unfortunately, I know of none, and would have really benefited from such programs when I was earlier in my career. I feel this is an extremely important issue that should be addressed with high priority.

Recent entrants into workforce who earned bachelors abroad

APS moderated short-term exchange for early-career scientists

APS needs to institute the original concept of science, during the continental rationalist period, that is knowledge must be freely exchanged across all borders and all economic barriers.

financial support for graduate students or postdocs to attend conferences abroad if they don't have such support from their supervisors

Honestly, unless you want to be the International Physics Society, I don't think APS should be supporting international programs at all. Why not focus on supporting American physicists?

One-year exchange programs similar to the humanities but with research placement science and engineering.

Short-term exchange programs of graduate students from different institutions trading places for a summer early in their careers. More international collaborations on similar projects would be valuable.

Some of my colleagues from China had a lot of trouble with leaving and entering the US. The US would be needlessly difficult about giving student VISAs (e.g., they would flag "black hole" research as a security risk). Advocacy on behalf of foreign grad students in this situation at the national level could be very effective in fixing this problem and thus encouraging foreign students to choose to be employed in the US after graduation.

Supporting/establishing/organizing exchange programs between universities in the US and abroad would be nice.

The New York Academy of Sciences is starting "Scientists without Borders". The basic idea is to provide opportunities for Scientists to volunteer their skills internationally. I am very interested in participating in these types of programs.

Experienced workforce who earned bachelors abroad

Develop and encourage relationships between foreign scientists and laboratories. The US is losing or has lost its technological advantage in many specialties and this is a mechanism to help keep our technology current. Also the lure of foreign travel may provide incentive for more people to go into physics.

Maybe closer collaboration with counterpart societies in other countries -- advertise each others' meetings, charge member (rather than non-member) fees etc.

A closer contact with professional organizations overseas, specially in Europe, Japan, Australia, China and India, but not excluding other countries.

a major US/EU fellows (young postdocs) exchange program would be great, with fellows free to take their fellowship to place of their choice (in the spirit of Rockefeller fellowships of 1920's)

A website with and accurate and exhaustive list of all physics conferences, international and US.

Additional assistance in appropriate technology to assist primary and secondary education in the third world. See, for example, the recent NYTimes story about solar powered flashlights at http://www.nytimes.com/2007/05/20/world/africa/20lights.html?_r=1&oref=slogin

APS should provide a list of the international institutions/labs where US physicists can apply for temporary positions.

APS should work on setting up academic exchange programs where students from other countries can avail themselves of doing research in up-to-date laboratory research in the US. APS should develop a program that makes it easier for institutions to forge the ties necessary for such student exchange programs.

Astrophysics

Being retired since 1995 I am so out of touch I can't answer this question.

Better integration and exchange programs with the Office of Science of the DOE.

bring postdocs to USA from abroad

Close contact with EPS and possibly with Asian Physics organization.

Collaboration with other physical societies outside the U.S. is very worthwhile.

Conferences on physics infrastructure development assisting in developing relationships among indigenous scientists.

Consider having 1-year stipends for students and faculty to perform research in industrial and academic settings in other countries.

Continue with 2-way exchanges between US and foreign-country physicists

Co-organizing workshops and conferences with foreign or regional societies, e.g. Europ. Phys. Soc., Asia Pacific Physics Society, Japanese Phys. Soc.

create a forum to discuss and act on problems similar to activities addressing domestic issues

Curbing publication expenses

donation and distribution of back issues of journals or even popular science periodicals

Education

Encourage the NSF and other funding agencies to provide international travel support for collaborative research which can be spent on both US and non-US people, without separate approval by the foreign country's funding agencies.

Establishing graduate and postdoctoral fellowships for US students to work abroad would be very worthwhile. Currently, many such programs are available to support European and Asian students in their studies at US institutions, but very few provide support in the opposite direction. The APS could reasonably provide funding for such a program.

Exchange programs

Exchange programs

Exchange programs.

Exchanging information about new pedagogies for effective educational practices leading to better student learning. How this is related to the health of our profession and the use of scientific knowledge in and by society.

Facilitate interaction/exchange with other physical societies on other continents.

Faculty and student exchanges especially at smaller institutions with fewer resources.

Faculty exchanges would be a good undertaking!

Focus more on how APS and physics can help developing countries from education to the environment.

foreign members

Fulbright was my choice and it was good for me. Any scheme that gets our young people overseas for a year + is of great benefit.

Funds for sabbaticals.

further ties to other national physics associations

Graduate student programs such as those that NSF supports. APS should also consider joint ventures with international partners, especially in the UK, EU and Asia.

Graduate year overseas would be an attractive option.

Highlighting existing programs would be important. Helping to set up opportunities for collaboration for scientists from developing nations with large US facilities would probably be very helpful.

How about a summer-in-a-foreign-lab program for promising undergraduate physics majors between their junior and senior years? This is off the top of my head. More thought might change my view.

How about an analogous program to Medecins Sans Frontieres, a sort of "Physics Teachers without Borders" program, to improve the state of science education in developing nations. I'd volunteer.

How about facilitating summer visits to foreign institutions? How about a FIP coordinated Travel Abroad Program?

How about informing the APS members about physicists who are in political danger so we can just write to them, or their governments, about physics and how they are doing, the way Amnesty International does it.

How about offering travel grants for PhD students or young postdocs in the US to travel to conferences or workshops (better) abroad?

How about programs for adjunct membership in related foreign societies such as Chinese, Japanese etc. Physics societies.

How can APS afford additional international activities? If you can, help African Physicists!!

I am an official in the IAU (International Astronomical Union). If there is not a similar international organization in physics, perhaps there should be....

I am aware of IEEE programs, but not familiar enough to comment.

I am not aware of the range of activities that exist in social, biological, humanities, etc have. But APS needs to reach out to them for ideas and cooperation.

I am not sure. I think the Canadian Association of Physicists partners with the APS, so that CAP members may attend APS conferences at the same cost as APS members, but I don't hear of this going the other way. In my region, students and post-docs might benefit from the Western Regional Nuclear and Particle Physics Conferences in Lake Louise. I don't think this is exactly what you were asking for, though.

I am not very familiar with existing programs, but something for students between sophomore and junior year would be about right. - some language training, some organized weekend sightseeing and fulltime job in a laboratory.

I believe it is very important to encourage international collaborations especially those involving foreign students and postdoc who come to the US to do research. I receive numerous requests from foreign postdocs to come and do research in my laboratory but it is difficult to find funding for these collaborations. An APS program to promote such collaborations would be quite important.

I believe we are entering an era in which international cooperation in the sciences at all levels will be crucial. Can we become advocates for funding of international collaboration in select areas, particularly crossing disciplines? Working together is important in building partnerships.

I couldn't comment specifically. I would say, though, that acquainting scientists from developing nations with the U.S. generally, and with the research protocols of well-run organizations, and with the ethical and managerial climate in which we work, is a very good thing.

I do not have any specific suggestions here since I have not followed the available international programs. I think working with the IAEA in their international programs for less developed communities have potential.

I don't know how the selection process works for ITGAP, but in my case, I would like to have travel funds for graduate students in my collaborator's lab (India) to come and work in the US on our joint projects (as opposed to travel funds for the faculty member).

I don't know whether other associations have it, but encouraging collaboration by email (a lot cheaper than actual travel) would be useful.

I get the sense that the APS is taking on international programs because the leadership values such things. In some cases, the programs make sense in the context of what a society like APS should be doing. In other cases, I feel the APS should work with more appropriate organizations to offer help and suggestions rather than take on the program itself. For example, the issue of

making publications available to developing countries is not a simple issue. It has a cost to the APS (providing for free what is usually charged to US customers), and such things should be promoted and supported through business alliances or university alliances without direct cost to the APS. Even more important, it is a matter of US business policy (as if there is any, really) as to how the US should focus on dealing with the issues that face the US as part of a global community. At first blush, accelerating the rate at which developing countries can avail themselves of resources, infrastructure, and knowledge that we have developed over many decades has the potentially negative impact of making the job situation in this country progressively more dire for scientists and engineers. Such efforts should not precede a solid governmental policy regarding the growth (or restoration, as the case may be) of the scientific capability in the US (particularly in Industry). While few can argue that there is a looming crisis with respect to supply of skilled scientists in the US, the simple fact is that there are currently no underlying market forces driving the growth of opportunity for scientists in the US. Rather, as more and more manufacturing jobs are outsourced to the developing world, research centers and engineering centers are being built by and paid for by US companies and other companies, and the high-skilled, high paying R&D jobs are increasingly being outsourced to developing countries. One might argue in alarmist and exaggerated fashion that if such trends continue, there will be nothing left in the US except MBAs (God bless their pointy heads), lawyers (worse than MBAs), doctors, and a huge welfare class. All kidding aside, I think the cart is well before the horse if the APS attempts to take on the issue of doing its part for globalization before the US figures out a sound policy for maintaining a strategic core of capability within its borders and maintaining a suitable level of opportunity for scientists and engineers in this country (whether native or immigrant). I'd urge the APS to spend its energies on working with government and business organizations to push for opportunities for scientists within our borders before creating huge opportunities outside our borders. Once we have committed to having the opportunities in this country and have made a good attempt at demonstrating to US students that going into science is not a bad economic decision on their part, we can then address a shortfall of scientists by actively taking a role in expanding the growth and development of the scientific community abroad, if need be. Bringing international talent to this country to work side-by-side with local talent would be a wonderful thing. Cultivating the talent abroad to compete with local talent or to further reduce the opportunities for those in our country would not be so wonderful.

