

DEBORAH L. HANUSCIN

Assistant Professor of Science Education and Physics
MU Science Education Center
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EDUCATION

- 2004 Ph.D., Curriculum and Instruction. Indiana University (Bloomington, IN)
Area of emphasis: Physics Education

Dissertation: *Learning the 'Grammar of Science': The Influence of a Physical Science Content Course on K-8 Teachers' Understandings of the Nature of Science.*
Major Professor: Dr. Valarie L. Akerson.
- 2003-4 Visiting graduate student, Physics Education Group. University of Washington (Seattle, WA)
- 2001 M.S., Science and Environmental Education. Indiana University (Bloomington, IN)
- 1995 B.S., Elementary Education. Florida State University (Tallahassee, FL)

PROFESSIONAL EXPERIENCE

- 2004-present Assistant Professor, jointly appointed in the Department of Learning, Teaching, & Curriculum and Department of Physics & Astronomy, University of Missouri (Columbia, MO)

MU Graduate Faculty (2004)
Doctoral Faculty, Department of Learning Teaching, & Curriculum (2007)
- 2003-2004 Coordinator, Saturday Science QUEST Program, Indiana University School of Education (Bloomington, IN)
- 2002-2003 Associate Instructor, Department of Physics & Astronomy, Indiana University (Bloomington, IN)
- 1999-2002 Associate Instructor, Department of Curriculum & Instruction, Indiana University (Bloomington, IN)
- 2000-2002 Developer, Inquiry Learning Forum, Center for Research on Learning and Technology, Indiana University (Bloomington, IN) <http://ilf.crlt.indiana.edu/>
- 2000-2001 Informal Science Educator, Wonderlab Museum of Science, Health, and Technology (Bloomington, IN)
- 2000 Curriculum Developer, Indiana Science Curriculum Frameworks Project, Center for Innovation in Assessment, Indiana University (Bloomington, IN)
- 1999 Informal Science Educator, Odyssey Science Center (Tallahassee, FL)
- 1996-1999 Classroom Teacher, Grade 4. Killearn Lakes Elementary (Tallahassee, FL)
- 1995-1996 Classroom Teacher, Grades 4-5. Caroline Brevard Elementary (Tallahassee, FL)

HONORS AND AWARDS

Teaching Honors

- 2008 Recognized Mentor, MU Honors Convocation, by graduates Sara Stellmach, Nicole Adles, Kristen Neuner, Jill Harris
- 2008 Nominee, Provost's Outstanding Junior Faculty Teaching Award
- 2007 College of Education Undergraduate Instructor of the Year, COE Student Council
- 2007 Outstanding Faculty Member, MU Greek Council
- 2007 Recognized Mentor, MU Honors Convocation, by graduate Jessica Jay
- 2007 Nominee, Gold Chalk Award, MU Graduate Professional Council
- 2007 Nominee, Provost's Outstanding Junior Faculty Teaching Award
- 2007 "High Flyer" Recognition for Outstanding Course Evaluations, COE
- 2006 Recognized Mentor, MU Honors Convocation, by graduate Julie Haesemeier
- 2006 Nominee, MU Award for Excellence in Education
- 2006 Nominee, Undergraduate Instructor of the Year, COE Student Council
- 2006 "High Flyer" Recognition for Outstanding Course Evaluations, COE
- 2005 Nominee, Undergraduate Instructor of the Year, COE Student Council
- 2005 "High Flyer" Recognition for Outstanding Course Evaluations, COE
- 2001 Outstanding Associate Instructor, Indiana University School of Education
- 1998-1999 Campus Teacher of the Year, Killearn Lakes Elementary, Tallahassee, FL
- 1997 Seed Pearl Award for Excellence in Science Teaching, Leon Association for Science Teaching, Tallahassee FL
- 1991 Chappie James Most Promising Teacher Award, Florida Department of Education

Research Honors

- 2007 Selected to participate in the AERA Division K Early Career Forum
- 2005 Finalist, NARST Outstanding Paper Award
- 2005 Selected to participate in the AERA Division K New Faculty Forum
- 2004 Dissertation Fellowship, University Graduate School, Indiana University
- 2003 Daisy and Vivien Jones Graduate Research Fellowship, Indiana University School of Education

TEACHING

Undergraduate

University of Missouri-Columbia (2004-present)

PHYSICS 2330: Exploring Principles of Physics (4cr.) W05, W06, F07

PHYSICS 4950: Undergraduate Research in Physics (3cr.) W05

TDP 4280/7280: Teaching Science in Elementary Schools (3cr.) F04, W05, F05, F06, W07, W08

TDP 4085: Problems in Teacher Development/Field Studies (3cr.) W08

Indiana University-Bloomington (1999- 2003)

