

**CURRICULUM VITAE - James J. Smith**  
**August 2018**

Michigan State University  
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**EDUCATION**

BA Macalester College, St. Paul, Minnesota, Chemistry, 1979  
Ph.D. Michigan State University, E. Lansing, MI, Botany and Plant Pathology, 1985  
Research Supervisor: Derek T.A. Lampert, Dissertation Title: Extensin Precursors from the Cell Surface of Intact Tomato Cell Suspension Cultures

**PROFESSIONAL EXPERIENCE**

2012- Professor, Lyman Briggs College, and Departments of Entomology and 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

**TEACHING EXPERIENCE**

*Lyman Briggs College (formerly School of Science)*

[LB492 Senior Seminar: Evolutionary Medicine](#)

S17 (16 students); S15 (16); S13 (19); S11 (20)

[LB348 Research Experiences in Biology: Exploring Genomes and Personal Genomics Data](#)

S18 (6 students); S17 (12 students)

[LB492 Senior Seminar: DNA Sequencing - Technology and Applications](#)

S15 (16 students)

[LB494 Independent Research: The Popcorn Course](#)

S12 (7 students), S11 (8)

[LB145 Introductory Cell and Molecular Biology](#)

S18 (46 students); F14 (39 students); S14 (100 students); S13 (20); F12 (30); S12 (66), F10 (30), S10 (131), F08 (77), S08 (125), S04 (115), S02 (~100), S99 (~100)

**LB144 Introductory Organismal Biology**

S07 (109 students), F06 (113), S06 (122), F04 (140), S03, F02, S01, F00, F98, S98, S97, F96 (approx. 110 - 140 students/semester)

**LB492 Senior Seminar: Biology of Complex Human Behaviors**

S05 (17 students), S03 (18)

**LB492 Senior Seminar: Critical Analysis of Controversies in Evolution**

F98 (15 students).

**LB246 Experimental Approaches in Biology: The Role of Biologists in Conservation Issues** S98 (21 students)

***Department of Zoology (now Integrative Biology)***

**IBIO(ZOL) 855 Molecular Evolution: Principles and Methods**

F17 (12 students); F15 (12); F13 (19); F11 (12), F09 (7), F07 (11), F05 (13), F03 (14), F01 (13), F99 (11), F97 (12), S95 (28)

***Study Abroad Programs***

**History of Science in England 2016: Breaking the Boundaries of Time and Space in the Age of Victoria.** Co-led program with Dr. Richard Bellon, July 2 – 23, 2016; 18 students.

How Victorian revolutions in science and technology (steam trains, telegraphs, etc.) shattered the customary constraints of time and space, allowing people, goods, and ideas to travel the world in unprecedented speed.

**History of Science in England 2013: Nature, Frankenstein, and the Age of Wonder.** Co-led program with Dr. Richard Bellon, June 30 – July 20, 2013; 24 students.

An exploration of the lives and work of British scientists in the Age of Wonder, a period where science, art, religion and politics mixed in a combusive brew.

**History of Science in England 2009: Exploring the Darwinian Revolution in England.** Co-led program with Dr. Richard Bellon and Dr. Robert Pennock, June 27 – July 17, 2009; 19 students.

This program took advantage of the 200th anniversary of Darwin's birth and the 150th anniversary of the publication of the Origin to investigate Darwin's revolution, paying particular attention to his life and work as a gentleman of science in imperial, industrial, reforming Victorian Britain.

**Biodiversity and Conservation in Panama 2006.** Co-led program with Dr. Jerry Urquhart, Dr. Chuck Elzinga and Dr. Aaron McCright, May 20 – June 10, 2006; 18 students.

An exploration of tropical habitats and human impacts upon them at three locations in Panama: the Canal Zone (Gamboa), the Caribbean Coast (Bocas del Toro), and the Cloud Forest (Los Quetzales).