I have no particular ideas. I think it is important that APS continue to lobby for free travel by scientists among all countries of the world.

I haven't really thought about it. Where do the funds come from, and what funds are available?

I think APS should focus on gaps that funding agencies can not fill.

I think APS should focus on the big problems facing US scientists and the greater US population: poor technical training at all levels and poor support for research and education. Part of this concentration should include developing an understanding - through foreign collaborations - about where we are leaders and where we are falling behind.

I think it would be useful and not too expensive or unmanageable to provide and advertise lists of physicists both here and abroad who would be open to interaction in different areas of physics,

and perhaps at various levels, and facilitate that kind of interaction at least via electronic communications.

I think strategic partnerships with important foreign societies are weak. There are structural problems with many of those international societies (old, hierarchical, stuffy, wrong people, close-minded, etc.) and choosing partnerships could be tricky. But if done correctly it could lead to better conferences and large-scale collaborations of great use to physics in the U.S.

I think the most effective programs would come from federal agencies with larger budgets than APS.

I work in particle physics at RHIC and at CERN. Both of those facilities have active and effective programs to attract and engage physicists from developing countries. I go to China twice a year that is about all I can stand.

I worked for AAAS in International Science as a consultant in DC. They did something at that time with support from then-president Margaret Mead, which I recommend emulating. Their director of international programs Irene Tinker had the idea to survey all their cooperating professional societies -- for APS it might be members of IUPAPS -- for programs they were undertaking, ideas about cooperating and finding synergy *and* for suggestions of who could come to a meeting in DC. We gathered everyone and had a fine meeting setting out possibilities and priorities for a truly cooperative international program that helped organizations to help each other! [Unfortunately this enhanced program of international activity by AAAS was rather swiftly vetoed (nipped in the bud) by an executive director whose name I forget. From which one learned that proper involvement and advance engagement with all crucial actors is essential to success.]

I would be happy to host international scholars in my lab if the APS could find a way to sponsor them. We typically do not have grant resources at the required level.

I would concentrate on NATO countries, Australia, Japan, and New Zealand.

I would like the various divisions and topical groups to initiate efforts to get to know physicists in their disciplines in developing countries. Exchanges of publications and visits could be a part of this effort. Simply listing physicists in various countries along with their research interests may help. I do not think we know our colleagues in these countries well enough to help them become a more vibrant part of the worldwide physics community. I do not know that other associations have a program like this but I think it is a good idea.

I would like to see lobbying of Congress and Administration to emphasize the importance of international collaboration to the health of science in the US.

I would like to see more efforts to engage the K-12 community in science and engineering from all of the societies. Much is being done, but not enough.

If the APS can have an exchange program that requires the applicant to act as a seed for the collaboration between a US physicist and one overseas, it will be greatly beneficial not only to the young scientist, but also to the establishment of closer ties and collaboration.

I'm not aware of other professional organizations that do much better. I've received a small NSF grant to initiate collaborations and perhaps APS could consider something like that. Aside from a major program like that, however, just available funds for young researchers to attend foreign conferences would be useful.

I'm not familiar with the international programs of any other associations. Maybe co-sponsoring conferences with foreign physical societies?

I'm not very aware of other such programs. The American Chemical Society probably has some good models.

Individual members of APS sponsoring memberships and journals for physicists in developing countries and Eastern Europe who cannot afford them

Interact with and apply some assistance to the NATO Advanced Research Schools.

International Education Initiatives

International meeting in Europe/Asia

International policy discussions/collaborations with FPS and/or POPA.

International students and scholars are sometimes treated as commodities by some US colleagues to maintain the level of manpower in the US work force. I think it is a good idea to invite some high level physicists from other countries to discuss US science policies. It is good PR for USA and boost the self-esteem of all the international students and scholars. In this case, foreign scientists provide an international perspective without necessarily interfering with US policies per se.

Is it possible to have a joint program with the European Union? Programs of the European Union have led to great mobility of scientists within Europe.

It is not clear to me that it is the APS's role to provide these services.

It may be useful to start a program to help connect lesser well-known US universities and colleges to students abroad. Many foreign students are only aware of the big name universities and miss out on excellent opportunities at less famous places.

It would be good to keep track of foreign students studying in the US and their opportunities and desire to stay in the United States and their career opportunities in their home country. We seem to be in a situation of dynamic change with respect to foreign graduate students with implications for the health of US graduate education in Physics.

It would be interesting to see if a program could be developed, whereby US researchers could mentor, or play a part in, students graduating in emerging countries like Australia, Vietnam, etc. In this day and age of computer connections and teleconferences, this could be accomplished, for the most part, remotely.

It would help for there to be more travel grants available to promote conference attendance and the support of international collaborations. The APS could also help to lobby US funding agencies to be less rigid with regard to the support of non-US participants in research collaborations. It is difficult to promote international collaborations of the few-investigator variety when all participants must be at US institutions to receive support (e.g. summer salaries, sabbatical leave support, etc.). Politically, this will only work if such support is added on top of existing programs that support US scientists. Perhaps a joint lobbying effort with the EU equivalent of the APS would be a good start.

It would seem that developing countries have quite a bit of assistance in keeping the momentum of efforts from organizations like APS active. What about the underdeveloped countries? It would seem that more emphasis should be placed on these. Countries such as China and India are still classified as developing. It is clear however that they have quite a bit of physics infrastructure already. The pressing need then resides in the underdeveloped countries....they need the most help! 1. Assistance in the establishment of a "Physicist without Borders," where physicist can participate in solving pressing problems in underdeveloped countries. The actual funding for the research could be acquired through NSF, UN and the like. 2. Grants/experiments for up to date demonstration of physics to elementary and junior-high kids to boost greater interest in physics and how physics can improve the world particularly regarding energy and the environment at a younger age for underdeveloped countries. 3. Funds to help support Physics Olympiad type competitions locally in underdeveloped countries

Joint meetings

Joint memberships with foreign societies. There used to be a journal program with the IOP, for member prices, for example.

Let's try an international research experience for undergraduates and perhaps high school students, if it doesn't exist already.

Life is already too busy. Slow down, think! Daydream.

Long term (6 month) scholarships to work abroad. perhaps lobbying for such funding from congress.

more cooperation with AIP, IOP and EPS for sharing of access of journals thru scitation and prola, for discounts on conferences and meetings, with IAEA for discounts on conferences and meetings and access to publications. How about APS account for individual article purchases from these intitutions at a discount?

more news on science and society internationally

NATO, FULLBRIGHT,...

none I know of -- perhaps focused help to FSU countries would be good

None to China!

none, and the current ones should be scaled back

None, I think APS is doing a great job already.

none, there is enough to do in underdeveloped areas in the US. Have you been to Indian country in the US or to the deep south, or to any of the southwest areas outside the main cities. They are underdeveloped and worse than many third world countries.

Non-proliferation

Not familiar enough with alternative programs to make meaningful comment. Perhaps physicists already engaged in International collaborations could apply to APS for supplemental grants to pursue APS goals when abroad.

not sure. please review them, or --sorry i missed the discussion in aps news if it was there. (i only read printed news.)

NSF has several joint programs

Of course, this is all about money. If money were no problem, we should be sending students to international conference, APS fellows to give lectures in developing countries, and bringing individuals from developing nations to the US for research positions.

Opening branch areas where good universities are active. Example Qatar (TAMU) and Dubai.

Opportunities for scientists at mid-career and later seem more productive than for younger scientists.

