

# Jessica N. Orvis

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## ***Teaching Experience***

(Sept 1993 - present) Assistant Professor of Chemistry and Director of General Chemistry at Georgia Southern University

### *Courses Taught:*

Principles of Chemistry I  
Principles of Chemistry II  
Introduction to General, Organic, and Biochemistry  
Environmental Chemistry  
First Year Seminar- The End of Easy Oil and the Future of Energy

(Sept 1991 - Aug 1993) Instructor of Chemistry at Georgia Southern University

## ***Education***

M.S. Chemistry, Department of Chemistry, University of Tennessee, Knoxville, TN, 1989.  
Organic chemistry subdivision, Thesis title- "Photochemistry of 4-Chlorobiphenyl",  
Dr Richard Pagni, Advisor.

B.S. Chemistry, Vanderbilt University, Nashville, TN, 1986.

## ***Awards***

Semi-finalist for the National First Year Experience Outstanding Advocate Award, Feb 7<sup>th</sup>, 2009.

College of Science and Technology Excellence in Teaching Award, Aug, 2009.

College of Science and Technology Tenured Faculty Member of the Year Award, Aug, 2009.

National Award through NACURH (National Association of College and University Residence Halls) for Chemistry demonstration show, Nov 2009.

Outstanding First Year Advocate Award at Georgia Southern University, 2008.

## ***Current Research Interests***

Studies in motivation of students in first year science courses

Relationship of learning attitudes toward success in first year chemistry

Relationship of high school preparation to success in STEM

SOTL research on the effectiveness of supplemental instruction compared to traditional tutoring that includes research with undergraduate students.

Development of laboratory experiments to enhance student learning

## ***Peer Reviewed Journal Articles***

(grey color indicates prior to last personnel action)

Chambers, Wendy; Lisa Smith, Jessica Orvis, Christopher Caplinger, *College and Undergraduate Libraries*. “Developing a Topic-Centered First Year Seminar with a Renewed Focus on Information Literacy: Rewards and Challenges at a Large Regional University” 20:1, 52 – 71, **2013**.

Orvis, Jeffery A., Jessica N. Orvis, *The Chemical Educator*, “Who’s Coming to the Party—The Greeks, The Romans, Or Nobody?”, **2007**, 12, 314 – 315.

Orvis, Jeffery A., Jessica N. Orvis, Brian Koehler, *Journal of College Science Teaching*. “The Nature of Color Subtraction—A Guided Inquiry Experience.” 36 (6): 68 – 69, **2007**.

Orvis, Jessica N., Jeffery A. Orvis, *Journal of College Science Teaching*. “Throwing Paper Wads in the Chemistry Classroom— Really Active Student Learning.” 35 (3): 23 – 25, **2005**.

Jenkins, J. David, Jessica N. Orvis, Jeanette Rice, *Journal of Chemical Education*, “Including Non-Traditional Instrumentation in Undergraduate Environmental Chemistry Courses for Majors and Non-Majors”, 81 22, **2004**.

Koehler, Brian P.; Orvis, Jessica N. *Journal of Chemical Education*, “Internet-Based Prelaboratory Tutorials and Computer-Based Probes in General Chemistry.”, 80 606, **2003**.

Battles, Denise A., Melvin E. Franks, Alison I. Morrison-Shetlar, Jessica N. Orvis, Fredrick J. Rich and Tony J. Deal. “Environmental Literacy for All Students: Evaluation of Environmental Science Courses Developed for a New Core Curriculum.” *Journal of College Science Teaching*, **2003**, 32, 458 – 465.

Orvis, Jessica; Deal, S Todd; Wojciechowski, Brenda; LoBue, Jim; Schmidt, Norman; and Orvis, Jeffery; "Structure, Reactivity, and Applications: General Chemistry Reform at a Mid-sized Public University", *The Chemist*, May-June **1996**, 3.

