

**Iris Moreno Totten**

Department of Geology

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email: [itotten@ksu.edu](mailto:itotten@ksu.edu)webpage: [www.k-state.edu/geology/geodept/itotten/index.html](http://www.k-state.edu/geology/geodept/itotten/index.html)**CURRENT POSITION**

**Assistant Professor, Kansas State University, Department of Geology.** Research focuses on 1) developing innovative pedagogical tools such as artificial rock outcrops and reconstructed virtual geologic time periods in *Second Life*, 2) examining the cognition continuum between novice and expert learners, 3) understanding student alternative conceptions in the geosciences, as well as, 4) petroleum related field studies.

**EDUCATION**

**Ph.D., 2003** University of New Orleans, Curriculum and Instruction, Science Education  
*Using an Artificial Rock Outcrop to Augment Geoscience Education at an Urban University* (Advisor: Cory Buxton)

**M.S., 1994** University of New Orleans, Geology,  
*Petrogenesis of Rhyolitic Ash Flow Tuffs, Sierra Madre Occidental, Zacatecas, Jalpa, Mexico* (Advisor: Karen Webber)

**B.S., 1991** University of New Orleans, Geology, Minor in Biology,

**TEACHING EXPERIENCE**

2005-present	Assistant Professor: Kansas State University, Department of Geology.
2003-2005	Post-Doctoral Researcher/Instructor- University of New Orleans. Dual Appt: Departments of Geology, Curriculum & Instruction.
2003-2005	Teacher Professional Development Consultant- Orleans Parish Public Schools, New Orleans.
Spring 2004	Supervisor of Pre-Service Elementary Education Teachers: University of New Orleans.
2001-2003	Graduate Research and Teaching Assistant: University of New Orleans, Dual Appt: Departments of Geology and Curriculum & Instruction
2001-2003	Science Olympiad Earth Science Coordinator- University of New Orleans.
2000-2002	Science Guest Teacher – St. Tammany Parish, LA.
2000-2001	Project Evaluator: University of New Orleans, Department of Education Foundation and Research
1992-1994	Teaching Assistant- University of New Orleans, Department of Geology

**PROFESSIONAL EXPERIENCE**

- 1994-1999 Mobil Exploration and Producing U.S., Exploration Geologist (Deepwater Gulf of Mexico), Production Geologist (Grande Isle, Gulf of Mexico) and Geoscience College Recruiter.
- 1991,1992,1993 Summer Internships, Amoco Oil Company: 1) Basin Modeling, Latin American New Ventures Group, 2) Geophysical Field Study, 3) Production Field Study
- 1988 Summer Internship, Shell Oil, New Orleans Business Unit

**WORKSHOPS CONTRIBUTIONS**

- 2005-2008 KSU-PDS Teacher Partnership Summer Institute- Kansas State University.
- 2008 Research Partnership Workshop- KSU
- 2008 Project Connect Workshop
- 2007 Geology Field trip with Junction City Middle School
- 2007 Geologic Workshop for T.R. Roosevelt Students
- 2006 NSF Workshop on Informal Science Education
- 2006 Geologic Workshop for the KSU- Middle School GROW Program
- 2006 Geologic Workshop for the Boy Scouts of Americas Merit Badge Conference
- 2005 Geologic Workshop for Apostolic Academy- 6<sup>th</sup> grade
- 2005 Geologic Workshop for Twin Lakes Education Cooperative Gifted Program
- 2004-2005 Earth Science Teacher Workshops- New Orleans Public Schools

**PROFESSIONAL SERVICE**

- 2008 Session Co-Chair- *Geoscience Education II: Best Practices for Teaching Geoscience*, Geological Society of America Annual Conference, Houston, TX
- 2008 Associate Editor –*Journal of Geoscience Education and the International Journal of Learning*
- 2004-2008 Reviewer for Journal of Geoscience Education
- 2007-2008 Proposal Reviewer for *National Association of Research in Science Teaching*
- 2007 Session Judge for Student Posters at the South-Central Geological Society of America Conference, Lawrence, 2007.
- 2007 KSU- Faculty Sponsored Department of Geology Colloquia: Dr. Ellen Metzger
- 2006 KSU- Faculty Sponsored Department of Geology Colloquia: Dr. Julie Libarkin
- 2006 Reviewer for Holt Earth Science Textbook
- 2006 Session Chair South-Central Geological Society of America Conference: *The Intelligent Design and Evolution Controversy*
- 2005 NSF Teacher Professional Continuum Proposal Reviewer