Opportunities for US scientists to visit foreign countries for extended stay.

OSA has a program whereby Fellows of the OSA can apply for \$1500 for travel support to lecture in developing countries.

OSA offers grants to scientists to travel to and lecture in developing countries. Is this part of a larger APS policy? If not, this service could be of value. Of greater value could be grants to students from developing countries encouraging them to return to establish scientific programs there.

Other associations have international conferences abroad and have opportunities for scientists making presentations to apply for financial support for travel expenses.

other programs should be considered but I'm not directly involved with such organizations presently

Partial support for APS Fellows to travel to activities abroad. APS Fellows are obviously "good ambassadors" of US Physics. Making travel easier for them would go a long way toward establishing international collaborations.

Perhaps developing liaisons with undergraduate study abroad programs at U.S. colleges and universities on the one hand, and with potential foreign exchange institutions on the other, could be very productive of more internationally minded physicists. In the past, undergraduate physics majors often have been discouraged from study abroad because of the rigors of their curricula and their commitments to personally progressing rapidly in physics, which could be retarded by going abroad for an extended time.

Perhaps establish and/or expand visiting scientist programs with the European Physical Society, as well as with national physics associations in Asia and other parts of the world.

Perhaps some support for US physicists to work abroad for some time. At this point I think it is more important for US physicists to find out what is going on and what people are thinking about in the rest of the world than vice versa. The rest of the world has been paying close attention to what we do here in the US for at least 60 years now in the last 6 years (thanks Mr. Bush) the US has been increasingly ignoring what the rest of the world has been doing and thinking.

Perhaps travel support for new faculty.

Play a more active role in dealing with problems tied to physicists from "sensitive countries" and "terrorist supporting" countries. The issue is there are many people who have lived abroad for decades who by virtue of birth and/or citizenship are forbidden access to scientific meeting in the US. Many are permanent residents of the US.

Please see my answer to the previous question about what German does with the Humbolt and Max Plank Society Fellowships.

Possibly if the APS could manage to arrange some sort of reentry to the US, it would make it possible for physicists to go abroad for an extended period without risking their careers.

Postdoctoral fellowships to send Americans abroad.

Programs for physics and physical science instructors who teach teachers at the college and university level to also travel abroad to find out what is happening in physics and physical science education outside of the United States.

Programs with Latin America.

promoting electronic information connectivity.

Provide assistance for preparation of journal articles, perhaps through the retirees association

Provide for ways for undergraduates to experience periods of study abroad in physics.

Provide funds for young physicists from underdeveloped countries to attend relevant APS meetings (not tied to a presentation).

Provide matching funds for students and postdocs to participate in overseas conferences and workshops.

Providing funds for US scientists to travel to developing countries for scientific collaborations.

Quite frankly, I'm not well enough informed to make an intelligent suggestion. It seems to me after attending the March Meeting in Denver, that Physics is well "globalized". To me, the more important question would seem to be "how to get the majority of physicists on a more prosperous track". Given our current zeitgeist, one approach would be more imaginative media PR.

Research assistance. Collaboration.

Sabbatical support

See my answers to the previous question. I do not have any specific international programs that I would like to see APS become involved in, other than those in which APS is already involved, but if pressed I could recommend some Asian Laboratories who might like to see more involvement of our young US physicists and APS members in various fields of physics, particularly in solid state electronics and optoelectronics and solid state laser technology.

See previous note.

Short of becoming an international organization, I think APS is doing quite enough.

Should participate in international conferences.

Since physicists often end up in industrial research, teaching, and even finance it would be reasonable to have international programs that allow younger physicists to spend 6 months - year abroad engaged in science related activities that are not directly research oriented (like teaching math/science to children in third world countries or evaluating the environmental/economic impact of developing countries on the planet (technology questions)).

Small grants to retired scientists who aren't so famous to help foster better relations with the world.

Something like AAAS's Science on a Stick

Something like joining the EU postdoc exchange program.

Something like the Humbolt would be nice.

Strengthen relations with the European Physical Society and other physics-related societies.

Student/post doctoral travel awards to attend meetings outside of the US. Visiting scientist programs have also been important to my research group over the years.

Support for international visitors to the US from developing countries - e.g. sabbatical leaves in the US. It could run as a significantly larger version of the ITGAP.

Taking undergrads for 2-4 weeks in the summer to places such as CERN for intensive courses. These would be graded so that our students could receive course credit.

The APS should have editorial offices in Europe and Asia.

The best is to provide travel support for active foreign scientists to make presentations at APS conferences.

The Electrochemical Society has joint conferences with the Electrochemical Society of Japan. What about joint European-US physical society meetings, or similar things with India, SE Asia, etc?

The elimination of travel grants hurts a lot of small research groups to collaborate with internationally just when the global connections become more important in science. NSF is shortsighted to emphasize in large global connections. A lot of the international understanding comes from interactions between individual scientists. Small groups research as well as large collaborations are needed. I wish APS will study this issue and affect policies of the funding agencies.

The European consortia (on cold molecules, for example) I know have been fruitful and involve people from many European countries. This is for the funding agencies, not for APS, and I'm wary that a collective mentality is not always beneficial.

The fostering of partnerships between US colleges and universities and their counterparts in developing countries.

The IAEA for instance offers fellowships for students from developing nations to study and travel in the US. They also fund European and US scientists to travel to third world and developing countries to teach workshops and advise scientific programs.

The Japanese government has a semi-private 'promotion of science' agency. This group has been very influential in much of my work, by awarding postdoctoral fellowships and by providing funding for 'developing' countries co-workers to join our teams (Russia / China / India). The JSPS has a lot of money to work with.

The only other associations that I am familiar with, geochronologists in IUGS and chemists in IUPAC have Task Groups that involve international collaboration that partially fund scientists to participate in international problem solving.

The SPIE-the International Society for Optical Engineering has been very successful in holding conferences outside the US. I am not certain their model is best, but it does seem to work. However, being the "AMERICAN" Physical Society does somewhat define the society. I would suggest "encouraging and assisting" developing countries to establish their own Physical Society, and have a "joint cooperation" agreement, rather than expand APS activities outside the US. For over 30 years I have been associated with the International Congress on High Speed Photography and Photonics (recently changed to International Congress on High Speed Imaging and Photonics). This international organization was formed in the early-1950's, as a loose organization of scientists and engineers (including Nobel Laureate Physicists) that holds a Congress biennially rotating between Americas, Europe, or Asia. I would encourage the APS to do something like this with the European Physical Society and the Asian Physical Society.

There are enough programs but not enough support.

travel support for international meetings

Try to ease visa problems for foreign physicists visiting USA.

undergraduate liberal arts college studies abroad in physics

US-Japan cooperation research funds are an interesting model. This provides explicit support for joint projects and stays. It does encourage collaborative efforts across the Pacific in a very effective way, and can support small collaborative endeavors.

We don't need another program.

We should have closer relations with sister societies (joint meetings)

Well, of course I would like something in support of International Year of Astronomy for 2009, since TGG, FHP, and DAP did something (the speakers bureau, which has so far arranged about 160 talks) for WYP.

What's the difference between great physicists and average ones? We know so much, today our major challenge is to close the gap between what we know how to do and what we actually do. What is the science of getting physics to the "bedside", especially in the developing world? See <http://minnesota.publicradio.org/display/web/2007/05/03/midday2/> .

While at the Pacific Northwest National Lab, I founded and directed a program called "The Interfacial and Condensed Phase Chemical Physics Summer Research Institute." We covered travel and local housing expenses for early-career scientists to come to the lab for collaborative research with PNNL staff. The program was rather inexpensive, but highly productive and well received. I ran this as both a national and international program and imposed no citizenship requirements. If you are interested I can get you more information, you can also find more information at: www.pnl.gov/si/

With the growing internationalization of physics (decline of physics in US?), it is important for all US physicists to be more broadly exposed to the international community. There is a major problem with basic science and physics education in the US that must be addressed, somehow. We might learn from the leaders in other countries.

working with the Biophysical Societies world wide

Would like to see more interaction with those at the 'teaching' level -- I am always disappointed at the APS march meeting that few of the educational equipment vendors are present (vernier, pasco, educational innovations, arbor, etc.) -- and these people DO go to ACS meetings, as I learned from the meeting that was here in Chicago (though I think there is no "AACT" -- that's all rolled up into the division of chem. ed., within ACS)

Verbatim Comments

Question 19: *What other advice do you have about APS international programs?*

Students who earned bachelors in U.S.

affordable for developing countries

APS meetings should be held in different parts of the world. This will not only help advertise such a mage event it will also provide a temporary escape for American Physicists (especially graduate students) to explore the world.

are they only directed at developing nations? Or also developed ones, like Western Europe?