Q202: Physical Science for Elementary Teachers (3cr.) F02, W03

E328: Science in the Elementary School (3cr.) F99, F00(2), W01, F01, W02

M201: Early Field Experience (2cr.) W01

E321: Science for Early Childhood (3cr.) W00(2)

Graduate

University of Missouri-Columbia (2004-present)

PHYSCS 7085: Problems in Physics (3 cr.) F06, F07

C&I 8710: The Nature of Science in Science Teaching (3 cr.) F06

C&I 8720: Advanced Teaching of Science in Elementary Schools (3cr.) S05, S06, S07

C&I 8717: Teaching, Learning, and Research in Middle and Sec. Science (3 cr.) S06, S07

C&I 8941: Internship in Science Education (3cr.) W05, S05, F05, W06, F06, W07, F07

C&I 8085: Problems in Curriculum & Instruction (Independent Study) (3cr.) S05, S07, W08

Indiana University-Bloomington (2003)

E548: Advanced Methods of Teaching Elementary Science (3cr.) F03

Q514: Workshop in Junior High School/Middle School Science (3cr.) S01

Outreach

Mathematics and Science Institute for Beginning Teachers, Missouri Center for Mathematics and Science Teacher Education (Co-Instructor, July 2005 & 2006)

Summer Kids' Inquiry Program in Science (SKIPS), MU Science Education Center (Coordinator, Summer 2005-2007)

COMMITTEE MEMBERSHIPS & ADVISING

PhD Committees

Tina Varma, Curriculum & Instruction (Elementary Education) graduated: 05/07

I-Chun Tsai, School of Information Science & Learning Technologies

Kristen Hutchins, Curriculum & Instruction (Science Education)

Michele Lee, Curriculum & Instruction (Science Education)

Mark Gagnon, Curriculum & Instruction (Science Education)

Cathy Wissehr, Curriculum & Instruction (Science Education)

*Zeynep Kaymaz, Curriculum & Instruction (Science Education)

(*Co-Advisor with Patricia Friedrichsen)

Tina Roberts, Curriculum & Instruction (Science Education)

Master's Student Advisees

Brian Hostetler, M. Ed. Science Education (2006-)
Terri Neu, M. Ed. Science Education (2006-2008)
Layla Alafaireet, M.Ed. MU Fellows Program (2007-2008)
Brigitte Dodds, M.Ed. MU Fellows Program (2007-2008)
Jessica Hughes, M.Ed. MU Fellows Program (2007-2008)
Desiree' Lenz, M.Ed. MU Fellows Program (2007-2008)
Ja-Ronika Luter, M.Ed. MU Fellows Program (2007-2008)
Amber Martin, M.Ed. MU Fellows Program (2007-2008)
Heather Rice, M.Ed. MU Fellows Program (2007-2008)
Alexandria Valvero, M.Ed. MU Fellows Program (2007-2008)
Ashley Wallace, M.Ed. MU Fellows Program (2007-2008)
Julie Haesemeier, M.Ed. MU Fellows Program (2006-2007)
Elizabeth Lewman, M.Ed. MU Fellows Program (2006-2007)
Laura Schuler, M.Ed. MU Fellows Program (2006-2007)
Kathryn Barry, M.Ed. MU Fellows Program (2006-2007)
Erin Rose, M.Ed. MU Fellows Program (2006-2007)
Heather West, M.Ed. MU Fellows Program (2006-2007)
Cari Cain, M.Ed. MU Fellows Program (2006-2007)
Katy Medenis, M.Ed. MU Fellows Program (2006-2007)
Aleshea Ingram, M.Ed. MU Fellows Program (2005-2006)
Heather Nowack, M.Ed. MU Fellows Program (2005-2006)

Undergraduate Students

Advisor to 27 Elementary Education Majors

REFEREED JOURNAL ARTICLES (14)

- Abell, S. K., Rogers, M. P., Hanuscin, D. L., Lee, M. H., & Gagnon, M. J. (in press) Preparing the next generation of science teacher educators: A model for developing PCK for teaching science teachers. *Journal of Science Teacher Education*.
- Varma, T., & Hanuscin, D. (in press) Pre-service elementary teachers' field experiences in classrooms led by science specialists. *Journal of Science Teacher Education*.
- Hanuscin, D. and Lee, M. H. (2008). Using the learning cycle as a model for teaching the learning cycle to preservice elementary teachers. *Journal of Elementary Science Education, 20(2)*, 51-66.
- Tucker, S. A., Hanuscin, D., & Bearnes, C. J. (2008) Igniting girls' interest in chemistry. *Science, 319(5870)*, 1621-1622.
- Hanuscin, D. (2007) The use of specialized laboratory facilities for science in elementary schools: A call for research. *Journal of Elementary Science Education, 19(2)*, 59-64.
- Taub, H. and Hanuscin, D. (2007) Writing scheme teaches science to non-scientists. *Physics Education, 42*, 562-564.
- Hanuscin, D., Richard, M., Chandrasekhar, M., Corman, A., & Lapilli, C. (2007) Collaborative action research to improve classroom assessment in an introductory physics course for teachers. *Journal of Physics Teacher Education Online, 4(2)*, 16-20.

