Building Thriving Undergraduate Physics Programs
Physics Department Chairs Conference
June 6, 2015

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What we’ve been doing for years . . .
   . . . Curricular reform

What we’ve done lately . . .
   . . . Look carefully at student needs

On the cheap . . .
   . . . Getting information to students
Colgate University

700 students per graduating class

1990: 6 physics majors per year
2003: 12 physics majors
2016: 24 physics majors
Curricular Reform

Introductory course: Atoms and Waves

First year: Both semesters are team-taught
Two lectures and two recitations per week
Extensive support available

Junior/senior courses taught in alternate years

All students complete a senior research project.
Give students resources

Build community:
Student lounge, SPS, peer tutoring

Introduce to the field: Seminars, meet speakers, research opportunities

Introduce to larger physics community: conferences, meetings

Faculty/student events: lunches, happy hours, picnics, town hall meetings
Get information to students

Each fall . . . Invite students to participate
First year . . . Course requirements, physics teaching certificate
Second year . . . Grad school, summer research
Upper level . . . Preparing for GREs, asking for recommendations
On the web . . . Major requirements, sample schedules
course offering schedule faculty research
Seminars . . . Speakers from industry & speakers without PhDs, careers for physicists
Resources outside Colgate . . . APS/SPS/AAPT webinars
Alumni . . . Facebook, LinkedIn, internal listings

Choosing Your Courses
When you're planning your courses, it can be challenging to know how best to tailor your schedule to plan for future graduate studies, or even to spend a semester abroad. Learn more about choosing courses for an emphasis of study in physics as well as programs like study abroad and the 3-2 program:
- Choosing your courses: Sample schedules
- Schedule of course offerings: Many courses are offered only in alternate years, so see when the courses you need are available
- Off-campus study: Information for students who wish to study off campus or abroad.
- Major emphases: Learn how you can target your major to particular specialties.
- Calculus requirements: Determine what calculus courses you will need for your major.
- Frequently asked questions about choosing courses
- Table of course names and numbers: Many courses were renamed and renumbered in 2012. See what changed.

Curricular Innovation at Colgate
We take physics and astronomy education to the highest level with our robust, challenging, and engaging curriculum. Learn more about our curricular design.

Summer Courses
We do not offer summer courses, although many students do stay on campus during the summer to conduct research with a faculty adviser. You may, however, take a summer course at a different institution and transfer the credit to your Colgate transcript. Learn more about taking summer courses in physics and astronomy.