Can't think of anything now

Distribute the information more widely.

Encourage direct collaboration between research groups - have some kind of forum where people can meet and discuss ideas. Have a grant dedicated towards international collaborative research. Significantly reduce/eliminate monetary barriers (membership fee, subscription fee) for collaboration with physicists in developing countries.

Get more involvements in international programs.

Give more awards to renowned physicist abroad in research and education

Help us informing us about conferences, schools and activities abroad.

I appreciate the attention from APS society that is currently paid to developing country physicists.

I didn't know there is an APS international program.

International Programs should be launched in developing countries.

Keep attention to Asian countries.

Make everything free

Make grant available during meetings for international physics to have opportunities to interact with domestic physicists.

Maybe more fellowship for international student.

More benefits for international graduate students and very important, letting them know the benefits they can have

More communication with scientists in developing countries.

More contact to other Physics society in developing countries

More international conferences

More involvement with developing countries. More know-how flow to these countries.

Only after I know all about it.

Preparing financial support and participation on researches conducting on the foreign countries.

Provide a platform about information of graduate schools in US. It could be a forum where students and professors can interact.

See above

Send the message out.

Should be able to get known on the international panorama, this would need some advertising, but I am sure it would fetch us good results in the end.

Should be active and collaborative.

Some visa support.

Spread the word more! People mostly hear this on APS meetings but these things should be heard before these events take place. So may be an email to universities and ask them to distribute it will work better.

Support more students.

Support them financially to travel abroad

Support universities and research centers, propose and work on joint grants, making them more involved

The membership fee should be deducted according to individual student economic situation.

There is no visibility in fluid mechanics.

To broaden the view of APS in terms of collaboration with all countries in particular European countries and demonstrate the excellent research work conducted in the United States for scientific discussions.

To open more opportunities for exchange programs and international collaborations with other countries.

Recent entrants into workforce who earned bachelors in U.S.

APS must work also to involve African institutions and contribute to educate young African physicists.

Can we invite great scientists (there are many) from poor countries to come to APS meetings? (I mean, invite invite)

Distribution of more information of existing programs

For those who are not able to attend the meetings, the invited lecturers talks might be recorded and put online.

Hire a lawyer to look visa issues.

How about give some chance for young researchers to look around in some famous group, talking to them and making some connection.

If possible, to provide reduced conference fees for students and researcher working abroad. Considering the travel expenses and the limited budgets, participating to an APS conference most of the times is not feasible for international students

I'm actually not aware of any such program, if they exist, they are part of a parallel universe with mine

Inform members well

Invite more young scientists in APS meeting from India

It's important to organize special young International Scientists Programs and offer finance support for them to take part in it.

Keep giving the government and congress advices on the visa policy reformation to give both US scientists and international scientists more convenient on science purposed international travels.

Money for travel to students

More collaboration with Europeans

More international conferences.

More opportunities and funding for the international program as a whole.

More support for young scientists. In some developing countries, there are some very good scientists who can't prove that because they don't have enough facilities, and it will be more

helpful for them and for their countries to support them inside their countries instead of giving them grants for traveling abroad

No. I think the last one is very good.

One month exchange programs (during the summer) in your area of research abroad.

Put more effort in scientific exchange the Middle East

That would be great if APS could somehow help international students/researches to obtain US visa. This has become a serious problem preventing scientific communications.

The problem with young physicists is not being aware of resources that are available to them from various sources/agencies for a meaningful collaboration with scientists of developing countries. It will be of great help for people like us to know those various resources and here, APS can help in educating us. This can be done by flashing some news about the deadlines or the agencies where the resource can be obtained.

Traveling support and/or fee waiver for researchers/students from developing countries to attend the programs would be helpful and encouraging.

Experienced workforce who earned bachelors in U.S.

5 year strategy plans are useful. Sometimes it's not clear why APS is carrying out some programs instead of the US government.

Advertise international programs more

Advise US government to make it easy for young foreign physicists obtain US visa.

APS should be much more active on the international science. We do not participate as much as we could in other international venues and future planning groups

APS has been doing an excellent job on this.

APS meetings have become progressively more expensive to attend, costing typically about \$1500. Could this be reduced in any way?

APS needs to listen to the concerns and needs of scientists in the so called "Underdeveloped countries" let them tell us what is the best way to help them. This will expand enormously the reach and influence of the APS to the development of Science. We need scientists in all parts of the world to work in unison to arrest the effects of global climate changes, pollution, pandemic diseases. It is in our, the United State, interests to have a population keenly aware and concern about ecology, technology, SCIENCE.

APS should be pro-active in supporting foreign conferences such as physics conferences in developing parts of the world.

Arrive well prepared I was not for my stay in Japan. Could have done better. It took me a while to figure out how Japanese think and interact.

As I already wrote, be careful not to confuse the internationality of Physics as a discipline with blind heart-bleeding "liberalism". Do not finance "developing" countries just because they are on some list of such. There must be a clear reciprocity and SHORT-TERM (before the dictator of that "developing" country changes) benefit for the American Physics community.

As I said, encourage visitors programs in both directions... Secondly I would encourage exchange between the younger generation. Esp in Asia the travel budgets are monopolized by the seniors so it is important to help the younger folks...

Ask DOE-BES and NSF to promote international programs. By this I mean to set up programs or funds for international collaboration. Without money, nothing will fly.

Attraction to work in the US of international experts in different fields of technical and physical sciences. Advertisements of available jobs in academics and industries and visa support.

Be less US centric overall

Bring people from different countries together

Build stronger website, exchange info, etc.

Collaboration and cooperation

Continue making subsidizations of travel and membership available to international physicists.

Continue them

Continue them. They are really needed.

Continue those described previously

Continue to facilitate international exchanges between US and physicists from the developing world, and make such exchanges affordable. Advertise these exchanges more broadly.

Continue your efforts

Continued advocacy for a sane visa and immigration policy is essential.

Cut back

Dealing with physics is already a sensitive issue within the US. The topic is entangled with other subjects for instance relating to the functioning of industry like trade secrets or patents, to the nature of the topic like funded by the government and sensitive, and sometimes because of the

competition between scientists. APS should remember that it is American and should not embark on issues based on merely excitement for communication but consider moral and civic values that might not always stem from physics. Certainly there is a reward from scientists interaction all over the world but APS should not be fooled and exert prudence. Indeed there are troubles in the world.

Do more sponsorship in Africa. They desperately need it

DO more with Africa. Encourage participation of African born physicists in APS international activities.

Does the APS have any "diplomatic" relations with other physics societies abroad?

Don't know enough to have an informed opinion. See previous answers.

Don't spend all resources for developing countries. Pay attention to collaborations between US and Europe/Japan.

Efforts in the European Union (EU) to consolidate research and development efforts -- cf. CORDIS -- are somewhat reflected in the activities of the European Physical Society (EPS), namely to represent many different interests among people with greatly diverse backgrounds. The EPS could now function as a valuable partner to the APS in coordinating international programs. One recent event comes to mind: the International Physics Olympiad. There are surely other areas where collaboration could be beneficial.

Encourage longer term exchange programs, 6 months or longer

Encourage more distinguished physicists to give talks or lectures in developing countries. They don't have VISA problem :)

Exchange scholars/students programs. Possibly combining international RUE and exchange of mentors.

Facilitate visas for foreign scientists planning to carry out international collaborations in U.S.

Fix the visa problem

Form a truly international committee composed by professor of different nationalities

From time to time, short visits by those responsible for the APS international program to other country.

Get the word out!!!

Have a Director who is connected to scientists in other countries, not a politically connected director.

Have basic menus in other languages

Have joint meeting with the European counterpart on selected topics (astrophysics and condensed matter are examples)

I believe the state of the physics education in the US requires immediate attention

I do not any specifics, but I want APS to maintain or do more about helping physics community in developing countries.

I don't know enough about current programs.

I guess that it is better to let APS members know effectively and widely what kind of international programs are available.

I have to check APS international programs. I am familiar with Civilian Research Development Foundation (CRDF) for the Former Soviet Union and National Science Foundation (NSF), not with APS.