- Akerson, V.L., & Hanuscin, D. (2007) Teaching the nature of science through inquiry: Results of a three-year professional development program. *Journal of Research in Science Teaching*, 44(5), 653-680. [cited by: 3] *Most downloaded article in JRST 2007
- Hanuscin, D., & Musikul, K. (2007) School's IN for summer: An innovative field experience for elementary science methods. *Journal of Elementary Science Education*, 19(1), 57-68.
- Hanuscin, D., Phillipson-Mower, T., & Akerson, V.L. (2006) Integrating nature of science instruction into a physical science content course for teachers: NOS views of teaching assistants. *Science Education*, 90(5), 912-935.
- Hanuscin, D. (2004). A workshop approach: Instructional strategies for working within the constraints of field experiences in elementary science. *Journal of Elementary Science Education*, 16(1), 1-8. [cited by 1]
- Hanuscin, D. (2002). Environmental mis-education? Addressing the criticisms of environmental education. *The Hoosier Science Teacher*, 26(4), 100-105.
- Hanuscin, D. (2002). Names and claims: Is it science or spin? *Science Scope*, 25(6), 36-38. [cited by: 1]
- Reiff, R. & Hanuscin, D. (2002). The iron (Fe) scientist. *Science Scope*, 25(8), 40.

INVITED COLUMNS IN REFEREED JOURNALS (1)

- Hanuscin, D. & Lee, M. H. (in press). Mentoring New Teachers. Perspectives: Research and tips to support science education. *Science and Children*.
- Hanuscin, D., & Park-Rogers, M. (2008). Learning to observe and infer. Perspectives: Research and tips to support science education. *Science and Children*, v(i), 56-57.

BOOKS AND CHAPTERS (4)

- Hanuscin, D. (in press) The case of the Seidnac: What is a species? For N. Lederman & J. Lederman (Eds.). *Activities for teaching the nature of science*. Arlington, VA: NSTA Press.
- Hanuscin, D. (2007). The use of specialized facilities for laboratory science instruction in elementary schools. In E. Wright, D. W. Sunal, & C. W. Sundberg (Eds.) *Research in science education: The impact of the laboratory and technology on k-12 science learning and teaching*
- Akerson, V. L., & Hanuscin, D. (2005). A collaborative endeavor to teach the nature of scientific inquiry: There's more to science than meets the "I." In R. A. Yager (Ed.) (p. 1-12). *Exemplary science: Best practices in professional development*. NSTA Press: Arlington.
- Rooney, M., & Hanuscin D. (2005) 'Re-inventing' science instruction: Inquiry-based instruction in a 5th/6th grade classroom. In R. A. Yager (Ed.) (pp. 173-180). *Exemplary science: Best Practices in Science Teaching Today/ Grades 5-8*. NSTA Press: Arlington, VA.

EDUCATIONAL MATERIALS

- Hanuscin, D. (2001). "Rock Cycle Activities" *Indiana Geological Survey* Available: <http://igs.indiana.edu/Geology/rocks/rockcycleactivities/index.cfm>
- Hanuscin, D. (2001). "Misconceptions in Science" Available: <http://www.indiana.edu/~w505a/studwork/deborah/>
- Hanuscin, D., Rhea, M., & Campbell, S. (2006). "Teaching Science through Inquiry- It's Elementary" Online professional development course developed through Missouri eLearning for Educators. <http://www.elearningmo.org/>

SCHOLARLY WORK SUBMITTED

- Hanuscin, D., Lee, M. H., & Akerson, V. L. (under review). Elementary teachers' pedagogical content knowledge for teaching the nature of science: An examination of teachers who are effective in improving their students' views. Submitted to the *Journal of Research in Science Teaching*.
- Hanuscin, D., & Lee, M. H. (under review) The impact of multiple versus single-course interventions on preservice elementary teachers views of the nature of science. Submitted to the *Journal of Research in Science Teaching*.
- Taub, H. and Hanuscin, D. (under review) Writing to learn: a method to implement a "narrow-but-deep" approach to teaching introductory physics. *American Journal of Physics*.
- Tsai, I. & Hanuscin, D. (under review). Hammering a nail with a saw: The constraints of "one-size-fits-all" technology in supporting online communities of science teachers. Submitted to *Journal of Science Education & Technology*.
- Hanuscin, D., Pareja, A., & Phillipson-Mower, T. (under review). Integrating nature of science instruction into a physical science content course for elementary teachers: Enhancing efforts of teacher education programs? Submitted to *Science Education*.
- Yilmaz, O., Topcu, M., & Hanuscin, D. (under review) A cross cultural study of pre-service elementary teachers' epistemological beliefs and gender effect. Submitted to *Educational Research and Evaluation*.