**GRANT SUPPORT**

- 2008 **\$1000** ADVANCE Career Enhancement Opportunities KSU Initiative.
- 2008 in review NSF-GK-12 (with C. Ferguson, S. Kambhampati, S. Rebello, J. Spears,

S. Tanona) *New, GK-12: Evidence-based inquiry into the distant, remote, or past (EIDRoP): linking evidence to inference in the Kansas science classroom*, requested **\$2,980,580**

- 2008 in review NSF-DUE (with L. Scharmann, C. Culbertson, S. Rebello, C. Ferguson) *K-State Robert Noyce Scholarship Program*, requested: **\$749,765**
- 2008 **\$7000** KSU Math and Science Partnership Grant, *Creating Podcast Modules for Graduate Teaching Assistant Training*
- 2007 **\$700,000** Ewing-Marion Kaufmann Foundation (with M. Davies, D. Russel) *GeoWorlds: The Integration of Collaborative Virtual Learning Environments, Problem-Based Education in the Geosciences and Facilitator Development*
- 2007 **\$290,784** Kansas Board of Regents: No Child Left Behind Improving Teacher Quality Grant, (with K. Staples, L. Scharmann, M. O'Shea, S. Rebello, P. Wong) *Connections that Create Science Conceptual Change: A Professional Development Project for Middle Level Science Teachers*
- 2007 **\$6,000** KSU Math and Science Partnership Grant, Graduate Student Support
- 2007 **\$1200** NSF ADVANCE Distinguished Lecture Series
- 2006 **\$1200** NSF ADVANCE Distinguished Lecture Series
- 2006 **\$1900** KSU-President's Faculty Development Award (FDA), *Travel to the National Science Foundation*
- 2005 **\$96,799** NSF-GEO (with K. Nicolaysen, S. Gao, M. Hubbard, K. Lui) *Interactive Computer Tutorial to Investigate the Link between Mineral preferred Orientation and Seismic Anisotrophy*
- 2005 **\$4500** KSU-University Small Research Grant (USRG), *Geo-Spatial Visualization Research*
- 2004 **\$10,000** University of New Orleans Strategic Planning and Implementation Group (STPIG), *Upgrading the Master of Arts in Science Teaching (MAST) Program to Develop Excellence in Earth Science Teaching.*
- 2003 **\$6,500** University of New Orleans Strategic Planning and Implementation Group (STPIG), *Using i-Book Laptops to bring Technology to an Artificial Rock Outcrop.*
- 2002 **\$25,000** NSF-CCLI (with Frank Hall, Cory Buxton) *Using An Artificial Rock Outcrop to Augment Geoscience Education at an Urban University*