I haven't thought enough about the topic to 'advise': from what I read the APS has very competent, committed people involved in this activity. Sometimes I wish I'd be more active in this area because I have a long-standing interest in international development: in the early 1970s I went to Paraguay to teach physics, and my spouse worked at the World Bank. There are two completely different aspects to the question. One is cooperation with our peers, in the developed world (Europe, Japan, and a few individuals elsewhere), the other with physicists in developing countries. I feel for these people, but as a result of my own experiences I've become somewhat cynical: you can't do physics in the developing world, and I have my doubts about whether it's even advisable to try. Physics by itself is really a luxury, which you can afford if you have lots of money to spare for cultural activities: physics, music, literature, etc. Physics only pays for itself when it is coupled to an industry or the military, in any case some other paying proposition. Developing countries don't have the luxury to do physics. As a country, they should (I think) concentrate about what is useful for them, be that agriculture, chemistry (if they have mines or oil), whatever. You can also do physics if you are coupled to another place that pays for the work. Examples might be observatories in Chile, ionospheric work in Nigeria (because it's right below the equatorial electrojet), or other reasons why the work should be done there. And, on very rare occasions, you may have exceptional individuals coming out of the woodwork in developing countries. Cooperating with them is great, especially if you can get them money (both for salary, equipment, and students). In this comment I'm heavily influenced by my experience in Paraguay. There, the director of the physics institute was interested in nuclear physics. Being an important person politically he was able to get reasonably nice physics equipment paid for by Government funds, he got the United Nations to send 'experts' (I fell in that category even though I was too young and too naive to be an expert in anything), etc. But, by and large the students were not interested in physics. They studied it only because physics was needed for chemistry, and chemistry was needed to become a pharmacist and thence to become richer by selling imported aspirin (and other medicines). Also, their preparation was horribly deficient. I worked a lot with the sole student who was interested and capable. He ended up going to Brazil, where he had better opportunities. I hope he made it to the US. In this connection I was happy to see that a Paraguayan woman (whose name I forgot, of course: I always do) won a prize for her PhD at Fermilab, in some high energy physics topic. At the time I

wondered how she made it out. Was it connections? Did she study in Spain or Argentina or Mexico before coming to the US? I'll be happy to elaborate some more if you want. If so, let me know (pereira@speakeasy.net, 703 644 8419).

I like it

I think it is more important to make sure that scientists outside the US will have access to the newest journals.

I think that it would be a good idea to strengthen programs with South American countries, both for US based physicists and for South American physicists.

I think the APS does a good job in reaching out internationally. I wish our government agency did as well.

I think these programs are not only very important for physics in the US, but also more generally to educate young people that are likely to become part of the US leadership about respect and appreciation of other countries.

I think you are doing great with that respect.

I think, APS should extend its arms to help children in developing nation to get an opportunity to go to school and be able to read and write rather than being child slaves.

If possible, an interesting idea would be to offer fellowships to advanced graduate students and recent PH.D's from abroad to spend time in the US and, vice versa, for advanced graduate students and recent PH.D.'s from the US to spend time in leading research centers abroad.

Increase presence in other countries. Have conferences there. This helps collaborative work and exposure (for researchers in the US as well as those in the host countries.)

International collaboration is very important for particle physics experiments.

It is presently very difficult for scientists from certain countries and for young scientists to get visas, or if they get them, going through the application process is at times an unpleasant experience. For our own benefit this needs to change. We are losing brilliant minds to come to the US simply for these types of experiences. I would like to suggest the establishment of a fellowship program for students to come for short periods of time to do research in US.

It will be good to maintain a cooperative relationship with expatriate physics associations in the United States.

It would be nice if APS could team up with other associations in other countries to bring more young scientists from abroad to the US. US is a rich country and hence can support its people. The same cannot be said for countries in Africa, Asia, Central and South America.

Joint degree programs

Keep them going

Keep them going.

Keep up the excellent programs you have currently implemented.

Keep up the good work

Keep up the good work

Keep up the good work

Language should not be a reason for the rejection of publication and APS should provide language help to non-native English speaking community. Even a free language software can be provided to researchers to help them to check the language.

Look in before you look out

Make known and advertise what you have in terms of international programs and solicit advice from time to time. Both the EPS and the APS seem to me to be somewhat introverted and not cooperative. I know of no common conference or any other joint venture.

Many students from abroad seek employment opportunities in the US. From my personal experience there are geographical and communications gaps. As foreign students attend APS meetings, it could help to offer a session / additional evening meeting on what a U.S. C.V. should look like (emphasizing differences with C.V.s in other cultures) and maybe some orientation for foreign students on the post doctoral job market in the US (who, when).

May be involve associations like the ACIPA or the Chinese American physics group to serve as liaison

More advertising

More APS International Conferences in developing countries.

More research grants (like the German Von Lynen Humboldt fellowships) to bring foreign postdocs or send US postdocs (abroad).

Need to lobby US federal government organizations even more to expand international exchange programs for scientists.

No need to push this area-- it is automatic for physicists to collaborate if there is common interest.

Not enough is known about it. Communicate and advertise better and as said provide opportunities and support not only on the highest level.

Offer APS members from outside of USA and Western Europe a free international program membership. Solicit conceptual proposals on the practical ways to enrich international programs

and provide funding opportunities. Contemplate on how to help foreign members to return to their home country for extended periods to fund modern research schools with modern value system (e.g. mitigated corruption and merit based employment).

Perhaps an APS sponsored summer school for physicists from developing countries that is being held in the developing countries would be nice.

Physics is becoming increasingly international due, to a large extent, to the combination of decreasing budgets and increasingly larger and more complex proposed projects, that can not be undertaken by a single country. It is therefore imperative that APS adapts to this reality by continuing to expand to developing countries, by being inclusive, and supportive of international programs. One idea for APS might be to establish mutual agreements with corresponding Physical Societies in other countries that will ease the exchange of students and scientists, and will help establish international programs for the physics communities around the world.

Physics is international, act that way

Play it down focus it to where it is really close to what you do best.

Please do not close the APS journal to good science made at developing countries.

Please publicize them more! I am only aware of such programs as I am European, and so have more of an interest. More exposure of such programs to US physicists can only help broaden the minds and research focus of physicists in this country, please push these efforts ever more. Another carrot might be some type of grant/funding to help young US physicists visit workshops/conferences in other countries if funding from their institutions doesn't cover such visits. Could the APS provide some funds for this?

Program to support young physicists from other countries to participate workshop, conference or training program is very important for establishing the bridge between US and the other countries

Promote the existing programs via Physics Today, international conferences and the APS website

Sending graduate students abroad for 1-2 semesters, combined US-International thesis advisors...

Sending outstanding US scientists to developing countries is very important.

Seriousness of the global climate change has not been widely appreciated in most part of Asia. After all physicists are the first ones pointing out the heat trapping effect of GHGs. Can APS organize an international program with the goal of trying to amend the situation and help clarify some of the confusion such as the GHG vs the sun (sun's UV and magnetic field)?

Should provide financial support for young physicist to travel to Asia and Europe for either APS or non-APS meetings for their own future opportunities in those regions.

Some advertisement or promotional reports in well-read journals/newspapers.

Sometimes, conferences take place in developing countries. It might be possible to arrange for outstanding US participants to present colloquia at nearby universities during their travel. That would benefit the local students/teachers/researchers. Again, just a thought...

Sponsor joint meetings/workshops/summer schools with the foreign counterparts of APS.

Sponsoring small focus meetings

Strengthen them!

Strengthening remote accessibility for collaborative efforts, even in the light of escalated cyber security rules and demands in the US.

Stress importance of scientific integrity, researchers from some countries tend to submit the same paper or very similar papers to different journals short courses on how to organize and write research papers

Stronger lobbying / case-by-case assistance to ensure quick resolving of visa delay/denial issues and support for the time of the processing delays. Particularly improve the support for the scientists and students currently studying or employed in the US but having to renew visas while temporarily out of the country. Such delays may not only be very frustrating, but also give huge blow to the research activity and plain financial situation of the person who suffers it. A move for establishing a (federally-, NSF- or even APS-funded) program that would somehow compensate scientists/students/workers experiencing long unexpected (and truly unjustified) delays at visa issuing posts due to "technology alert" checks would have a tremendous effect in terms of improving international communication and collaboration. Improving homeland security is good but it should not be done at a cost of scientists' suffering.

Summer research projects.

That it is a nice initiative that needs to be expanded.

The key question is whether APS views itself as an international society that just happens to be based in the US, or as a national society. I'd recommend the former.

These are very important.

They should be reciprocal.

They still are too timid! Need to be broadened and expanded.

