

Ryan L. Sensenig

Department of Biological Science • Goshen College • Goshen, IN 46526
tel: 574-535-7489 • email: rlsensenig@goshen.edu

EDUCATION

Ph.D. University of California, Davis - Ecology, 2007
B.S. Eastern Mennonite University - Biology, International Agriculture, 1992

Biology Teaching Certification, Eastern Mennonite University, 1992
Earth Science Teacher Certification, James Madison University, 1998

TEACHING APPOINTMENTS

2011-present **Chair of Department of Biological Sciences**, Goshen College.

2016-present **Professor of Biology**, Director of Environmental Science Program, & Director of J.N. Roth Marine Biology Station, Goshen College

2011-2016 **Associate Professor of Biology**, Director of Environmental Science Program, & Director of J.N. Roth Marine Biology Station, Goshen College

2012; 2016 **Faculty Chair**, Goshen College

2011 & 2014 **Tanzania Study Service Term Co-director**, Led the 2011 & 2014 SST trips to Tanzania.

2007-2010 **Assistant Professor of Biology**, Director of Environmental Science Program, & Director of J.N. Roth Marine Biology Station, Goshen College

2006-07 **Chancellor's Teaching Fellowship** (Selected as one of two graduate students to develop and team-teach a class: AMR 135, *Ecology of grassland and savanna herbivores*) University of California, Davis

1995-01 **Ecology / Honors Earth Science Secondary Teacher**, Harrisonburg High School Harrisonburg, Virginia

1998-00 **Coast to Coast co-founder**
A science research trip using the nation as our classroom
Co-founded and co-directed the *Coast to Coast* program, a 10,000 mile 31-day field experience for high school students, which emphasized the integration of scientific study and data collection within a social and political context.

1995-97 **Massanutten Regional Governor's School Instructor**, Central Virginia Regional Governor's School, *'The Ecology of the Chesapeake Bay Watershed'*

PEER REVIEWED PUBLICATIONS

Bergstrom, B, **RL Sensenig**, D. Augustine, TP Young. 2018. Searching for cover: Soil enrichment and herbivore exclusion, not fire, enhance small-mammal abundance on East African savannas, *Ecosphere*, in review

- Sensenig, R.L.**, DM Kimuyu, JC Ruiz Guajardo, KE Veblen, C Riginos, KE Veblen, TP Young. 2017. Fire disturbance disrupts an acacia ant-plant mutualism in favor of a subordinate ant species. *Ecology* 98(5):1455–1464.
- Kimuyu, DM, **R.L. Sensenig**, RM Chira, JM Githaiga, and TP Young. 2017. Spatial scales influence long-term response of herbivores to prescribed burning in a savanna ecosystem. *International Journal of Wildland Fire* 26(4):287.
- Odadi, WO, Kimuyu DM, **Sensenig R.L.**, Veblen, KE, Riginos C, Young TP. 2016. Fire-induced negative nutritional outcomes for cattle when sharing habitat with native ungulates in an African savanna. *Journal of Applied Ecology* doi:10.1111/1365-2664.12785
- Pringle, RM, DM Kimuyu, **R.L. Sensenig**, TM Palmer, C Riginos, KE Veblen, TP Young. 2015. Synergistic effects of fire and elephants on arboreal animals in an African savanna. *Journal of Animal Ecology* 84:1637-1645.
- Kimuyu DM, **Sensenig R.L.**, Riginos C, Veblen KE, Young TP. 2014. Native and domestic browsers and grazers reduce fuel loads, fire temperatures, and acacia-ant mortality in an African savanna. *Ecological Applications* 24: 741-749
- Riginos, R., L.M. Porensky, K.E. Veblen, W.O. Odadi, **R.L. Sensenig**, F. Keesing, D. Kimuyu, M.L. Wilkerson, and T.P. Young. 2012. Lessons on the relationship between pastoralism and biodiversity from the Kenya Long-term Exclosure Experiment (KLEE). *Pastoralism* 2:1-22.
- Sensenig, R.L.**, E.A. Laca, and M.W. Demment. 2010. Spatial ecology of fire in an East African savanna: effects of burn size and patchiness on the foraging ecology of grazers of varying body size. *Ecology* 91:2898–2907.
- Gregory, N.C., **R.L. Sensenig**, and D.S. Wilcove, 2010. Effects of controlled fire and livestock grazing on bird communities in East African savannas. *Conservation Biology* 24(6):1606-1616.
- Demment, M.W., M.M. Young, and **R.L. Sensenig**. 2003. Providing micronutrients through food-based solutions: A key to human and national development. *Journal of Nutrition* 133 (11): 3879S-3885S.