Orvis, Jessica, Weiss, Joseph; Richard M. Pagni, "Further Studies on the Photoisomerization and Hydrolysis of Chlorobiphenyls in Water. Common Ion Effect in the Photohydrolysis of 4-Chlorobiphenyl". **1991**, *Journal of Organic Chemistry*, 1851.

### ***In-house Publications***

#### **Laboratory Manuals for General Chemistry (edited and revised every summer)**

Orvis, Jessica, General Chemistry 1145 Laboratory Manual (in-house lab manual), Southern University Press, 2013.

Orvis, Jessica, Introduction to General Chemistry 1146 Laboratory Manual (in-house lab manual), Southern University Press, 2013.

Orvis, Jessica, Introduction to Organic and Biochemistry 1140 Laboratory Manual (in-house lab manual), Southern University Press, 2011.

Orvis, Jessica, General Chemistry 1040 Laboratory Manual (in-house lab manual), Southern University Press, 2013.

Orvis, Jessica, General Chemistry 1147 Laboratory Manual (in-house lab manual), Southern University Press, 2013.

### ***Presentations***

Jessica Orvis, "Using the Chemical Concepts Inventory to Assess Supplemental Instruction and Tutoring", Biennial Conference on Chemistry Education, Pennsylvania State University, July 31, 2012.

Jessica Orvis, Chelsea Perry, "Summer Assignment for Principles of Chemistry I", SoTL Conference Poster Session, Georgia Southern University, April 2012.

Jessica Orvis, Chelsea Perry, "Development and Validation of an Open Ended Assessment: Creative Exercises", COUR Poster Session, Georgia Southern University, April 2012.

Jessica Orvis, Jordan Mader, Shelby Shuler, Mike Hurst, “Development and Validation of an Open Ended Assessment—Creative Exercises”, SOTL Expo 2011, Georgia Southern University, Statesboro, GA, April 13, 2011.

Jessica Orvis, Deborah Sauder, “Development and Validation of an Open Ended Assessment—Creative Exercises”, SOTL Commons Conference, Georgia Southern University, Statesboro, GA, March 11, 2011.

Jessica Orvis, Mark Richardson, Tim Giles, “Writing About Science/ Writing About Chemistry”, Student Success in First Year Composition Conference, Georgia Southern University, Statesboro, GA, February 6<sup>th</sup>, 2009.

Jessica Orvis, “Chemistry in a Museum—Challenges, Successes, and Evaluation”. BCCE (Biennial Conference on Chemical Education), Indiana University. Bloomington, IN, July 29, 2008.

Jessica Orvis, Kathy Albertson, Wendy Chambers, Lisa Smith, Chris Caplinger, “Distinct Pedagogy for First Year Students”, First Year Experience Conference, panel member, San Francisco, CA, February 17, 2008.

Jessica Orvis, “Throwing Paper Wads in the Classroom—Really Active Student Learning”, BCCE (Biennial Conference on Chemical Education), Purdue University. West Lafayette, IN, August 1, 2006

Jessica Orvis, Wendy Denton, Ruby Ashley, Martha McBride “Project SENSE and Project BESST: Bringing Museum and University Resources into the Classroom”, 2005 Annual Conference of the Southeast Association for Science Teacher Education (SASTE), Athens, GA, October 14 – 15, 2005.

Jessica Orvis, Brian Koehler, “Genchem Labs at the Next Level: New Tools for a New Era.”, RISE RIG Georgia Southern University, College of Science and Technology, Statesboro, GA, March 4, 2005.

Jessica Orvis, “Project SENSE, Science Education Network for the Southeast (Georgia): Collaboration Between K-12 Teachers, Georgia Southern Museum, and Department of Chemistry Faculty”, BCCE (Biennial Conference on Chemical Education), Iowa State University, Ames, IA, July 19, 2004.

Jessica Orvis, Brian Koehler, “Salt Water Intrusion—A Solution Conductivity Experiment: Just What Is A Microsiemen?”, GSTA (Georgia Science Teacher’s Association), Jekyll Island, GA, February 15, 2002.