To invite students (NOT SUPERVISORS) for conferences in the USA

To provide them with more funds

To sponsor and arrange specific visits and tours to foreign facilities.

Travel grant program for developing countries mentioned above is not sufficiently transparent. Criteria of selection look absolutely arbitrary and not understandable. If the application is rejected you do not have any idea of the reason and therefore cannot improve at the next attempt.

Try to be more active in supporting science in developing countries

We need to be the most competitive in the world. The more scientific international programs we organize and get involved the better.

Work closer with institutions such as the ICTP, Scientists without borders, etc.

Students who earned bachelors abroad

Again, my unfamiliarity with these programs leaves me unable to comment pro or con.

As in all things, the more dialogue the better. Increasing communication and partnerships with other countries leads to better programs, more informed members, and more rapid scientific progress. I'm not familiar enough with what programs are out there to add any specific advice, though.

Be open minded, that's about it. This is the physics climate of the 50's and 60's we are in a global economy, whether we like it or not.

Better advertising! I have trouble finding these things in the new letters or on the website.

Change the APS name.

Continue with the effort.

Develop them for US students to go abroad.

Give the money to deserving people to do research in the US

Given the increasingly collaborative environment of physics research (e.g. ITER) we must work to strengthen our international ties as much as possible.

I am very pleased that you offer low cost and complementary benefits to physicists in developing countries.

I appreciate this being brought up as an issue, and I don't think I'm qualified to give you advice.

I think that the APS is doing a good job with the international programs but there is always room for improvement.

I think the biggest problem facing international collaboration is visas and I don't think you can do anything about that.

Increase them. The global scientific community is coalescing and the next 25 years will (I predict) see the necessity of boundaries and borders being dropped. It takes familiarity with working in such an international environment to use it to its full potential, and when better to start than with young physicists. In addition, I think the US's support of such programs is poor compared to several other countries. This may be because of a long history of the best science being done only within the borders of this country. But with the globalization of science, this is no longer true.

Keep up the good work :o)

Make it easier to apply

Make sure that expansion of international programs are aimed at bettering physics, not simply because it sounds good to "be more international".

Maybe help with learning new languages?

No advice, sorry. I consider international cooperation and programs that foster it to be quite important mostly, I expect the APS to "do useful things" according to the advice of people who know quite a lot more about this than I do, and so I personally have no opinions on the details.

Other than I think there should be more opportunities for young scientists, I have not contributing advice.

Perhaps what is needed most is a way of stimulating interest in physics that is being done abroad.

Programs to encourage women to continue higher studies as physicists and also awareness about gender discrimination which is prevalent even in a country as developed as the US. Can't imagine how discouraged women in a less open environment are.

Since I didn't know anything about them I would suggest trying to raise member awareness. I'd also suggest that specific members be asked to post fliers or posters and that an e-mail not be sent out since people usually don't read them.

They should play a more central role for students.

Too unfamiliar to answer meaningfully

Unfortunately I do not have enough familiarity with the APS International programs to give good advice.

When considering Post-Doc opportunities, I was told that it is difficult to do a Post-Doc abroad and then to return to the US for a faculty position. The difficulty was attributed to being 'out of the loop' while abroad. It would seem that the Post-Doc years offer the best opportunity to build

international ties, except for this obstacle. I am not sure what could be done to improve this situation.

Recent entrants into workforce who earned bachelors abroad

APS is the de-facto world physics organization, and that's ok. It makes sense for the APS to offer some financial assistance to physicists and institutions in lower cost -- and therefore lower resource -- countries. However, the APS should be rational in assessing whether the groups and individuals it wishes to subsidize have enough local support to sustain an active and productive physics program. If there is a lack of minimum local support to sustain independent physics activities, it hardly makes sense for the APS to subsidize travel, conference attendance and membership fees -- what will they report on / share, and what will they do with what they learn? It would be easy to let APS international programs that facilitate information exchange (a good thing) to devolve into scientific welfare, which I think would be inappropriate.

Emphasis inclusiveness!

Give the edge to the Americans

I don't know enough about them to comment.

I had ever heard of many of these programs more information is needed

I have left my comments in the response (open-ended) to question 17.

I think it is nice that it seems APS has a mission of providing services to people in developing countries. The difference in currency makes travel from certain places almost impossible.

I want to emphasize that bringing non-US physicists to the US is essential, but so too is reciprocating those visits.

I went to the meeting at the March meeting about scientific collaboration in the Middle East. I think such programs that allow scientist to work together despite political differences are invaluable to a) scientific progress in such regions b) close contact between two people that might translate to other positive interactions. I commend APS for its current efforts.

I wish I knew more about them when I was a graduate student.

In my point of view APS doing good over all, APS more focusing home and still good to attract international scientist too.

The programs could be advertised in a more targeted manner. For example, if there is an opportunity for young APS members, you could e-mail them about it.

We just really need to assist scientists in developing countries in whatever ways possible.

Experienced workforce who earned bachelors abroad

A fairly realistic concern is nuclear security. Physicists made the bomb in WWII. An emphasis upon addressing current problems would be important in moderating these fears, e.g., safe drinking water, etc.

A large problem that has discouraged me from attending international meetings is the lower quality -- more politics in picking invited speakers. When I lived in Scandinavia I worked against it with little success. So the best opportunities are for young people to actually work long enough in foreign institute that it feels responsible for the individual's career development. Not easy!

A yearly summary in Physics Today, of the statistics of physics in various countries in terms of numbers of physicists, major initiatives, types of organizations, by region, with the level of typical support.

Adopt one major global problem to focus on, and bring physics to bear.

Advertise it better.

Advertise them!

Advertise these programs to a wider audience.

Advice and tools for scientists in developing countries to effectively increase science awareness in their communities, strengthening the knowledge base and enthusiasm of neighbors

Anything that builds common understanding is essential in our rapidly globalizing world.

Apparently we're doing a lot I didn't know about I am hardly the person to give advice. But I think it is a good thing.

APS does not have much of international participation and inviting international program in each APS sector annually is the best way.

APS doesn't need to spend money on international programs in this age of cheap travel and the internet.

APS international programs may provide some statistics on which physicists or countries took advantage of the current programs.

APS should cosponsor conferences abroad.

APS should play an active role in helping to establish physical societies in Africa, esp. sub-Saharan countries, possibly by linking up with programs funded by NSF. Europe seems to be doing much more than the US.

APS sponsorship awards for grad students or post-docs to work in foreign labs specifically to study and function technically in a foreign language, would be very useful.

APS, keep trying. It is to be hoped that eventually our incompetent authorities will learn that this country cannot dominate every international effort in which it is involved (scientific, diplomatic, economic)-- then international collaboration with the US may become more meaningful and better for the participants all around.

As the 'A' in APS indicates, APS should be primarily for American physicists.

Ask international programs how the APS can increase its involvement overseas.

At least keep doing what we are doing. Broaden it when possible.

Be careful who you invite here -- get good people, not just people looking for free rides to USA

Be more visible

Better advertising!

Better dissemination of the information on its programs and how to apply

Canada is not a continent.

Can't think of anything specific, except that I think APS should keep and expand their International Programs. We will all get a lot out of the continued international exchange of ideas and research in many fields of physics.

CISA should be leading in this effort - I am afraid that the role of CISA has been eviscerated.

Consider grants for undergraduate, graduate, postdoc and young faculty in particular.

Consider partnering with federal agencies in their international programs. Harold Stolberg at the NSF would support it.

Consider sending US scientists abroad, not just bringing their scientists here. Arrange or help to arrange travel abroad for US scientists.

Continue to encourage them

Continue to promulgate, particularly at Unit Meetings

Continue to seek ways to encourage and expand the network of international scientists, especially from developing countries, through meaningful collaborations in research and education.

Continue to show respect for them the next great idea is just as likely to come from a person from a developing nation as it is to come from one with an "advanced" educational system.

Develop them further - very very important

Developing countries need engineers not physicists.

Distribute information on opportunities in the US for physicists.

Do not help physicists in terrorist/anti-US countries.

Do not participate with China or places where US technology is not protected or observed as intellectual property.

Does the APS lobby the federal government to ease travel restrictions on scientists?

Don't be politically correct and attack Israel.

Don't let political pressures (eg, relations with Iran) affect APS policy.

Don't overdo it. Travel should be driven by the needs of particular research programs (and funded by those programs).

Don't spend ALL your efforts abroad. There is a lot of young talent in the US that in some ways are not much better off than those abroad.

Don't try to do it all. Do what you can do well.