OTHER PUBLICATIONS

- Sensenig, R.L. 2008. Fire Ecology in Laikipia, Kenya. Booklet distributed to Laikipia landowners, managers, and stakeholders. 79pp.
- Sensenig, R.L. 2007. Spatial ecology of fire in an East African savanna: effects of burn size and patchiness on the foraging ecology of grazers of varying body size. Dissertation. University of California, Davis.
- Contributing author, 2000. Exploring Earth Science in Shenandoah National Park: An Integrated Curriculum for Grades 7-12. National Park Service & United States Geological Survey, pp. 280.

SCIENTIFIC PRESENTATIONS

- Sensenig, R.L., E.A. Laca, and M.W. Demment. 2011. Body size and fire-grazing interactions in an East African savanna. Ecological Society of America, Austin Texas.
- Gerig, A., J. Good, and R.L. Sensenig. 2009. The effects of deer herbivory on Tallgrass prairie forbs. Indiana Academy of Sciences annual meeting, Bloomington, IN.
- Sensenig, R.L. 2008. Integrating allometric scaling, landscape ecology, and fire ecology to explain the coexistence of East African grazers, Indiana University South Bend
- Sensenig, R.L., N.C Gregory, and I. Kimathi, 2006. Fire Ecology Conference, Mpala Research Centre, Laikipia, Kenya.
- Sensenig, R.L., E.A. Laca, and M.W. Demment. 2006. Spatial ecology of fire in an East African savanna: effects of burn size and patchiness on the foraging ecology of grazers of varying

body size. Society for Conservation Biology International Convention, San Jose, CA
(Student Award Finalist)

Sensenig, R.L. 2004. Fire ecology in East Africa, Mpala Research Centre, Laikipia, Kenya.

Sensenig, R.L. 2003. Fire ecology and large herbivore ecology, Mpala Research Centre, Laikipia, Kenya.

OTHER PRESENTATIONS

Sensenig, R.L. 2012. International Field Research Experiences. Indiana College Biology Teachers Association meeting.

Sensenig, R.L. 2010. Tallgrass Prairie restoration: Moving from environmentalism to restoration ecology. Goshen Rotary.

Sensenig, R.L. 2009. Biology education in Indiana's prairies, Kenyan savannas, & the Florida Keys grassbeds. Retired Faculty Luncheon, Goshen College.

Sensenig, R.L. 2009. How much carbon can your prairie absorb? 40th Annual Conference Environmental Education Association of Indiana, Milford, IN.

Sensenig, R.L. 2009. Environmental Justice: A Natural Fit for Mennonites. Mennonite Convention, Columbus, Ohio.

Sensenig, R.L. 2009. Tallgrass prairie restoration. Master Gardeners Regional Conference, Merry Lea Environmental Learning Center

Sensenig, R.L. 2009. Tallgrass Prairie restoration. Workshop presented during GC Homecoming.

Sensenig, R.L. 2008. Ruminants to the rescue: can grazers help restore tallgrass prairies? Merry Lea Environmental Learning Center, Friends of Merry Lea Annual Dinner.

Sensenig, R.L. 2008. Grazing Tallgrass Prairies: Restoration of important historical processes. Soil & Water Conservation District regional training, Merry Lea.

Sensenig, R.L. 2008. Moving from environmental education to creation care: Case studies in transformative education, Jesse T. Byler Lecture Series Homecoming Lecture, Eastern Mennonite University

Sensenig, R.L. 2008. How does the incarnated Word of God orient my scholarship? Mennonite Education Agency University Conference, Eastern Mennonite University.

