DEAN A. ZOLLMAN

A. PROFESSIONAL PREPARATION

Institution	Major/Area	Degree & Year
Indiana University, Bloomington	Physics	B.S., 1964
Indiana University, Bloomington	Physics	M.S., 1965
University of Maryland, College Park	Theoretical Nuclear Physics	Ph.D., 1970

B. APPOINTMENTS

2001 - 2011	William & Joan Porter Professor, Department of Physics, Kansas State University
2001 - 2011	Head, Department of Physics, Kansas State University
2001 -	Distinguished University Professor, Kansas State University
1996 -	Distinguished University Teaching Scholar, Kansas State University
1998, 2007	Guest Professor, Institute for Science Education, Kiel, Germany
1997	Big 12 Faculty Fellow, University of Colorado
1989, 2006	Guest Professor, University of Munich
1982 – 2001	Professor, Kansas State University
1981 – 1982	Visiting Associate Professor and NSF Faculty Fellow, University of Utah
1977 – 1982	Associate Professor, Kansas State University
1975 – 1977	Staff Physicist, American Association of Physics Teachers
1970 – 1977	Assistant Professor, Kansas State University

C. PRODUCTS

I. FIVE CLOSELY RELATED PRODUCTS

1. NRC Committee on Undergraduate Physics Education Research and Implementation, Adapting to a Changing World – Challenges and Opportunities in Undergraduate Physics Education (NRC, 2013)
2. Zdeslav Hrepic, Dean A. Zollman and N. Sanjay Rebello, "Comparing Students' and Experts' Understanding of the Content of a Lecture," *Journal of Science Education and Technology*, 16, 213-224 (2007).
3. Dean Zollman, "Challenges of Preparing Physics Teachers in the United States," *Proceedings of Didaktik der Physik, Deutsche Physikalische Gesellschaft, Frühjahrstagung*, Regensburg (2007).
4. Dean Zollman, "Research Activities in the Education of Teachers," in Linda R. Kauffman and Janet Stocks (Eds.) *Reinvigorating the Undergraduate Experience: Successful Models Supported by NSF's AIRE/RAIRE Program*, Council on Undergraduate Research (2004).
5. J. D. Spears and Dean Zollman "Orientation for the New Teaching Assistant-A Laboratory-Based Program," *American Journal of Physics* ***42***, 1062-1066 (1974). [link]

II. FIVE OTHER SIGNIFICANT PRODUCTS

1. Zdeslav Hrepic, Dean A. Zollman and N. Sanjay Rebello, "Identifying Students' Mental Models of Sound Propagation: The Role of Conceptual Blending in Understanding Conceptual Change," *Phys. Rev. ST Phys. Educ. Res.* Vol. 6. 020101 (2010). [link]
2. Dyan L. McBride, D.A. Zollman and N. Sanjay Rebello, "Method for Analyzing Students' Utilization of Prior Physics Learning in New Contexts," *Phys. Rev. ST Phys. Educ. Res*. 6. 020101 (2010). [link]
3. Hrepic, Z., Rebello, N. S., & Zollman, D. A. "Remedying Shortcomings of Lecture-Based Physics Instruction through Pen-Based, Wireless Computing and DyKnow Software." In N. H. Salas & D. D. Peyton (Eds.), *Reading: Assessment, Comprehension and Teaching* (pp. 97-129): Nova Science Publishers, 2009, reprinted in *Journal of Education Research, 3*(1/2), 161-190 (2009).
4. *Visual Quantum Mechanics,* Ztek Multimedia, Lexington, KY, (2003)
5. Dean Zollman, "Do They Just Sit There? Reflections on Helping Students Learn Physics," Millikan Medal Lecture, *American Journal of Physics* ***64***(2) 113-119 (1996). [link]

D. SYNERGISTIC ACTIVITIES

- Professor Zollman led the effort that resulted in KSU receiving an NSF Recognition Award for Integrating Research and Education (RAIRE). A major portion of this award was related to involving pre- and in-service teachers in research-related activities.
- Dr. Zollman is a member of the National Research Council's Committee on Undergraduate Physics Education Research and Implementation which produced the report listed as item 1 under related products.