**PEER-REVIEWED PUBLICATIONS**

- Russel, Donna, Davies, Molly, and Totten, Iris, (in-press) Geoworlds: Utilizing Second Life to Develop Advanced Geosciences Knowledge, *Proceedings of the Institute of Electrical and Electronics Engineers (IEEE) Conference on Digital Game and Intelligent Toy Enhanced Learning*, November 17-19, 2008, IEEE Computer Society Press Banff, Banff, Canada.
- Totten, Iris (in-press) Physical Geology Designed for Pre-Service Education Majors, *Journal of Geoscience Education*.
- Totten, Iris and Morse, Mo, The impact of geoscience inquiry-based activities on student attitudes, and retention of content knowledge, *Proceedings of the Annual Meeting of the National Association of Research in Science Teaching*, March 30-2, 2008, Baltimore, MD.
- Miller, Keith and Totten, Iris (in-press) Developing and Implementing an Interdisciplinary Origins Course at a State University, *Journal of College Science Teaching*.
- Totten, Iris, Hodge, Sheryl Nicolaysen, Kirsten, and Hubbard, Mary, (in-press), A Faculty Workshop on Student Assessment: A Tool to Facilitate Programmatic Change, *International Journal of Learning*, vol. 15, No. 8, p.65-75.
- Hodge, Sheryl, Totten, Iris, and Vowels, Christopher, (2007) Assessing Intuitive Responding as a Function of a Technological Classroom Initiative: Attributes and Values of Computer-assisted Data Collection, *Proceedings of the Annual Conference of the American Evaluation Association*, November 7-10, 2007, Baltimore, MD.
- Hodge, Sheryl and Totten, Iris, (2007) Learning from Evaluation: Capacity building in a geoscience education project, *Proceedings of the Annual Conference of the American Evaluation Association*, November 7-10, 2007, Baltimore, MD.
- Totten, Iris and Totten, Matthew (2007), Project Based learning Approach to Shale Diagenesis: A Better Avenue to the Big Picture, *Journal of Geoscience Education*, v.55, n.4, 289-294.
- Totten, Matthew, Sr., Borges, Jonielle, and Totten, Iris, (2007), The effect of provenance on clay-mineral diagenesis in Gulf of Mexico shales: *Gulf Coast Assoc. Geological Society Transactions*, v. 57, p. 699-716.
- Totten, Matthew, Sr., Simpson, Sheri, Powers, Elizabeth, and Totten, Iris, (2007), The occurrence and distribution of sedimentary zeolites in the Main Pass Area, Gulf of Mexico Basin: *Gulf Coast Assoc. Geological Society Transactions*, v. 57, p. 717-727.
- Totten, Iris (2005), Using an Artificial Rock Outcrop to Teach Middle School Earth Science, *Science Scope*, Vol. 29, No. 2., p.30-35.

**Publications Under Review or in-Preparation:**

- Moore, Juli and Totten, Iris (in-review), A Geocognitive Analysis of Spatial Literacy in Geology Majors and Non-Majors, submitted to the *Journal of Geoscience Education*.
- Totten, Iris and Moore, Juli (in-review), Teaching Evolution, A successful Approach to a Controversial Topic, submitted to the *Journal of Geoscience Education*.
- Totten, Iris and Moore, Juli, (in-review), Gender-based Geospatial Differences in College Students, submitted to *Proceedings of the Annual Meeting of the National Association of Research in Science Teaching*, April 17-21, 2009, Garden Grove, CA.
- Russel, Donna, Davies, Molly, and Totten, Iris, (invited book chapter- in preparation) Using Virtual Learning Environments to Teach Geology, *Cases on Collaboration in Virtual*

*Learning Environments: Processes and Interactions*, Ed. Donna Russel.

Totten, Iris and Totten, Matthew, (in-preparation) Using clicker systems in introductory science courses, prepared for *Journal of College Science Teaching*.

Totten, Iris, (in-preparation), College student's beliefs and preconception of Geology, prepared for *Journal of Geoscience Education*.

Totten, Iris, (in-preparation), Variation in the Spatial Visual Aptitude of College Students, prepared for *Journal of Geoscience Education*.

Totten, Iris, (in-preparation), The Impact of Assessment Length on Student Performance, prepared for *Science Education*

### **Conference Presentations with Published Abstracts:**

Russel, Donna, Davies, Caroline, and Totten, Iris (2008) GeoWorlds: Utilizing Second Life to Develop Advanced Geosciences Knowledge, The 2nd IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning, Banff, Canada.

Totten, Iris (2008) An Earth Science Course for Pre-Service Teachers, *Geological Society of America abstracts with programs*.

Totten, Iris and Bosco, Kim, (2008) The Impact of Ability Grouping in Introductory Geology Labs, *Geological Society of America abstracts with programs*.

Totten, Matthew Sr., Jones, Christina, Totten, Iris, and Chaudhuri, Sam (2008) Discrimination of Volcanic Ash in the Gulf of Mexico Using Trace and Rare Earth Elements, *Geological Society of America abstracts with programs*.

Totten, Iris, Davies, Caroline, and Russel, Donna (2008), GeoWorlds: The Integration of Collaborative Virtual Learning Environments, Problem-Based Education in the Geosciences and Facilitator Development, *International Conference on Learning*, Chicago, IL.