Sensenig, R.L. 2000. Coast to Coast: Using the nation as our classroom, Eastern Mennonite University

Sensenig, R.L. 2000. Coast to Coast: Using the nation as our classroom, Virginia Association of Science Teachers Conference.

Blosser, M.E., Jackson, and R.L. Sensenig, 1999. Coast to Coast 98: Using the nation as our classroom, National Association of Biology Teachers Convention, Reno, Nevada.

GRANTS & FELLOWSHIPS

2013-18 **Goshen College Mininger Grant**, Fire-Grazing Ecology in Kenya (\$2000 annually).

2012 **National Geographic Society**, "Ants, Elephants and Fire: a synergistic examination of savanna tree densities." Co-PI with Truman Young (\$26,950.00)

2012 **Goshen College Mininger Grant**, Grazing Ecology in Kenya (\$2000).

2011 **Goshen College Mininger Grant**, Grazing Ecology in Kenya (\$2000).

2010 **Goshen College Mininger Grant**, Multi-species grazing in tallgrass prairies (\$2000).

- 2008 **Indiana Academy of Science Research Grant**, The influence of white-tailed deer on establishment and long-term composition of plant communities in tallgrass prairie restorations (\$2950)
- 2006-07 **Switzer Foundation Environmental Fellowship** (\$13,000) (Selected as one of six PhD students from California) <http://www.switzernetwork.org/fellowships.taf>
- 2006-07 **UC Davis Chancellor's Teaching Fellowship** (Selected as one of five UCD graduate students to co-teach a university course with a faculty mentor.)
- 2006-07 **Office of the President's Dissertation Year Fellowship** University of California, Davis (declined)
- 2004 **National Science Foundation Dissertation Improvement Grant**, Spatial Ecology of Fire in an East African Savanna: Effects of Burn Size and Patchiness on the Foraging Ecology of Herbivores of Varying Body Size (\$13,000)
- 2003-06 **National Science Foundation Graduate Research Fellowship** Spatial Ecology of Fire in an East African Savanna: Effects of Burn Size and Patchiness on the Foraging Ecology of Herbivores of Varying Body Size (\$89,000 stipend 3 years, plus tuition)
- 2001-03 **Research Assistantship** Agronomy & Range Science Department, University of California, Davis (\$36,000 plus tuition)
- 2002-04 **UC Davis Grants:** Jastro Shields research grants, (2002, 2003, & 2004 total: \$7,500)
- 1999 **Toshiba American Foundation Grant**, Planting for the Future Greenhouse Project, (\$7500)

HONORS & AWARDS

- 2012-13 **Educator of the Year**, Elkhart County Soil & Water Conservation District.
- 2006-07 **Achievement Reward for College Scientists**, Northern California Chapter (\$7,500)
- 2006 **Student Award Finalist**, Society for Conservation Biology 20th Annual Meeting, San Jose, CA, Spatial ecology of fire in an East African savanna: effects of burn size and patchiness on the foraging ecology of grazers of varying body size.
- 1999 **National Educator Award**, Milken Family Foundation, (Chosen as one of 172 teachers from across the nation to receive a \$25,000 teaching award by the Milken Family Foundation and the Virginia Department of Education)
- 1999 **Earth Science Teacher of the Year**, Virginia Association of Science Teachers
- 1999 **Ray A. Kroc Teacher Achievement Award**, Chosen by the 1999 Ray A. Kroc Student Scholar, Mr. Hanley Chiang, as the teacher most influential in his education.
- 1999 **Teacher of the Year**, Regional winner, Virginia National Teacher Training Institute

1997 **Teacher of the Year**, American Association of University Women regional teacher of the year, Virginia.

