

DENNIS W. SUNAL

Professor of Science Education, University of Alabama

Professional Preparation

University of Michigan	Bachelor of Science	1964 - Physics
University of Michigan	Master of Science	1970 - Interdisciplinary Science
University of Michigan	Doctor of Philosophy	1973 - Science Education
University of Michigan	Teacher Certification	<u>Elementary</u> - K-6 <u>Secondary</u> - physics, mathematics chemistry, physical & earth science

Appointments

1989–Present	Professor, Science Education, University of Alabama
1987, 1997	Visiting Professor, University of London, Kings College
1981 – 1982	Fulbright Senior Professor, Bayero University, Nigeria
1978 – 1989	Associate/Full Professor, Science Education, West Virginia University
1973 – 1978	Assistant Professor, Science Education, University of Maryland
1970 – 1973	Lecturer, Physics Department, Eastern Michigan University
1961 – 1970	Secondary and elementary public school teacher, Ann Arbor Public Schools Adult Education Instructor, Planetarium Director - University of Michigan Field Museum

Publications

(a) Five publications most closely related to the proposed project (lifetime total: over 200 articles, chapters, and books)

- D. Sunal, E. Wright, and C. Sundberg, Eds., *The impact of the laboratory and technology on learning and teaching science K-16*. Greenwich, CT: Information Age Publishing. (2008)
- B. Burke, D. Sunal, and G. Ogletree, *Women in Undergraduate Physics, Chemistry, Mathematics, and Computer Science: How Can We Sustain Them Through Graduation?* National Association for Research in Science Teaching (NARST). Baltimore, MD (April 2008).
- D. Sunal and E. Wright, Eds., *The impact of state and national standards on K-12 science teaching* (Information Age Publishing, Greenwich, CT, 2006).
- D. Sunal, E. Wright, and J. Day, Eds., *Reform in undergraduate science teaching for the 21st century* (Information Age Publishing, Greenwich, CT 2004).
- D. W. Sunal and C. S. Sunal, *Teaching elementary and middle school science*, (Merrill Prentice Hall, Columbus, OH, 2003).

(b) Five other significant publications (lifetime total: over 200 articles, chapters, and books)

- R. Krummel, D. Sunal, and C. Sunal, "Helping students reconstruct conceptions of thermodynamics: Energy and heat. *Science Activities*, **44**(3): 106-112 (2007).
- D. W. Sunal and E. L. Wright, "Teacher perceptions of science standards in K-12 classrooms: An Alabama case study", in D. Sunal and E. Wright, Eds., *The impact of state and national standards on K-12 science teaching* (Information Age Publishing, Greenwich, CT 2006), pp.123-152.
- D. Sunal, "Innovative pedagogy for meaningful learning in undergraduate science", in D. Sunal, E. Wright, and J. Day, Eds., *Research in Science Education: Reform in Undergraduate Science Teaching for the 21st Century* (Information Age Publishing, Greenwich, CT, 2004) pp. 85-122.
- D. Sunal, C. Sunal, M. Odell, C. Sundberg, and K. Whitaker, "Research supported best practices for developing courses for online learning", *Journal of Interactive Online Learning*, **2**(2) (2003).
- C. Sunal, C. Karr, C. Smith, and D. Sunal, "Modeling scientific systems using three artificial intelligence concepts", *Journal of College Science Teaching* (2003).

(iv) Synergistic Activities

Co-PI for *Science in Action*, In-service teacher professional development linking science learning to community service learning, Corporation for National and Community Service (CNCS), 2008-2011.

PI for *Reform in Undergraduate Science Courses Serving Pre-service Teachers: Evaluation of a Faculty Professional Development Model* (National Study of Education in Undergraduate Science - NSEUS) study of the effects of reformed science classes on undergraduate science achievement and teachers implementation of science in classrooms, National Science Foundation, 2006-2011.

PI for *Pre-Service Science Teacher Education for Hispanic English Language Learners in the Southeast (SHELLS)*, (National conference on setting a research agenda for undergraduate pre-service programs) National Science Foundation, 2007-2009.

PI for *Physical Science in the 21st Century: Improving Teacher Quality and Mastery of Content (PS-21)*; (Enhancement of knowledge and pedagogy of in-service teachers of physical science) Alabama Commission on Higher Education, 2007-2008.

Co-PI for *Alabama Energy Education Program*, Alabama Department of Economic and Community Affairs (ADECA), 2007 – 2008.

(v) Collaborators & Other Affiliations

(a) Collaborators and Co-Editors

Emmett Wright, Kansas State University; Michael Odell, University of Texas at Tyler; Cynthia Sunal, Michael Freeman, and Kevin Whittaker, University of Alabama; Ed Walton and Barbara Burke, California Polytechnic University, Pomona; Jeanelle Day, Eastern Connecticut State University; Glenda Ogletree, Armstrong Atlantic University; Lynn Jones, University of Texas;

(b) Graduate and Postdoctoral Advisors: Burton Voss, University of Michigan

(c) Thesis Advisor and Postgraduate-Scholar Sponsor

Lea Accalogoun; Daniel Burch; Carol Dawson; Jeannelle Day; Lynn Jones Eaton; Linda Ewing; Ken Gafford; David Hedgepeth; Kimberley Staples; Joanne Stephens; Cheryl Sundberg; Carolyn Pistorius; Glenda Ogletree.

(i) Post doctoral associates (na)

(ii) Other professionals

(iii) Students (research assistants): Donna Turner, Erika Steele