**Undergraduate Advising**

Provide informal career counseling and advising for students in the Lyman Briggs College

**PROFESSIONAL AFFILIATIONS**

Entomological Society of America

Society for the Study of Evolution

Society of Systematic Biologists

Society for the Advancement of Biology Education Research

National Association of Biology Teachers

**FELLOWSHIPS, CONTRACTS AND GRANTS**

NSF-IUSE (Proposal # 1432563), "Active LENS: Learning Evolution and the Nature of Science using Evolution in Action", Robert T. Pennock, PI, Richard Lenski, Louise Mead, Charles Ofria, James J. Smith, co-PIs, \$2,315,695 (9/1/14 – 8/31/19; funded).

NSF-TUES (Proposal # 1043876), “Integrative Case Studies in Evolution Education”, James J. Smith, PI; Merle Heidemann, co-PI; Jerry Urquhart (LBC), Cheryl Murphy (LBC) and Barry Williams (ZOL), Senior Personnel, \$199,797 (3/1/11 – 2/28/14; funded).

SSE Outreach Award. “Science Supper: A Conversation About Evolution with Lansing area Biology Teachers”. Oct. 21, 2010, \$500.

Michigan GREEN, Grant award for March 1, 2007 – June 30, 2008, “Establishment and use of microsatellite loci to characterize EAB populations in North America and Asia”, Jim Smith, PI, \$35,000.

USDA-FS Research Joint Venture Agreement with MSU, 7/25/07, Project Title: Geographic Origin of North America's Emerald Ash Borer in Asia, Jim Smith and Leah Bauer (USDA Forest Service, North Central Forest Service, E. Lansing, MI), co-PIs, \$17,000 (amendment to the original agreement).

Michigan GREEN, Grant award for March 1, 2006 – June 30, 2007, “Population structure of cherry fruit fly in managed, unmanaged and natural habitats”, Larry Gut, Rufus Isaacs, Luis Teixeira, and Jim Smith, co-PIs, \$42,000.

USDA-FS Research Joint Venture Agreement with MSU, 12/13/04, Project Title: Geographic Origin of North America's Emerald Ash Borer in Asia, Jim Smith and Leah Bauer (USDA Forest Service, North Central Forest Service, E. Lansing, MI), co-PIs, \$25,000 (amendment to the original agreement).

USDA-FS Research Joint Venture Agreement with MSU, 8/21/03, Project Title: Geographic Origin of North America's Emerald Ash Borer in Asia, Jim Smith and Leah Bauer (USDA Forest Service, North Central Forest Service, E. Lansing, MI), co-PIs, \$25,000.

Michigan GREEN, Grant award for July 1, 2001 – June 30, 2002, “Development of DNA fingerprinting technology for identification and characterization of apple maggot and blueberry maggot”, continuation for a second year, \$12,500.

Michigan GREEN, Grant award for March 1, 2000 – June 30, 2001, “Development of DNA fingerprinting technology for identification and characterization of apple maggot and blueberry maggot”, \$25,000.

Washington Tree Fruit Research Commission, Grant award for April 1, 1999 – March 31, 2000, “Development of a PCR-based diagnostic test for distinguishing between the apple maggot fly, *Rhagoletis pomonella*, and the snowberry fly, *R. zephyria*“, Guy L. Bush, co-PI, \$39,750.

Michigan Department of Agriculture, Grant award for July 1, 1999 – Sept. 30, 1999, “Native *Vaccinium* spp. as a potential source of Blueberry maggot in the Great Lakes region”, David R. Smitley, co-PI, \$7,200.

Michigan Department of Agriculture, Grant award for July 1, 1998 – Sept. 30, 1998, “Native *Vaccinium* spp. infested by *Rhagoletis mendax* in blueberry producing regions”, David R. Smitley, co-PI, \$13,126.

Michigan Department of Agriculture, Grant award for July 1, 1997 – Sept. 30, 1997, “Distribution and host range of blueberry maggot in Michigan and the North Central US”, David R. Smitley, co-PI, \$14,326.

Michigan State University, International Studies and Programs, 1996, Special Foreign Travel Fund Award, \$550.

