

Physics Teacher Education Coalition (PhysTEC)

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PhysTEC Goals

- Produce more and better-prepared science teachers who are committed to student-centered, inquiry-based, hands-on teaching.
- Produce lasting collaboration between physics and education departments.
- Create and maintain mentoring and induction programs for PhysTEC graduates.

PhysTEC Vision

- A self-sustaining Coalition will improve teacher preparation in a growing number of institutions. The result will be a new generation of secondary and elementary teachers that will enable students to experience physics and physical science as an engaging and exciting activity.

PhysTEC Leadership

- APS
- AIP
- AAPT
- PhysTEC Leadership Council

PhysTEC Funding

- NSF
- Dept. of Education--FIPSE
- APS Capital Campaign

PhysTEC Institutions

- NSF-Funded
 - Ball State University (Muncie, IN)
 - University of Arkansas (Fayetteville, AK)
 - University of Arizona (Tucson, AZ)
 - Western Michigan University (Kalamazoo, MI)
 - Xavier University (New Orleans, LA)

PhysTEC Institutions

- APS Capital Campaign-Funded
 - California Polytechnic State University (San Luis Obispo, CA)
 - Towson University (Towson, MD)
 - University of Colorado, Boulder

PhysTEC Components

- A long-term, substantive *collaboration* among the physics department, the department of education, and the local schools.
- A *Teacher-in-Residence* (TIR) program that provides for a master teacher to become a full-time participant in program activities.
- The *redesign of physics courses* based on results from physics education research.

PhysTEC Components

- The *redesign of elementary and secondary science methods courses* with an emphasis on inquiry-based teaching and learning.
- The *establishment of a mentoring program* to support novice science teachers.
- The participation of physics faculty in the *improvement and expansion of school experiences* for preservice teachers.

PhysTEC Progress

- Substantive collaboration between physics and education faculty
 - Course development
 - Team teaching
 - New certification programs

PhysTEC Progress

- Physics TIR
 - Average of 25 years of teaching experience
 - Team-teach courses, supervise field experiences
 - Collaborate on course revisions
 - Outreach to faculty and TAs

PhysTEC Progress

- Redesign of physics courses
 - Increase interactive engagement
 - Improve labs
 - Improve TA preparation
 - New course development

PhysTEC Progress

- Redesign of science methods courses
 - Focus on inquiry-based methods
 - Improvement of field experiences
 - Involvement of Physics TIR

PhysTEC Progress

- Establishment of mentoring program
 - Outgoing TIRs become mentors
 - Mentoring through classroom visits, on-line discussions, video-conferencing
 - Financial support of beginning teachers

PhysTEC Progress

- Improvement of school experiences
 - Curriculum development for field experiences
 - Revision of student teacher supervision

PhysTEC

- Take-home message
 - Teacher preparation is complex undertaking.
 - Teacher preparation is key role for physics departments.
 - Teacher preparation involves mentoring from preservice through novice teacher.

PhysTEC

**For more information on PhysTEC,
please go to www.phystec.org.**