Jessica Orvis, “Computers and Analytical Probes in the General Chemistry Lab—New Labs, Internet Based Tutorials, and Evaluation.”, BCCE (Biennial Conference on Chemical Education), Bellingham, WA, July 31, 2002.

Jessica Orvis, “The Undergraduate Teaching Internship Program (UTIP)—A Model for Teacher Training in Science”, BCCE (Biennial Conference on Chemical Education), , Ann Arbor, MI, July 29, 2000.

Jessica Orvis, “General Chemistry Reform at a Mid-Sized University”, SERMACS (Southeast Regional ACS meeting), Greenville, SC. May 3, 1996.

Jessica Orvis, “General Chemistry Reform in the Laboratory”, Georgia Academy of Sciences meeting, 72nd Meeting of the Georgia Academy of Sciences, Augusta, GA, April 12, 1995.

## ***Grant Support***

### ***External***

Scott Lewis (PI), Deborah Sauder, Jessica Orvis, Patricia Todebush, Timothy Howell (co-PIs): “Developing a Student Centered Assessment for General Chemistry” NSF CCLI (Course Curriculum and Laboratory Improvement) Award (funded for \$159,450 in collaboration with Kennesaw State University), Mar 2010 – Feb 2013.

Jeffery Orvis, Jessica Orvis, and Brent Tharp: “An Alliance Between Chemists and Teachers: Bringing Scientists into the Primary and Middle School Classrooms of Rural South Georgia.” The Dreyfus Foundation, (funded for \$27,904), Aug 2003 – Dec 2004.

Brian Koehler, PI and Jessica Orvis: “Meeting the Needs of All General Chemistry Students: Computers and Interfaced Analysis Probes in the Laboratory”, NSF- CCLI--A&I, \$139,365. Jan 2001 – Dec 2002.

Denise Battle, PI, Alison Morrison-Shetlar, Fred Rich, Jessica Orvis, Li Ma and Gene Franks: “Environmental Literacy for All Students: Development of Environmental Courses for a New Core Curriculum”, NSF- CCD, \$150,000. Aug 1998 – Dec 2000.

### ***Internal***

Jeffery Orvis and Jessica Orvis, “Powered by Popeye’s: Teaching Honor’s General chemistry Via the Preparation of Biodiesel Fuel”. Academic Excellence Award (funded for \$472), 2005.

Jessica Orvis, Travel to Biennial Conference on Chemical Education, (funded for \$402), 2008.

Jessica Orvis, Travel to Biennial Conference on Chemical Education, (funded for \$453), 2006.

## ***Summary of Service Activities***

Supervised student leaders in Mole Day demonstrations (2009 – present)

Reviewed at least two journal articles per year for the *Journal of Chemical Education* (2009 – present)

Served as textbook and online learning materials selection chair for CHEM 1145/1146/1147 every three years since 1998

Taught the first chemistry RIG (Residential Interest Group) section at GSU as part of the ASPIRES grant (2007- 2010)

Helped to organize a campus wide Conversations with Professors program (modeled after the one at James Madison University) (2007- 2010)

Developed the First Year Experience Seminar Program through the FYE Task Force, and piloted one of the first sections

Coordinated the Chemistry Department Supplemental Instruction (SI) program as part of the ASPIRES grant (2009 – present)

Served on First Year Experience Task Force for Georgia Southern University (2006 – 2007)

Served as co-curator for a local hands-on museum exhibit called “Mad Scientist’s Laboratory—Physical Science” (Oct 2007 – Aug 2008)

Coordinated 40 – 50 general chemistry teaching assistants per year (2003 – present)

Instructed a teacher education outreach program called Project SENSE (Science Education Network for Southeast Georgia) (1998 – present—every 3 years)

Taught summer science camp to Candler County gifted children (2008 – present)

Served as advisor to student Chemistry Club for Mole Day activities (2009 – present)

Hosted various elementary school groups with science activities and demonstrations (since 1995)

Served as Odyssey of the Mind Coach (2003 – present)

Served in numerous departmental and college search committees and policy committees