SCHOLARLY WORK IN PROGRESS

- Abell, S. K., Appleton, K., & Hanuscin, D. (in progress) *Designing the elementary science methods course*. Taylor & Francis.
- Hanuscin, D. (in progress) *Respect for evidence or respect for authority? Classroom culture and the nature of science*.
- Friedrichsen, P., Hanuscin, D., & Hutchins, K. (in progress) *Will I teach evolution? A multiple case study of prospective biology teachers*.
- Hanuscin, D., & Friedrichsen, P. (in progress) *Scientific literacy: A gap in understanding or a gap in the syllabus?*

EDITORIAL AND REVIEW WORK

- Editorial Board Member (appointed): *Journal of Research on Science Teaching* (2008-2010)
- Manuscript Reviewer: *Science Education* (2007-present)
- Manuscript Reviewer: *International Journal of Science Education*. (2004-present)
- Manuscript Reviewer: *Journal of Research on Science Teaching*. (2002-present)
- Proposal Reviewer, Strand 13: *History, Philosophy, and Sociology of Science*. 2008 Annual Meeting of the National Association for Research on Science Teaching, Baltimore, MD.
- Proposal Reviewer, Strand 13: *History, Philosophy, and Sociology of Science*. 2007 Annual Meeting of the National Association for Research on Science Teaching, New Orleans, LA.

Proposal Reviewer, Strand 2: *Science Learning: Contexts, Characteristics and Interactions*. 2007 Annual Meeting of the National Association for Research on Science Teaching, New Orleans, LA.

Proposal Reviewer, Strand 8: *History, Philosophy, & Epistemology*. 2006 Annual Meeting of the National Association for Research on Science Teaching, San Francisco, CA.

Proposal Reviewer: 2006 Annual Meeting of the Association for Science Teacher Education, Portland, OR.

Proposal Reviewer, Strand 2: *Classroom Context & Learner Characteristics*. 2005 Annual Meeting of the National Association for Research on Science Teaching, Dallas, Texas.

Proposal Reviewer: 2005 Annual Meeting of the Association for the Education of Teachers of Science, Colorado Springs, CO.

Content Area Consultant: *The Hoosier Science Teacher* (THST) The official journal of the Hoosier Association of Science Teachers, Inc. (2003-2004)

Proposal Reviewer, Strand 2: *Classroom Context & Learner Characteristics*. 2004 Annual Meeting of the National Association for Research on Science Teaching, Vancouver, BC.

Proposal Reviewer, Strand 8: *History, Philosophy, & Epistemology*. 2004 Annual Meeting of the National Association for Research on Science Teaching, Vancouver, BC.

Proposal Reviewer, Strand 2: *Classroom Context and Learner Characteristics*. 2003 Annual Meeting of the National Association for Research on Science Teaching, Philadelphia, PA.

REFEREED PRESENTATIONS

National/International (33)

Hanuscin, D., Lee, M. H., & Akerson, V. L. (2008, April). *Pedagogical content knowledge for teaching the nature of science: A study of teachers who are effective in impacting students' views*. Paper presented at the annual meeting of the National Association for Research on Science Teaching: Baltimore, MD.

Hanuscin, D., & Friedrichsen, P. (2008, January). *Working in two worlds: Perspectives on joint appointments in science and education*. Session presented at the annual meeting of the Association for Science Teacher Education: St. Louis, MO.

Cullen, M., Friedrichsen, P., Haefner, L., Hanuscin, D., Brown, P., Courson, S. (2008, January). *Strategies for supporting prospective teachers' instructional planning*. Paper presented at the annual meeting of the Association for Science Teacher Education: St. Louis, MO.

Wissehr, C., & Hanuscin, D. (2008, January). *Science museums & specialized content courses for prospective elementary teachers: Implications for learning to teach science*. Paper presented at the annual meeting of the Association for Science Teacher Education: St. Louis, MO.

Hanuscin, D. & Lee, M. H. (2007, April). *Science between the lines: Using literature to teach the nature of science*. Session presented at the NSTA National Conference on Science Education: St. Louis, MO.

Concannon, J., & Hanuscin, D. (2007, April). *Prior to assessing prior knowledge... using research to inform assessment*. Session presented at the NSTA National Conference on Science Education: St. Louis, MO.