Totten, Iris and Morse, Mo, (2008) The impact of geoscience inquiry-based activities on student attitudes, and retention of content knowledge, *National Association of Research in Science Teaching Annual Conference*, March, 2008, Baltimore, MD.

Totten, Iris and Moore, Juli (2007), A Preliminary Geocognitive Study used to Analyze Spatial Visual Learning Between Geology Majors and Non-Majors, *Geological Society of America abstracts with programs*, vol. 39, no. 6, p.212.

Totten, Iris, and Moore, Julie, (2007-invited talk), The Impact of an Interdisciplinary Course on Student's Understanding of Concepts in Origins, *Geological Society of America abstracts with programs*.

Russel, Donna, Davies, Caroline, and Totten, Iris, (2007) GeoWorlds: Utilizing Second Life Teen World to develop advanced Geosciences knowledge in Urban students on presentations in GeoWorlds. NSF Sponsered: *Virtual Pilot Research Symposium*.

Russel, Donna, Davies, Caroline, and Totten, Iris, (2007) GeoWorlds: Utilizing Problem Based Scenarios in Second Life to Develop Advanced Geosciences Knowledge. *E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*.

Myers, John, Totten, Iris, Totten, Matthew, and Derstler, Kraig, (2006), A Paleontological Preparation Lab, A Mechanism for Generating Student Excitement in the Geosciences, *Geological Society of America abstracts with programs*, Vol. 38, No. 7, p. 219.

- Moore, Julie and Totten, Iris, (2006), Uncovering Spatial Visualization Learning in the Geosciences, *Geological Society of America abstracts with programs*, Vol. 38, No. 7, p. 457.
- Morse, Mo, Moore, Julie, Puyear, Jessie, and Totten, Iris, (2006), Identifying Student Attitudes and Preconceptions about the Geosciences, *Geological Society of America abstracts with programs*, Vol. 38, No. 7, p. 216.
- Totten, Iris, (2006), The Center for the Understanding of Origins, *Geological Society of America abstracts with programs*, Vol. 38, No. 1, p. 11.
- Totten, Iris, and Moore, Julie, (2006), Origins: Humanity, Life, and the Universe, *Geological Society of America abstracts with programs*, Vol. 38, No. 1, p. 11.
- Totten, Iris, Totten, Matthew, and Crane, Steve, (2005), Developing Partnerships: Strategies for Geoscience Recruitment and Retention, *Geological Society of America abstracts with programs*, Vol. 37, No. 5. p.280.
- Totten, Iris, Hall, Frank, Morse, Mo, Lorenz, Ellen, Jones, Robin, Jones, Charrise, DeLeon, Steve, and Meyers, Shaun, (2005), A Summer Earth Science Immersion Experience for K-12 Teachers, *Geological Society of America abstracts with programs* Vol. 37, No. 3, p.6.
- Totten, Iris, Hall, Frank, and Buxton, Cory, (2004), Constructing Artificial Rock Outcrops as Tools for Fostering Earth and Environmental Science Thinking, *EOS Transactions, American Geophysical Union*, vol. 85, no. 47.
- Totten, Iris, (2002), Louisiana, A Leader in Earth and Space Science Education, *EOS Transactions, American Geophysical Union*, vol. 83, no. 19, p. S116.
- Totten, Iris, (2002), Integrating Science Education Strands in an Earth History for Teachers Course, *Geological Society of America abstracts with programs*, vol.34, no.6.
- Serpa, Laura, Hall, Frank, and Totten, Iris, (2002), New Initiatives for a successful Diversity Program at the University of New Orleans, submitted to *EOS, Transactions, American Geophysical Union*, vol. 83, no. 47.
- Totten, Iris, (2001), Teaching Assistants, an Under Utilized Resource in Geoscience Education, *Geological Society of America abstracts with programs*, vol. 33, no. 7, p.241.
- Totten, Iris, (2000), Louisiana Makes Great Strives Toward its Science Education Reform Goals, *Geological Society of America abstracts with programs*, vol. 31, no. 7, p. A350.
- Moreno, Iris, (1994), Petrogenesis of Rhyolitic Ash Flow Tuffs, Sierra Madre Occidental, Zacatecas, Jalpa, Mexico, *Geological Society of America abstracts with programs*, Vol. 26, No. 7, p. 118.