PROFESSIONAL ASSOCIATIONS

Ecological Society of America
Indiana College Biology Teachers Association
Indiana Academy of Science
Midwest Religion & Science Society
East African Wildlife Society
Laikipia Wildlife Forum Member, Kenya

ACADEMIC SERVICE

Presidential Search Committee, 2016-17
Faculty Chair, Goshen College, 2012-13; 2016-17
School of Nursing and Sciences co-chair, Goshen College, 2011-2013; 2016-17
Academic Dean Search Committee, 2016-17
General Education Task Force, 2009-2015, Goshen College
Midwest Religion & Science Society Executive Committee, 2008-present
Teaching Education Advisory Committee, Goshen College, 2008-2015
Ecological Stewardship Committee, Goshen College, 2007-present
Au Sable Academic Council Member, 2007-present
Psychology Department Search Committee, Goshen College, 2008-09
Biological Sciences Department Search Committee, Goshen College, 2007-09

OUTREACH

Elkhart River Restoration Association Board Member, 2015-present

Community Clean Water Project (CCWP) director, 2009-present

Collaborate with local volunteers, the Elkhart County Soil & Water Conservation District, and a local software company (Hertzler Systems) to implement long-term chemical and biological monitoring of the Elkhart River.

Science Olympiad, 2007-present

Assist in the Goshen College Science Olympiad contest for local high school students

Bluffton University Research Grant Reviewer, 2010

Reviewed and evaluated faculty grants for summer research projects.

Fire Ecology Conference, 2006

Organized and sponsored a Fire Ecology Meeting at Mpala Research Centre that brought together more than 40 landowners, scientists, and conservationists from Laikipia, University of Nairobi, Mpala Research Centre, Moi University, and Kenya Forestry Department to discuss findings of my dissertation project.

Volunteer, The Nature Conservancy, 2003

Volunteered with The Nature Conservancy to help implement prescribed burns for restoration and research, Wildland Fire Suppression Red Card Certified, 2003

Reviewer: *Journal of Tropical Biology, Grass & Forage Science, Wetlands, Ecology & Evolution*

IGERT Speaker Search Committee, 2002

Served on the committee to select and recruit nationally and internationally recognized scientists to give lectures as part of the Interdisciplinary Speaker Series on Invasion Biology (IGERT), as part of the 2002 UCD Ecology and Evolution Seminar Series

Commencement Speaker, Harrisonburg High School Graduation, 2002

Invited to return to HHS to give the commencement address to the graduating class of 2002
Virginia Department of Education Video, 2001

I was invited to be interviewed and featured in a university recruitment video: "Three young teachers share their beliefs and hopes for the future of public education"
(<http://www.pen.k12.va.us/VDOE/newvdoe/teached.html>)

Governor's School Planning Curriculum Task Force, 2000

Massanutten Governor's School for Integrated Environmental Science and Technology
Assisted in developing the educational philosophy, instructional goals, and curricular content for a year-long Governor's school that serves as a magnet school for gifted students from central Virginia

Virginia State Department of Education Curriculum Consultant, 2000

Invited by the VA State Department of Education to review and analyze the Earth Science curricula of all public colleges and universities in Virginia, which offer licensure in Secondary Earth Science Teaching

Public Television Show Panel Member, 2000

Member of panel discussion regarding state standards of learning sponsored by the Virginia State Department of Education and Public Television of Virginia. National, state, and local presentations, 1998-2000,

Envirothon Coach, 1999 Envirothon Virginia State Champions (13 place finish in the National Canon Envirothon), 1998 & 2000 State Runner-up

Exploring Earth Science in Shenandoah National Park, 1996-97

Shenandoah National Park (SNP) Education officers, United States Geological Survey (USGS) geologists, and secondary Earth Science teachers from across VA collaborated to develop teaching modules to encourage teachers to utilize the SNP in their classroom curricula

Project Wet Certified Instructor, 1996

As a certified Project Wet instructor I trained other primary and secondary teachers in how to incorporate watershed studies and activities in their classrooms
(<http://www.projectwet.org/>)

Super Saturdays Instructor, 1995

Harrisonburg City Schools Developed the curriculum for and taught 'Hemlocks, Juncos, and Me', an enrichment field course for elementary school students highlighting the "living" laboratory of the Shenandoah National Park