- Yılmaz-Tüzün, O., Topçu, M. S., & Hanuscin, D. (2007, April). *A Cross Cultural Study of Pre-Service Elementary Teachers' Epistemological Beliefs*. Paper presented at the annual meeting of the American Educational Research Association: Chicago, IL.
- Tsai, I., & Hanuscin, D. (2007, April). *Hammering a nail with a saw: The constraints of 'one size fits all' technology in supporting online communities of science teachers*. Paper presented at the annual meeting of the American Educational Research Association: Chicago, IL.
- Hanuscin, D., & Lee, M. H. (2007, April). *Across content and pedagogy: Seeking coherence in NOS instruction in teacher education programs*. Paper presented at the annual meeting of the National Association for Research in Science Teaching: New Orleans, LA.
- Hanuscin, D., & Lee, M. H. (2007, January). *Literature-based approaches in science teacher education*. Paper presented at the annual meeting of the Association for Science Teacher Education: Clearwater, FL.
- Friedrichsen, P., Haefner, L. A., Hanuscin, D., Manno, J., Brown, P., Courson, S., & Cullin, M. (2007, January) *Challenges and scaffolds for helping prospective teachers design science lessons using the 5E instructional model*. Paper presented at the annual meeting of the Association for Science Teacher Education: Clearwater, FL.
- Abell, S. K., Gagnon, M. J., Hanuscin, D. L., Lee, M. H., & Park-Rogers, M. (2007, January). *Methods or madness? Preparing the next generation of elementary science teacher educators*. Paper presented at the annual meeting of the Association for Science Teacher Education: Clearwater, FL.
- Hanuscin, D., & Friedrichsen, P., (2007, January). *Working in two worlds: Developing a Research Identity as a Joint Appointment*. Panel discussion presented at the annual meeting of the Association for Science Teacher Education: Clearwater, FL.
- Topçu, M. Yılmaz, Ö, & Hanuscin, D. (2006, May). Cross cultural validation of Schommer's epistemological questionnaire in exemplary samples of preservice elementary teachers across Turkey and USA. Paper presented at the Çanakkale Onsekiz Mart University Third International Symposium on Teacher Education: Çanakkale, Turkey.
- Friedrichsen, P., Hanuscin, D., & Hutchins, K. (2006, April) *Will I teach evolution? A multiple case study of secondary biology teachers*. Paper presented at the annual meeting of the National Association for Research in Science Teaching: San Francisco, CA.
- Hanuscin, D., & Friedrichsen, P., (2006, January). *Working in two worlds: Perspectives on joint appointments*. Panel discussion presented at the annual meeting of the Association for Science Teacher Education: Portland, OR.
- Richard, M., Hanuscin, D., & Chandrasekhar, M. (2006, January) *Using assessment to inform teaching in a physical science content course for preservice elementary teachers*. Paper presented at the annual meeting of the Association for Science Teacher Education: Portland, OR.
- Hanuscin, D. (2005, April) *Learning the 'grammar of science': The influence of a physical science content course on K-8 teachers' understanding of the nature of science*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, QU.
- Akerson, V. L., & Hanuscin, D. (2005, April) *Teaching the nature of science through inquiry: the influence of a three-year elementary professional development program*. Paper presented at the annual meeting of the National Association for Research on Science Teaching, Dallas, TX.
- Hanuscin, D., Phillipson-Mower, T., & Pareja, E. (2005, April) *Integration of NOS instruction into a physical science content course for elementary teachers: Enhancing efforts of teacher education*