## HONORS AND AWARDS

American Association for the Advancement of Science, Fellow, February 2017.

Associated Students of Michigan State University, Senior Class Council, Outstanding Faculty Award, May 2015.

MSU Lyman Briggs College, Graduating Class of 2015, Honorary Faculty Award, May 2015.

Research Fellow in the American Society for Microbiology's (ASM) Biology Scholars Program, 2008-2009.

Sigma Xi, 2006.

MSU College of Natural Science Outstanding Academic Advisor Award, March 2005

Distinguished Membership, National Society of Collegiate Scholars, 1999

## PROFESSIONAL SERVICE

Board of Directors, BioQUEST, Inc., July 2017 – present (Treasurer, March 2018 – present)

Editorial Board, *CBE Life Sciences Education*, Jan. 2017 - present

Local Organizer, “Making Meaning through Modeling: Problem Solving in Biology”, BioQUEST Summer Workshop, East Lansing, MI, July 2017

Co-Leader, “Communicating the Relevance of Human Evolution” Working Group, National Evolutionary Synthesis Center (NESCent), Durham, NC, 2015; 2010-2012

Member, Education Committee of the Society for the Study of Evolution (SSE), 2013- present

Co-Organizer, Humans Without Borders: Evolutionary Processes at Work in Humans and their Relatives, Symposium Session at the AAAS Annual Meeting, Washington, DC, Feb. 2011.  
Member, Understanding Evolution (<http://evolution.berkeley.edu/>) Teacher Advisory Board, 2010-2011  
Member, "Tree Reasoning in Evolution Education" Working Group, NESCent, Durham, NC, 2007-2009

### ***Manuscript/Grant Reviewing***

Reviewer, *Arthropod-Plant Interactions*, 2017  
Reviewer, *The American Biology Teacher*, 2017, 2016, 2015  
Reviewer, *Science & Education*, 2017  
Reviewer, *CBE Life Sciences Education*, 2017 (3), 2015 (3), 2013  
Reviewer, *PLoS One*, 2017 (2), 2016, 2015 (2)  
Reviewer, *Evolution Education and Outreach*, 2017, 2016, 2015, 2014, 2011  
Reviewer, *Agricultural and Forest Entomology*, 2016  
Reviewer, *Archives of Phytopathology and Plant Protection*, 2016  
Reviewer, National Center for Case Study Teaching in Science, 2016  
Reviewer, *Bulletin of Entomological Research*, 2015  
Reviewer, *Science Education*, 2015  
Reviewer, *Bulletin of Insectology*, 2015  
Reviewer, *Journal of Economic Entomology*, 2015, 1997  
Reviewer, NSF Division of Environmental Biology - Evolutionary Genetics (*ad hoc*), 2015  
Reviewer, *Biological Journal of the Linnean Society*, 2014, 2013, 1998  
Reviewer, *Pest Management*, 2013  
Reviewer, *BMC Evolutionary Biology*, 2013  
Reviewer, *Evolutionary Biology*, 2013, 2012  
Reviewer, *Science*, 2012  
Reviewer, *Biological Invasions*, 2011  
Reviewer, *Frontiers in Ecology and the Environment*, 2010  
Reviewer, *Proceedings of the Royal Society, Series B.*, 2009  
Reviewer, *European Journal of Entomology*, 2008  
Reviewer, *American Society of Horticultural Science*, 2008  
Reviewer, *Evolution*, 2007  
Reviewer, *Genetica*, 2006  
Reviewer, USDA/NRICGP Plant/Pest Interactions-Entomology Competitive Grants Program, 2004, 2001, 2000, 1997, 1992  
Reviewer, *International Journal of Learning*, 2003 (2)  
Reviewer, *Genome*, 2002  
Reviewer, *Molecular Phylogenetics and Evolution*, 1999, 1997  
Reviewer, *Molecular Biology and Evolution*, 1999  
Reviewer, *Tephritidae: Phylogeny and Evolution of Behavior*, CRC Press, 1998.  
Reviewer, *Biotechniques*, 1995  
Reviewer, *Journal of Molecular Evolution*, 1994  
Reviewer, *Plant Physiology*, 1985-1987