- Dr. Zollman collaborated with faculty at the Carnegie-Mellon Entertainment Technology Center to create and interactive Web site on physics pedagogy for in-service teachers.
- The National Study of Undergraduate Education in Science involved a collaboration with faculty in the sciences and science education a two other universities.
- The Visual Quantum Mechanics project, under Dean Zollman's direction created instructional materials for high school students, non-science college students, and biology and physics majors. The overall goal was to utilize a variety of instructional techniques to make contemporary physics accessible to a wide range of students.
- Dr. Zollman served for 9 years as the secretary of the International Commission for Physics and is a co-coordinator of PHYSWARE, an effort to introduce active learning to universities in developing countries.
- Professor Zollman's research and development work in physics education and teacher education has received numerous awards including CASE National Professor of the Year sponsored by the Carnegie Foundation for the Advancement of Teaching.
- Teaching during past 3 years
    - Concepts of Physics, a one-semester course for elementary education majors. The course serves about 120 students each fall semester. The teaching method is based on Piaget's model of intellectual development and uses a variation on the learning cycle developed by Karplus.
    - Contemporary Physics, a one-semester course in 20th and 21st Century physics for non-majors and non-science students, including secondary education majors whose major emphasis is science but not physics..

E. COLLABORATORS & OTHER AFFILIATIONS

i. Collaborators

Ton Ellermeijer, Univ. of Amsterdam
Manfred Euler, IPN, Kiel, Germany
Pratibha Jolly, University of Delhi
N. Sanjay Rebello, Kansas State University
Scott Stevens, Carnegie-Mellon University
Hartmut Wiesner, LMU, Munich

ii. Graduate Advisors

Manoj Banerjee, Deceased & Carl Levinson, Deceased

iii. Thesis Advisor & Post-Doctoral Scholar Mentor

Graduate Students:
12 MS – James Baughman (retired), Sadiah Yusof (HS Teacher, Malaysia), Jerry Hester (Clemson), David Iverson (Green Mountain High School), Roger Key (Fresno State Univ.), Lawrence Escalada (Univ. of Northern Iowa),David Johnson (New Orleans Public Schools), Gerald Pilj (FAA), Ridvan Unal (Alfyon Kocatepe), Albena Dimitrov (New Mexico Public Schools), Gabi Mihalcea (DePaul Univ.), Zdeslav Hrepic (Columbus State Univ.),

16 Ph.D. (including 7 women & 1 Hispanic-American), John Brungardt (Bishop of Dodge City, KS), Jaafar Jantan (Univ. Teknology MARA), Teresa Larkin (American Univ.), Heidi Mauk Wainscott (US Air Force Academy), Lawrence Escalada (Univ. of Northern Iowa), Kastro Hamed (Full Sail Univ.), Seunghee Lee (Pellissippi State Comm. College), Alice Churukian (Univ. of North Carolina), Waldemar Axmann (Wichita State Univ.), Alicia Allbaugh (Jet Propulsion Lab), Zdeslav Hrepic (Columbus State Univ.), Bijaya Aryal (Univ. of Minnesota Rochester), Spartak Kalita (Sevastopol National Univ. Ukraine), Dyan Jones (Mercyhurst College), Mojgan Matloob-Haghanikar (Cal Polytechnic) and Christopher Nakamura (Saginaw Valley State Univ.)

Post Doctorate: 10 (including 2 women) – S. Raj Chaudhury (Auburn Univ.), Robert Grabhorn (State of Washington), N. Sanjay Rebello (Kansas State Univ.), Michael Thoresen (Fusion Energy League), Lei Bao (Ohio State Univ.), Kirsten Hogg (HS Teacher, Australia), Salomon Itza-Ortiz (Univ. of the Ozarks), Brian Adrian (Geil Marketing), Ashok Mody (Mithibai College, India), and Sytil Murphy (Shepherd Univ.)