- programs?* Paper presented at the annual meeting of the National Association for Research on Science Teaching, Dallas, TX.
- Akerson, V.L., & Hanuscin, D. (2005, April) *There's more to science than meets the "I": A collaborative endeavor to teach the nature of scientific inquiry*. Annual meeting of the National Science Teachers Association, Dallas, TX.
- Hanuscin, D., Phillipson-Mower, T., Akerson, V. L., & Sadler, T. (2005, April) *Introducing nature of science into the science methods classroom*. Annual meeting of the National Science Teachers Association, Dallas, TX.
- Hanuscin, D., & Akerson, V. L. (2005, January) *The impact of a physical science content course on K-8 teachers' understanding of the nature of science*. Paper presented at the annual meeting of the Association for the Education of Teachers of Science, Colorado Springs, CO.
- Akerson, V.L., & Hanuscin, D. (2005, January) *Primary teachers' abilities to teach the nature of science*. Paper presented at the International Conference on Education, Honolulu, HI.
- Hanuscin, D., Phillipson-Mower, T., & Akerson, V.L. (2004, April) *Teaching nature of science in a physical science content course for teachers: A study of undergraduate lab instructors*. Paper presented at the annual meeting of the National Association for Research on Science Teaching, Vancouver, BC. [cited by: 2]
- Hanuscin, D., Phillipson-Mower, T., & Akerson, V.L. (2004, January). *Learning and teaching about the nature of science: A study of undergraduate laboratory instructors*. Paper presented at the annual meeting of the Association for the Education of Teachers of Science, Nashville, TN.
- Akerson, V., & Hanuscin, D. (2004, January). *There's more to science than meets the "I": A collaborative endeavor to teach the nature of science*. Paper presented at the annual meeting of the Association for the Education of Teachers of Science, Nashville, TN.
- Akerson, V., & Hanuscin, D. (2003, March). *Primary teachers' abilities to teach via scientific inquiry while making elements of nature of science explicit*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Philadelphia, PA. [cited by: 3]
- Akerson, V., & Hanuscin D. (2003, January) *Learning science by inquiry: An elementary teacher enhancement project*. Paper presented at the annual meeting of the Association for the Education of Teachers of Science, St. Louis, MO.
- Akerson, V. L., Reiff, R., Morrison, J. A., Hanuscin, D., Shymansky, J. A., & Yore, L. D. (2003, January). *Issues associated with using student science journals with K-6 students*. Paper presented at the annual meeting of the Association for the Education of Teachers of Science, St. Louis, MO.
- Hanuscin, D. (2003, January) *Content as context: teaching nature of science in a physical science content course for preservice elementary teachers*. Poster presented at the annual meeting of the Association for the Education of Teachers of Science, St. Louis, MO.
- Hanuscin, D. (2003, January) *Making the most of an early field experience*. Paper presented at the annual meeting of the Association for the Education of Teachers of Science, St. Louis, Missouri. (EDRS No. ED474453)
- Barnett, M., MaKinster, J. G., & Hanuscin, D. (2001). *Exploring elementary students' learning of astronomy through model building*. Paper presented at the American Education Research Association, Seattle, WA.

Regional and State (17)

- Lee, M., & Hanuscin, D. (2006, November) *Who are scientists and what do they do? - Investigating science as a human endeavor*. Session presented at the National Science Teachers Association Eastern Area Conference on Science Education: Baltimore, MD.
- Hanuscin, D., & Lee, M. (2006, October) *Science Olympiad coaches' clinic: Write-It, do it!* Session presented at the annual meeting of the Science Teachers of Missouri. Columbia, MO.
- Hanuscin, D., Phillipson-Mower, T. (2005, November). *Beyond content and process—Understanding the nature of science*. Session presented at the Midwestern Area convention of the National Science Teachers Association. Chicago, IL.
- Hanuscin, D., & Lee, M. (2005, October) *Science Olympiad coaches' clinic: Write-It, do it!* Session presented at the annual meeting of the Science Teachers of Missouri. Columbia, MO.
- Hanuscin, D., Richard, M., & Corman, A. (2005, October) “*What answer are you looking for?*” *Student responses to assessment practices*. Session presented at the annual meeting of the Science Teachers of Missouri. Columbia, MO.
- Friedrichsen, P. & Hanuscin, D. (2005, October) *Missouri Beginning Teacher Institute*. Session presented at the annual meeting of the Science Teachers of Missouri. Columbia, MO.
- Hanuscin, D., Lee, M., & Pareja, E. (2005, March) *Learning about the nature of science in teacher education: Reform and research*. College of Education Research Day, University of Missouri-Columbia.
- Hanuscin, D., & Lee, M. (2004, October) *Science Olympiad coaches' clinic: Write-It, do it!* Session presented at the annual meeting of the Science Teachers of Missouri. Columbia, MO.
- Hanuscin, D. (2004, October) *From cookbook activities to inquiry: Electrical circuits*. Session presented at the annual meeting of the Science Teachers of Missouri. Columbia, MO.
- Phillipson-Mower, T., Sadler, T., Akerson, V., Hanuscin, D., Deniz, H., & Donnelly, L. (2004, February). *Introducing the nature of science into the science methods classroom*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.
- Green, A., Hollinger, K., Rooney, M., Akerson, V., & Hanuscin, D. (2004, February). *The myth of the scientific method*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.
- Hanuscin, D., Boyd, T., Bomberg, J., & Thoms, A. (2004, February). *There's more to it than batteries, bulbs, & wires: Teaching the nature of science within a unit on electrical circuits*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.
- Comerford, J., Hollinger, H., Rooney, M., Greene, A., Hanuscin, D., & Akerson, V. (2003, February). *Adapting curricula to focus on inquiry*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.
- Hanuscin, D., & Yilmaz, O. (2002, February). *If that's the NEW moon, where did the OLD one go? Children's misconceptions in science*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.
- Hanuscin, D., Reiff, R., & Phillipson, T. (2002, February). *What do they remember? Students' science autobiographies*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.