Enable the participation of faculty from smaller physics departments, where they are often lack colleagues. Big departments can monopolize APS activities, but this isn't good for US physics as a whole.

Encourage funding agencies to truly support (financially) international collaboration.

Encouragement

Establish a unit within APS that can collect funds and identify qualified candidates and assist them in making connections with suitable foreign institutions. The US never looks so good as when view from abroad after a year there.

Establish more interactions with physical societies in other countries.

Excellent approach, but could use greater funding.

Expand them.

Focus on support travel by American physicists (U.S. nationals or people committed to working in the U.S.) to Europe and Asia where significant physics research is conducted. Travel to third world nations is of little benefit to furthering the research of American physicists.

Focus on underdeveloped countries. They need help the most.

Funds can be made to bring international scholars to US, in addition to sending US students aboard.

Good idea, work more awareness into the physics community

Great job! Keep up the good work!

Having not much knowledge (or interest at this time) myself about such programs, my advice is probably not worth much. But should I ever become interested, I should think I would know how to contact Universities and industrial organizations in my areas of interest in the geographical regions of interest for me, and make my own opportunities.

Help African Universities...except for Egypt and A. Africa, the continent is going nowhere in physics!

Help in keeping the research facilities in the US (National Labs) more open. (Difficult to invite people due to travel rest. Visa, entry to the Labs etc.)

I am not familiar with APS international programs.

I am not trying to be flippant here, but meaningful participation in such programs seems to require fluency in foreign languages, so pushing for that in American schools might be good.

I believe it is very important to establish collaborations between scientists in third world countries and those in the US. The US has many advanced research facilities but often doesn't have enough researchers. If the APS could help connect good foreign researchers with US research facilities it would be advantageous of both the US and the third world scientists.

I believe that international networks among professionals help promote peace and global harmony. I am a new APS member and have very little exposure to the world of physics professionals, so I can not provide any help in this area.

I believe that the APS needs to broaden its support for international collaborations beyond those areas which have become its tradition loci.

I don't have any advice, but it is excellent that the APS is addressing the fact that physics is an international discipline!

I don't have much direct experience with APS international programs.

I have been disappointed at the minimal quota which APS provides for awarding APS Fellowships to foreign physicists, who are members of the APS and who have a long track record of excellence and of fostering US-international collaboration. This to me is a shame.

I haven't given it any thought before taking this survey, so I am in no position to give advice to those who have clearly thought a lot about this topic.

I really admire and support your programs for reduced cost/free journals and financial help for non-US physicists. I think that is *exceedingly* important.

I really believe that foreign physicists need information on technology development. Good fundamental sciences are being done around the globe. But not all physicists have the opportunity to translate research results into useful technologies.

I think an emphasis on bringing APS resources to scientists in second and third world countries is appropriate

I think APS has a laudable international outreach program and would encourage the organization to continue and expand this outreach as the officers of APS judge important.

I think APS should keep up the support of the CISA and CIFS committees as well as the forum of FIP.

I think continuing to pressure our government to welcome foreign scientists is worth doing.

I think it is important for APS to keep track of the predicted balance between needs and availability of physicists, and productively work with the government so that when a shortage is predicted steps can be taken to facilitate the hiring of foreign nationals. If a long term shortage is predicted, a parallel effort must be made to also increase the number of US physicists.

I think it is important to offer free online access to journals and travel grants for cooperation with scientists in developing countries, as the APS is already doing.

I think that a special effort be made to bring Latin American physicists into international projects that are now being planned.

I think that American programs are far more important than international programs.

I think the APS international programs are quite positive, but the APS could push federal agencies and private foundations to have proactive programs to support international experience for US educated researchers.

I think the FIP should be a much more active forum than it is now. CISA is an excellent body for formulating policy and FIP should be more active in converting policy to action.

I think they are a great idea.

I think this is one area where APS can have an effect. Our efforts to promote exchange and to work for freedom of scientists (and others!) are among the most important things the APS does.

I was not at all familiar with the programs that APS has to support physicists from developing countries but they sound like an excellent idea, and presumably they do not cost APS much (as I would guess that many people from these countries might not join APS, subscribe to journals, etc. if they were not available at greatly reduced cost), so I would encourage APS to continue to

do these programs, and find whatever other ways there are to make the resources of APS available to scientists in less wealthy countries.

I wonder if there shouldn't be some additional outreach to scientists in developed countries. I would always recommend to a physicist in another country that they should first join their own national physics society, and then consider joining the APS. Even in developed countries the cost of a full APS membership may be too high for many to consider a second affiliation. A couple of things to consider: 1. a reduced cost membership class for overseas physicist who are members in their own national physics organization. Possibly with reciprocal offerings to US physicists who want to join an overseas organization. 2. Allow members of overseas physics societies to join APS units, without having to join the APS. This might come in the form of a special class of membership that does not count toward unit counts, nor involvement in the governance of the APS as a whole, but would allow the APS units to broaden the appeal of their annual meetings.

I would like to have reduced membership to European or South American or Asian physics societies.

I'd like to see as many as possible.

I'm not in a position to make broad comments, even though I strongly support international interchange among physicists. APS always has been progressive with this, but changing times and circumstances may demand further initiatives.

In general, I think international programs are increasingly important. The IEEE has recognized that, but of course it doesn't have American in its title, so it can endeavor to be a worldwide organization. I'm not sure any organization is equivalent in physics.

Increase their visibility/availability to students and faculty at a wider range of institutions (e.g., four-year and community colleges)

Increased sponsorship of low budget collaborative soft matter experiment and theory.

International access to information and programs is more important than international membership.

International exposure benefits both APS and US physicists.

It is important to have international programs to bring in students and visiting professors to our US institutions to learn. Hopefully it is a two way street - they learn from us and we learn something from them. Many of these people stay and get hired on in our programs where we need the expertise. However it is probably more important that we have a very much stronger domestic science program in the USA to promote physics education and research to ensure that we can rely on ourselves for the expertise needed in the future. What percentage of the graduate students in physics (or engineering) in US universities are from the US? - What is the trend in the last 10 years or so? Above all else, the US needs to remain the leader in technology.

It would be great to recruit more students from South America to visit US.

It would be nice to "advertise" this more at division meetings. I will look at it now, but was not aware of what APS offered in terms of international programs.

It would be particularly valuable to try to build more physics-based relationships with Muslim countries.

It would be useful to have one of our large meetings, e.g., March, jointly with the German Physical Society and/or the European Physical Society. Keep up the good work, and thanks!

Just keep being sure opportunities for people to meet. I don't enough experience to have concrete suggestions.

Keep doing what works and also try some new things.

Keep it up.

Keep it up.

Keep it up.

Keep it up. They are very important.

Keep on doing what you're doing already. APS has done a fine job so far.

Keep some going.

Keep the high moral ground, and don't cooperate with the U.S. government's efforts to build a wall around the U.S.

Keep the simple with easy access to information about them.

Keep them simple and of high quality.

Keep them up, most research is truly global today.

Keep them up. We also need help allowing foreign student/scientists to stay in the US. We invest in students and scientists from many countries but we have difficulties continuing to use them in the US with the current restrictions on visas. This is particularly harmful in rapidly developing fields where expertise is exceeding limited.

Keep up the good work.

Keep up the great work!

Large global companies (such as mine) internally arrange for international internships whereby students and recent grads come to work at our US facilities for 6-12 months. Perhaps APS could become a talent-hub to assist these global companies, who are paying the bills but might benefit by outsourcing the talent search to APS which might result in a deeper, wider cross-section of applicants.

Let's make this a very high priority in our budgets.

Lobby to stop the irrational "homeland security" practices that restrict democracy, science, and the international exchange of ideas.

Look for opportunities in Mexico and China.

Make journals available over the web and on paper for third world countries free, or at a very low cost, and provide free membership, as you do. Please advertise these programs well so that people know they are available.

Make sure that there are some programs with real impact for hiring US physicists in the US (especially discriminated against women & minorities) before the APS worries about physicists in third world countries. A foreign male of any age already has a better chance at a US physics job than I do, being an older American woman.

Many faculty, myself included, maybe unaware of the complete spectrum of international programs offered by APS. I probably would not search for such information on a website. But, if there was better communication between physics departments and APS or the Office of Sponsored Programs and APS, more faculty might be made aware.

Measure international participation in APS and Divisional meetings, and track trends. Worry whether we are ignoring emergent areas (such as China) because of our own age, close-mindedness, stultification, etc.

Money spread around to the have-nots even in small amounts can make a significant difference over the long-term, i.e., seeding change.