**Invited Presentations:**

- Totten, Iris, Grantmakers For Education Conference, October 21, 2008, Baltimore, MD.
- Totten, Iris, Geoworlds, A Virtual Second Life World, KSU-PDS Partnership Summer Institute, June 3, 2008, Kansas State University.
- Totten, Iris, Using Alternative Pedagogical Strategies to Enhance Pre-Service Teacher Science Education, February 11, 2007, Wichita State University.
- Totten, Iris, Using Artificial Rocks Outcrops in Geoscience Education, December 2, 2004, Kansas State University.
- Totten, Iris (2004) Geoscience Education, Merging Content and Pedagogy, February 24, 2004, Western Michigan State University.

**TEACHING****Teaching Awards Received:**

William B. Craig Earth Science Educator Award, University of New Orleans, 2003.

**Courses Taught (UG=undergraduate; G=graduate):**

1. Earth in Action (UG)
2. Earth in Action (Education Majors Only- UG)
3. Geocognition Seminar (G)
4. Origins: Humanity, Life, and the Universe (UG)
5. Physical Science for Elementary Education I (UG)
6. Physical Science for Elementary Education II (UG)
7. Elementary Science Methods (UG)
8. Earth History for Teachers (G)
9. Field Methods for Teachers (G)
10. Geology of Louisiana for Teachers (G)
11. Geologic Processes for Teachers- Earthquakes and Volcanoes (G)

**Dissertation/Thesis Advising:****Major Advisor**

*Kim Bosco-* (MS), “The Impact of Skill Grouping on Student Performance in the Introductory Geology Labs,” expected graduation date December 2008. Kansas State University.

*Juli Moore-* (MS), “Mapping Student Spatial Visualization Growth throughout a Geology Curriculum,” graduated May 2007. Kansas State University.

*Mo Morse-* (MS), “Inquiry-based versus Traditional Instruction, Effects on Student Content Retention,” graduated May 2007. Kansas State University.

*Charrise Jones-* (MAST Non-thesis option). University of New Orleans.

**Committee Member**

*Chris Flenthrope-* (MS), “Exploration model for the Fort Scott Limestone, central Ness County, Kansas,” expected graduation date May 2009. Kansas State University.

*Mazin Abbas-* (MS), “What went wrong in drilling Keith #1: An analyses of unsuccessful 3D seismic survey from Ness County, Kansas,” expected graduation date May 2009. Kansas State University.

*Dyan McBride-*(PhD, Physics Education), “Transfer of Learning for Students Learning Physical and Geometric Optics; A Modern Miracle Medical Machines Project,” expected graduation date August 2010. Kansas State University.

*Deborah Williams-* (PhD, Curriculum and Instruction), expected graduation date May 2009. Kansas State University.

*Chrisina Jones-* (MS), “Trace Element Fingerprinting of Volcanic Ash in the Gulf of Mexico,”

graduated June 2008. Kansas State University.

*Brian David-* (MS) “Chemical Fingerprinting” of Volcanic Ashes found in Kansas to their Eruption Sources,” expected graduation date December 2008. Kansas State University.

*Jill Tack-* (MAST Non thesis option). University of New Orleans.

**SELECTED AWARDS/SCHOLARSHIPS RECEIVED BY MY STUDENTS:**

-Juli Moore received the Association of Women Geoscientist Chrysalis Scholarship  
-Kim Bosco received awards from the Kansas Geological Foundation, the Association of Earth Science Clubs of Greater Kansas City, the SIPES Foundation, and Our Family for Families First Military Spouse Award.

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

National Association of Geoscience Teachers (2000-current)  
National Association for Research in Science Teaching (2003-current)  
American Educational Research Association (2001-current)  
National Science Teachers Association (2000-current)  
Kansas Geological Society (2005-current)  
American Geophysical Union (2000-current)  
Geological Society of America (1991-current)  
American Association of Petroleum Geologists (1992-current)  
Association of Women Geoscientists (1992-current)