Reiff, R., & Hanuscin, D. (2002, February). *That SOUNDS like science*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.

Barnett, M., Rogers, K., & Hanuscin, D. (2002, February). *Meeting the Indiana Academic Standards through inquiry*. Session presented at the annual meeting of the Hoosier Association of Science Teachers, Inc., Indianapolis, IN.

INVITED TALKS (12)

Hanuscin, D., Vajk, O., & Peculis, B. (2008, April). *Discussion on Lesson Implementation: Using Mini-journals to facilitate student inquiry*. MU Conversations on College Science Teaching, University of Missouri.

Hanuscin, D. (2008, March). *NSTA's Exemplary Science Programs (ESP): Professional Development*. NSTA 55th National Conference on Science Education: Boston, MA.

Hanuscin, D. (2008, March). *NSTA's Exemplary Science Programs (ESP): Middle Grades Science*. NSTA 55th National Conference on Science Education: Boston, MA.

Hanuscin, D. (2007, March). *Everything you need to know about science but didn't learn in college: Considering the nature of science and scientific literacy*. Invited seminar: Department of Applied Biology and Biomedical Engineering, Rose-Hulman Institute of Technology: Terre Haute, IN.

Tsai, I. & Hanuscin, D. (2007, November). *Nurturing Elementary Teachers' Work (NETwork) Through an Online Learning Community*. Mathematics and Science Education Colloquium: College of Education. University of Missouri.

Akerson, V. L., & Hanuscin, D. (2006, November). *NSTA's Exemplary Science Program (ESP): ESP for Professional Development*. Symposium presented at the National Science Teachers Association Eastern Area Conference on Science Education: Baltimore, MD.

Akerson, V. L., & Hanuscin, D. (2006, April). *NSTA's Exemplary Science Program (ESP): ESP for Professional Development*. NSTA 54th National Conference on Science Education: Anaheim, CA.

Hanuscin, D. et al. (2006, April) *Getting started: Internal grant opportunities*. MU College of Education Office of Research Brown Bag Series. University of Missouri.

Hanuscin, D. (2006, February) *Supervising at a distance: Leveraging technology in field experiences*. Conversations on Learning, Teaching, and More: Department of Learning, Teaching, and Curriculum, University of Missouri-Columbia.

Friedrichsen, P., & Hanuscin, D. (2005, November) *Scientific Literacy: A Gap in Understanding, or a Gap in the Syllabus?* MU Conversations on College Science Teaching, University of Missouri-Columbia.

Hanuscin, D. (2005, October) *Promoting Science Literacy: A Gap in Understanding or a Gap in the Syllabus?* Seminar Series: Department of Physics, Astronomy, and Materials Science. Missouri State University.

Tarr, J., & Hanuscin, D. (2005, February) *Preparing for the academic job market: Tips for prospective math and science teacher educators*. Mathematics and Science Education Colloquium: College of Education. University of Missouri.

Hanuscin, D. (2004, January). *Learning to teach the nature of science: A study of undergraduate laboratory instructors*. Seminar on the Teaching of Physics, Indiana University Department of Physics & Astronomy Colloquium Series.

FUNDING ACTIVITY

External

Funded

Principal Investigator (1/08-6/11) *QUEST: Quality Elementary Science Teaching*. Missouri Department of Higher Education, Improving Teacher Quality Grants Program. Co-PI: Delinda van Garderen. Total value of grant: \$306,777.

Submitted

Co-Principal Investigator (submitted 12/07) *Research Experiences for Teachers: Modern Engineering and Biomedical Materials for the 21st Century*. National Science Foundation. PI: Sanjeev Khanna. Total value of grant: \$500,000. (under review)

Not Funded

Co-Principal Investigator: (submitted 3/07) *ELEMENTS: A Mathematics and Science Pathway for Elementary Teachers*. National Science Foundation: National Science Digital Libraries. PI: Tom Kochtanek. Total value of grant: \$917,347 (not funded)

Principal Investigator: (submitted 1/07) *MU Physics Teacher Education Coalition*. National Science Foundation, Sub-contract with APS. Co-PIs: M. Volkmann, P. Miceli, C. Wexler, and D. Kosztin. Total value of grant: \$299,812. (not funded)

Principal Investigator: (submitted 6/06) *Quality Experiences with Science and Technology (QUEST)*. National Science Foundation, Academies for Young Scientists. Total value of grant: \$798,623. (not funded)