More collaboration with Trieste, which has, in my view, the most successful program for physicists from developing countries, would be a good way to increase impact, profit from their extensive experience and extend the reach of both efforts.

More cooperation promotes more scientific dialog, more trust and less financial burden.

More financial support for student exchanges.

More funding for research and participation in cultural activities, such as traveling, learning languages...

More involvement.

More outreach to Latin America in particular

More publicity, please.

More publicity of these programs

More publicity!

My university serves primarily undergraduates there is a major push developing to increase undergrad participation in study abroad programs. Most of these that are available are not physics related, or even science related. You might want to consider ways to support or encourage international programs with significant physics content for undergrads.

Need and equal program for congress

Need to be communicated better

No advice. I think foreign interactions are very important. My own work has been greatly enriched by travel and international collaborations. I've often told people that I feel closer to several colleagues on other continents than to my neighbors on our street.

None, but consider any such programs a good idea.

None, just not really familiar with them.

None, specifically, but I would just say that opportunity to travel and study abroad would be valuable for our citizens.

None. I think the APS is doing a sufficient amount of effort in this are for now.

None: The APS basically does great.

Not familiar with these programs

Not to get too involved due to security issues

Nothing very specific, but I would encourage their increase with respect to cooperative work with investigators in Mexico.

One could consider merging some of the journals between the US and Europe.

One year fellowships for visiting SENIOR scientists would be very useful.

Other governments will replace the US programs to the exclusion of the US. The APS is too small to compete with other governments.

Participation in international programs important if US scientist want to be involved in new leading facilities. A number come to mind. US dropped the idea of funding basic research some time ago.

People count, organizations do not. Individual contacts are important, organizational contacts are generally political hubris.

Perhaps international programs, or alternately "scientific globalization", could be used to enhance public enthusiasm for the support of science.

Perhaps make yourself more visible to young US scientist.

Physicists at small domestic colleges are under-served by APS perhaps that would be a better use of funds than the international program, which seems to only benefit larger institutions.

Physicists working at smaller US colleges are often even MORE disadvantaged than those working in third world countries as far as journal access and travel are concerned. Some third world countries such as China and India have relatively well-funded science programs. I think it's about time they stood on their feet. It might be better to channel grants to the less developed countries in Africa and Asia, or have two different levels of support. In addition, I believe discounts on electronic subscriptions to APS journals for libraries at primarily undergraduate colleges in the US should be way higher than they are. If UG colleges paid about 25% of what the research institutions do, they might be able to afford it. As it is now, most UG colleges are canceling many APS subscriptions, cutting off their researchers from the mainstream even more than they have been.

Promoting partnership with CAP and conferences in Canada targeting international topical conferences such as NEUTRINO 2008, etc.

Provide faculty and student short visits grants of three months to work in unique labs in a foreign country.

Publicize more

Publicize them in a prominent place on the website or in APS news.

Push for more government sponsored international exchanges of scientists.

Push them hard... I have always found international programs (and scientists) to be of high interest and of great value.

Reimburse those who have already gone. Don't provide grants. Then you know they really wanted to go.

Relaxed visa and entrance requirements for young physicists who want to come to the US. More opportunities for special fellowships to US institutions.

Remember these are facilitators, not ends in themselves. The ends they should be supporting are stated in the APS constitution.

Renewable energy is the biggest global challenge. It would be great if APS could a special program on worldwide renewable energy.

Sending "us there" is probably the more cost efficient mechanism for formal/semi-formal education. Bringing "there here" and making sure they go back is probably better for getting new high-power communities started in specific places (specific examples I know are from astronomy, but presumably not all that different). 15c: Depends on what else would be done with the money! FHP started funding overseas speakers from one-time donations a few years ago and has had fairly good luck, but we might well try to tap into B&M pocket in the future.

Should not just focus on "young" physicists but physicists of all ages.

Since international travel is expensive, matching grants are the best alternative - some of the burden is on the traveler, but the burden is lighter.

Sorry, I don't have any. I've been retired since 2004.

Spotlight individuals in third world research

Stay away from the International Linear Collider.

Stay focused on improving the programs.

Stay out of international politics. Let IOP handle it.

Stick to your knitting.

Stick with primary missions.

Substance over appearance

Support imprisoned scientists in occupied Palestine

Support international conferences, esp. those to be held in developing countries. Establish opportunities for physics undergraduate to travel abroad for research experience (it's very easy for a humanist to do this, but opportunities for UG to do research as a year abroad is rare).

Thank you for asking, but your question is not sufficiently specific for me to provide an informed answer.

Thanks for the survey

The advanced countries plus China have a lot of interchanges. India is close to it, but my perception is that few non Indians visit there. Latin America, particularly Brazil, Argentina are ok, but need some help. The real problems are the Islamic countries, although there is a wide spectrum, and even worse, the sub Saharan African countries. These places are tremendously challenging, for many reasons. Most people would say that having physicists visit is not the crucial problem, but it might help a bit.

The AMERICAN PS should not support international programs. The US already supports everybody else through UN programs. Keep the bucks here.

The APS is not an international funding agency. The APS should concentrate on issues which enhance US researchers.

The main subject should always be the betterment of man and how to achieve this through science without the usage of military dominance. The best use of the international program would be diffusing the potential global destruction of man due to crack pots who think they

found the 'genie'. EDUCATION, EDUCATION, etc. Study the AEC, DOD, DOE records of Japan, and maybe, other countries would realize the dangers of following the path of nuclear options.

The physics community and therefore APS should attempt to help those foreign physicists who are persecuted.

The US visa problems are forcing all international conferences to site outside the US. If this keeps up, there will not be any major conferences in the US.

There are large international efforts forming to provide computational resources in the form of computational "GRIDS" that has the potential to change how we use computers to achieve our physics goals. There could be opportunities to facilitate this effort within the APS international programs.

There are legitimate concerns about technology transfer to unfriendly countries.

There is a need for student travel awards for U.S. based students for conferences abroad.

There should be columns in APS publications highlighting physics news of other countries, including those from developing and under-developing countries.

These are important programs, not only for promoting good science, but also for promoting greater understanding. The international awareness of scientists has always been out in front of the international awareness of the wider society. It's important that we stay in front.

They are certainly necessary and positive.

They are good, keep them.

They probably need to be better advertised. I am not sure I know anyone who has actually used them, and I travel a fair amount.

They're important, and they should be supported, but keep in mind that the US taxpayer may eventually revolt against "works progress administration"-style funding of the rest of the world's scientists when US citizens are being trained only for jobs at WalMart and McDonalds...

Think about reaching K-12 teachers through college and university faculty, but provide experiences and training to higher education faculty so that what they teach and how they teach is effective and relevant to our pre-college teachers and students. It would appear that many countries do a better job than the U.S. in science education, so fund those who teach teachers to find out what is going right in these countries to see how they might reform their courses.

This should be a very high priority.

To realize that research programs outside of the US will be growing extremely rapidly in number and importance. So there must be a similarly growing supply of US funding to participate in these overseas programs--and to realize that this rapidly increasing overseas work will also invite additional agency and congressional overview and questions, and to be prepared for such.

Travel grants for short visits (two weeks - two months) of scientists from the former Soviet block, outside of meetings, are still a real need. In general, the international efforts of APS have been very important and are appreciated internationally.

Travel of US scientists outside the USA and travel of others into the USA are both somewhat important, but I don't know the proper priority to place on these kinds of things.

Try to bring as many physicists of all ages to the US for increased interaction with US colleagues. Do all you can to help repair the damaged image of the US that has been generated in the past seven years.

Very important -- please keep trying.

We benefit from having foreign students come work with us as postdoctoral fellow supported (or partially supported) by their home countries (e.g. Humboldt fellows etc.). You may already have it, but a summary of such programs would be helpful.

We have to fix ITAR issues.

We need to set up exchange programs that can rebuild our scientific community after the coming disaster, as Germany did after World War I.

When they involve travel, it should be by ship: airplanes emit too much CO₂.

While it is important to ensure that physicists in developing countries are encouraged to work with US researchers, it is more important to provide opportunities for physicists at non-research I institutions (such as regional institutions) to participate in collaborations. Many US physicists are not reaching their full potential due to lack of support by their institution and by the profession.

Why should the APS use it's funding to develop the capacity of other nations to compete with the US?

Work on the administrative things to make regular interactions easier -- this is also the hardest to accomplish since it involves Congress etc

Would be great to get more high-quality US undergrad students abroad for a summer or semester.