

NSF-style Biographical Sketch – James Joseph Smith (Biology Education Focus; Aug. 31, 2016)

Professional Preparation

Undergraduate:	Macalester College, St. Paul, MN	Chemistry	B.A. 1979
Graduate:	Michigan State University, E. Lansing, MI	Botany & Plant Pathology	Ph.D. 1985
Post-Doctoral	Univ. of North Carolina at Chapel Hill	Microbiology & Immunology	1985-1987
	Michigan State University	Cell & Molecular Biology	1987-1989
	Michigan State University	Evolutionary Biology	1989-1991

Academic/Professional Appointments

2012 -	Professor, Lyman Briggs College, Department of Entomology, and Department of Integrative Biology (formerly Zoology), Michigan State University, E. Lansing, MI
2006 - 2012	Associate Professor, Department of Entomology, Michigan State University, E. Lansing, MI
2002 - 2012	Associate Professor, Lyman Briggs College (formerly School), and Department of Zoology, Michigan State University, E. Lansing, MI
1996 - 2002	Assistant Professor, Lyman Briggs School of Science, Michigan State University, E. Lansing, MI
1996 - 2002	Assistant Professor, Department of Zoology, Michigan State University, E. Lansing, MI
1991- 1996	Research Assistant Professor (non-tenure stream), Department of Zoology, Michigan State University, E. Lansing, MI
1989-1991	Research Associate, Department of Zoology, Michigan State University, E. Lansing, MI
1987-1989	Visiting Research Associate, MSU-DOE Plant Research Laboratory, Michigan State University, E. Lansing, MI
1985-1987	Post-Doctoral Trainee, Department of Microbiology and Immunology, University of North Carolina, Chapel Hill, NC
1979-1985	Graduate Research Assistant, MSU-DOE Plant Research Laboratory, Michigan State University, E. Lansing, MI

Products

(i) *Products closely related to the proposed project*

- Smith JJ**, Johnson WR, Lark AM, Mead LS, Wisner MJ, Pennock RT. 2016. An Avida-ED digital evolution curriculum for undergraduate biology. *Evolution: Education and Outreach*, 9(1), 1-11; (DOI: 10.1186/s12052-016-0060-0)
- Burmeister AR, **Smith JJ**. 2016. Evolution across the curriculum: A key and convenient time to change microbiology education. *Journal of Microbiology & Biology Education*, 17: 252-260. (DOI: <http://dx.doi.org/10.1128/jmbe.v17i2.988>)
- Heidemann MK, #White PJT, **Smith JJ**. 2016. "Evolution in Action." Published Case Study and Teaching Notes, National Center for Case Study Teaching in Science, University at Buffalo, State University of New York.
- White PJT, Heidemann MK, **Smith JJ**. 2015. A cross-course investigation of integrative cases for evolution education. *Journal of Microbiology & Biology Education*, 16: 157-166; doi: <http://dx.doi.org/10.1128/jmbe.v16i2.876>.
- Heidemann MK, White PJT, **Smith JJ**. 2014. "The evolution of color vision in monkeys: from nucleotides to ecology." Published Case Study and Teaching Notes, National Center for Case Study Teaching in Science, University at Buffalo, State University of New York.
- White PJT, Heidemann MK, **Smith JJ**. 2013. A new integrative approach to evolution education. *BioScience*, 63: 586-594.
- Smith JJ**, Cheruvilil KS, Auvenshine S. 2013. Assessment of student learning associated with tree-thinking in an undergraduate introductory Organismal Biology course. *CBE Life Sciences Education*, 12: 542–552.
- Smith JJ**, Baum DA, Moore A. 2009. The need for molecular genetic perspectives in evolutionary education (and vice versa). *Trends in Genetics*, 25: 427-429.

(ii) *Other significant products*

- Hamerlinck G, Hulbert D, Hood GR, **Smith JJ**, Forbes AA. 2016. Histories of host shifts and cospeciation among free-living parasitoids of *Rhagoletis* flies. *Journal of Evolutionary Biology*, doi: 10.1111/jeb.12909. [Epub ahead of print].
- Hood GR, Forbes AA, Powell T, Egan SP, Hamerlinck G, **Smith JJ**, Feder JL. 2015. Sequential divergence and the multiplicative origin of community diversity. *Proceedings of the National Academy of Sciences of the United States of America*, 112: E5980-E5989; doi:10.1073/pnas.1424717112.
- Frayser MF, Hulbert D, Satar S, **Smith JJ**. 2015. Phenological attributes and phylogenetic relationships of *Rhagoletis juniperina* Marcovitch (Diptera: Tephritidae) in the Great Lakes region. *The Great Lakes Entomologist*, 48: 67-78.
- Smith JJ**, Powell THQ, Teixeira L, Armstrong WO, McClowry RJ, Isaacs R, Hood GR, Feder JL, Gut L. 2014. Genetic structure of Cherry Fruit Fly (*Rhagoletis cingulata*) populations across managed, unmanaged, and natural habitats. *Entomologia Experimentalis et Applicata*, 150: 157–165; DOI: 10.1111/eea.12148.
- Bray AM, Bauer LS, Poland TM, Haack RA, Cognato AI, **Smith JJ**. 2011. Genetic analysis of emerald ash borer (*Agilus planipennis* Fairmaire) populations in Asia and North America. *Biological Invasions*, 13: 2869-2887.
- Forbes AA, Powell THQ, Stelinski LL, **Smith JJ**, Feder JL. 2009. Sympatric speciation cascades across trophic levels. *Science*, 323: 776-779.

Synergistic Activities

1. *Evolution Education Materials Development, Dissemination and Research*: Served as PI on an NSF-TUES project entitled, “Integrative Case Studies in Evolution Education” (Dr. Merle Heidemann, co-PI; Dr. Peter White, project post-doc) that involved the development and testing of a set of online case studies (<http://www.evo-ed.org>) to help students learn evolutionary principles. Currently serve as co-PI on an NSF IUSE project, Active LENS (Rob Pennock, PI), involving development of curricula for and dissemination of Avida-ED (<http://avida-ed.msu.edu>), an artificial life platform for helping students learn evolution principles and science process skills. Led five separate workshops in 2015 for college biology teachers in the US and Canada in support of these two initiatives.
2. *Teaching Biology in MSU’s Lyman Briggs Residential College*: Primary appointment in the Lyman Briggs (residential) College at MSU involves teaching Introductory Cell and Molecular Biology (LB145; <http://www.msu.edu/course/lb/145/smith/fl14>) using active learning pedagogies in a student-learning-centered teaching model. I teach labs that are multi-week inquiry-based laboratories, which emphasize hypothesis formation and testing, data analysis, and scientific communication.
3. *Evolution Education and Outreach*: I am active in Evolution Education and Outreach activities both locally and nationally. I am on the Education committee of the Society for the Study of Evolution. I served as co-PI (with Dr. Norman Johnson and Dr. Louise Mead) of the Communicating the Relevance of Human Evolution Working Group at the NSF-funded National Evolutionary Synthesis Center (NESCent) in Durham, NC, which met from 2010 – 2015, and led to the development of a senior seminar on Evolutionary Medicine that I’ve now taught three separate times (<http://www.msu.edu/course/lb/492/smith/s15/evolmed>).
4. *Evolutionary Biology Research*: I maintain an evolutionary entomology research program at Michigan State in which my students and I work on questions pertaining to the evolution of flies in the tephritid genus *Rhagoletis*. A number of undergraduate students from the Lyman Briggs College have worked with me as research assistants in the lab and in the field.