Co-Principal Investigator: (submitted 1/05) *Teacher Institute and Partnerships in Science (TIPS)*. Missouri Department of Higher Education, Improving Teacher Quality Grants Program. Total Value of Grant: \$594,790. (not funded)

Co-Principal Investigator: (submitted 8/04) *Missouri Teacher Academy and Partnerships in Science*. \$800,000 requested from the Missouri Department of Elementary and Secondary Education, Math and Science Partnerships Program. (not funded)

Co-Principal Investigator: (submitted 8/04) *Academy for Learning and Teaching Elementary Mathematics*. \$2,634,326.25 requested from the Missouri Department of Elementary and Secondary Education, Math and Science Partnerships Program. (not funded)

Internal

Funded

Principal Investigator: *Improving Undergraduate Non-Majors' Understanding of the Nature of Science*. \$6290 awarded by the University of Missouri Office of Research, Research Council Grants Program. (January 2008-August 2008) Co-PI: Angela Speck (Physics & Astronomy)

Faculty Sponsor: *Seamless Assessment: Study Group/ Teacher Inquiry Project*. \$4500 awarded by the MU Partnership for Educational Renewal, MU College of Education. (August 2007-May 2008) Collaborators: Brown Elementary (Bill Heckel, Principal), Lawson Elementary (Betty Scheller, Principal), Walker Elementary (Eric Arbetter, Principal)

Principal Investigator: *Enhancing Preservice Elementary Teachers' Understanding of the Nature of Science: An Intervention Study*. \$7092.00 awarded by the University of Missouri Office of Research, Research Council Grants Program. (January 2005-July 2006) Co-PI: Meera Chandrasekhar (Physics)

Principal Investigator: *An Exploratory Study of the Integration of Explicit-and-Reflective Nature of Science Instruction into a Content Course for Preservice Elementary Teachers* \$960.00 awarded by the University of Missouri Office of Research, Research Council Small Grants Program. (December 2004-April 2005)

Principal Investigator: *Examining Assessment Practices in a Physical Science Content Course for Preservice Elementary Teachers*, \$2000.00 awarded by the Dr. Richard Wallace Research Incentive Grants Program – Scholarship of Teaching. (October 2004- June 2005) Co-PIs: Meera Chandrasekhar (Physics), Cintia Lapilli and Adrian Corman (Physics Graduate Students), Matt Richard (Undergraduate Physics Education Student)

Project Assistant: *Learning Science by Inquiry*, \$40,000 awarded by the Indiana University School of Education Office of Research Proffitt Grants Program. (January 2002 – June 2004) PI: Valarie Akerson.

Not Funded

Principal Investigator: *The Elementary Science Learning Community: Bridging the Gap*. \$977 requested from the University of Missouri Office of Research, Research Council Small Grants Program. (submitted 11/05)

PROFESSIONAL SERVICE

National

Coordinator, Conference Strand: *College and University Science Education*, 2008 Annual Meeting of the Association for Science Teacher Education, St. Louis, MO.

Coordinator, Conference Strand: *College and University Science Education*, 2006 Annual Meeting of the Association for Science Teacher Education, Portland, OR.

Committee Member (appointed), *NARST Outstanding Paper Committee* (2005-2007)

State

Member, Selection Committee, *Missouri Presidential Awards in K-6 Science* (2006)

State Event Coordinator for *Write It, Do It*. Missouri State Science Olympiad. (2004-2007)

State Event Coordinator for *Experimental Design* Missouri State Science Olympiad. (2008-)

Local

Member, K-5 Science Program Evaluation Team. Columbia Public Schools. (2005-2006)

Judge, Harris-Litherland Science Award Competition. Columbia Public Schools. (2005, 2006, 2007)

UNIVERSITY SERVICE

Campus

Faculty Advisor, Gamma Phi Beta Sorority, Alpha Delta Chapter. (2005-present)

Faculty Advisor, MU Student Chapter of the *National Science Teachers Association* (2007-present)

College of Education

Member (appointed), COE Assessment & Consultation Advisory Committee. (2004-present)

Faculty Coordinator, Phase II Teacher Development Program, Blue Block Cohort (2004-2007)

Department of Learning, Teaching, and Curriculum

Member, Biochemistry Education Search Committee (2005-2006)

Member (appointed), LTC Faculty Awards Committee. (2004-present)

Department of Physics and Astronomy

Liaison, Physics Teacher Education Coalition (PTEC)

ORGANIZATIONAL MEMBERSHIPS

American Association of Physics Teachers (AAPT)

American Educational Research Association (AERA) Division K; Science Education SIG

Association for Science Teacher Education (ASTE); Women in Science Education forum (WISE)

National Association for Research on Science Teaching (NARST)

National Science Teachers Association (NSTA)

Science Teachers of Missouri (STOM)