

Indiana State University

2006 - 2007 Academic Annual Report

Department of Physics

Vision Statement

[View/Modify Vision](#)

Below is your vision statement from previous years. Please take this opportunity to review it and if necessary update it.

Effective July 1, 2007, the Department of Physics will be consolidating with the Department of Chemistry to form a new Department of Chemistry and Physics. The new department will formulate its own vision statement.

Year in Review

Accomplishments

As you have heard, increasing public awareness of Indiana State University's accomplishments is crucial to building student enrollment, influencing policy makers, and developing a place of pre-eminence in the Midwest. What do you consider to be your department's accomplishments for the 2006-2007 year that will contribute to this effort? [Please list in priority order and limit to no more than 8.]

1. Dr. Guoping Zhang received a large federal grant (\$150,000) from the Department of Energy. 2. Dr. Eric Preston received a Promising Scholar award. He is the second faculty in the department to receive this award, after Dr. Zhang received it last year (2006).

Research and Scholarship

What is your assessment of accomplishments in the area of research and scholarship that is focused primarily on contributions to practice and discipline-based scholarship? Are you satisfied overall? In which areas do you feel your department does particularly well? In which areas do you feel your department needs to improve?

During the year in review Physics faculty had 6 publications in professional, peer-reviewed journals and several research presentations at national conferences and at other universities. Physics faculty have been active in research with undergraduate students. Two Physics majors presented their research projects at national and regional conferences and at ISU Research Showcase. These activities are indicative of a sustained high level of research productivity by physics faculty.

Grants, Contracts & Off Campus Professional Service

What is your assessment of accomplishments in the area of grants, contracts, and off campus professional service? Are you satisfied overall? In which areas do you feel your department does particularly well? In which areas do you feel your department needs to improve?

Dr. Guoping Zhang received a large federal grant (\$150,000) from the Department of Energy. Dr. Eric Preston received a Promising Scholar award. He is the second faculty in the department to receive this award, after Dr. Zhang received it last year (2006). Physics faculty have served as reviewers for international and regional journals and for physics and astronomy textbooks. Dr. Preston served as a consultant for ITT Industries-Advanced Engineering and Sciences (Colorado Spring, Colorado).

Teaching

We would like to highlight innovative approaches to teaching. Has your department developed any pedagogies or practices you'd like to share with us? Please describe briefly.

Dr. West continues to use the PRS system in his introductory physics lectures. Dr. French has introduced online homework with question assistance in her Physics 105 lectures. This system enables students to get online help with problem solving, while earning points for submitting completed assignments, which are graded instantly, online.

Course Scheduling/Enrollment Management

How is the department making sure that students are able to get the classes they need to graduate in a timely manner?

Due to a relatively low number of physics majors, the department has had to offer upper level physics courses to a small number of students at a time in order to ensure that the physics majors get the required courses to graduate in a timely manner.

Outreach

What are the outreach opportunities for your discipline? (non-traditional modes of delivery and timing, etc)

We continue to reach out to high school Physics teachers and have been in touch with those who are department alumni.

Assessment

Please share your stated student learning outcomes.

The physics curriculum has a two-tiered structure. The first two years are common to all physics majors, minors and physics teaching majors and consist of introductions to Newtonian mechanics, electricity and magnetism and a two-semester introduction to modern physics using single-variable calculus. The second tier consists of foundational advanced courses and electives using multivariable vector calculus, matrix methods and differential equations.

Strategic Initiatives

Community Engagement I

Please summarize your faculty's efforts in community engagement this year.

Dr. Swez has served as second vice-president and newsletter editor for the Izaak Walton Leagues - Clinton chapter. He also directed a Science Fair project for Otter Creek Middle School. He was also the Director of the Physics Summer Honors program. Dr. West served as the ISU representative on at the Central States Universities, Inc. Physics faculty have given lectures/presentations for the ISU 21st Century Scholars program as well as the Discover ISU program.

Experiential Learning

What is your vision for experiential learning in your department?

Almost all physics majors have been involved in research projects directed by physics faculty. Two of the students presented their research projects at national and regional meetings and at ISU Research Showcase.

Fundraising Activities

What steps have you taken to support fundraising activities in your department? How can your efforts be supported?

A department newsletter is sent every year to all physics alumni.