## **RESEARCH ADVISING**

### **Michigan State University**

#### **Post-Doctoral and Visiting Scholars:**

Severyn Korneyev, Univ. Kiev, Fulbright Scholar, Sept. 2017 – May 2018  
Shamal Al-Muftti, Univ. Duhok (Iraq), Aug. 2015 – Nov. 2015  
Serdar Satar, Çukurova University, Adana, Turkey, Aug. 2012 – Nov. 2012

#### **Ph. D. Guidance Committees (as chair):**

Dan Hulbert, Entomology, Chair of Guidance Committee, Ph. D. in progress  
Cory Kohn, Integrative Biology, Chair of Guidance Committee, Ph. D. in progress

Alicia Bray, Entomology, Co-Chair of Guidance Committee, Ph. D. completed August 2009  
Todd Tarrant, Zoology, Chair of Guidance Committee, Ph. D. completed December 2005.  
Vesna Gavrilovic, Zoology, Chair of Guidance Committee, Ph. D. completed May 2001.

Ph. D. Guidance Committees (as member):

Shannon Nicely, Integrative Biology, Member of Guidance Committee (Ph. D. in progress)  
Zachary Noel, Plant and Microbial Sciences, Member of Guidance Committee (Ph. D. in progress)  
John Bosco Keven, Microbiology and Molecular Genetics, Member of Guidance Committee (Ph. D. in progress)  
Paula Marquardt, Plant Biology, Member of Guidance Committee (Ph.D. in progress)  
Keith Mason, Entomology, Member of Guidance Committee (Ph. D. in completed August 2018)  
Knut Gunderson, Entomology, Member of Guidance Committee (Ph. D. completed May 2018)  
Amanda Lorenz, Entomology, Member of Guidance Committee (Ph. D. completed July 2017)  
Jie Wang, Plant and Microbial Sciences, Member of Guidance Committee (Ph. D. completed July 2016)  
Alejandro Rojas, Plant and Microbial Sciences, Member of Guidance Committee (Ph. D. completed July 2016)  
Amy Lark, Teacher Education, Member of Guidance Committee (Ph.D. completed July 2014)  
David Malakauskas, Entomology, Member of Guidance Committee Ph.D. completed April 2013  
Lina Quesada, Plant Pathology, Member of Guidance Committee, Ph. D. completed November 2010  
Aaron Smith, Entomology, Member of Guidance Committee, Ph. D. completed June 2010  
Orlando Alvarez, Plant Biology, Member of Guidance Committee, Ph. D. completed May 2010  
Jiri Hulcr, Entomology, Member of Guidance Committee, Ph. D. completed April 2009  
Theng Theng Fong, Crop and Soil Sciences, Member of Guidance Committee, Ph. D. completed December 2008  
Joonyul Kim, Biochemistry and Molecular Biology, Member of Guidance Committee, Ph. D. completed December 2007  
Gabe Ording, Entomology, Member of Guidance Committee, Ph. D. completed August 2007  
Merritt Gilliland, Zoology, Member of Guidance Committee, Ph. D. completed August 2006.  
Chris Wilson, Zoology, Member of Guidance Committee, Ph. D. completed May 2005.  
Rainy Inman, Fisheries and Wildlife, Member of Guidance Committee, Ph. D. completed May 2005.  
Anna Wiese, Plant Biology, Member of Guidance Committee, Ph. D. completed July 2003.  
Jaimie Houghton, Horticulture, Member of Guidance Committee, Ph. D. completed November 2001.  
John Jenkins, Zoology, Member of Guidance Committee, Ph. D. completed, June 1996.

Master's Thesis Guidance Committees:

Gina Sari, Entomology, Member of Guidance Committee, MS completed August 2018  
Chrissy McTavish, Plant Biology, Member of Guidance Committee, MS completed May 2016  
Tracy MacMillan, Zoology, Member of Guidance Committee, MS completed December 2006  
Valerie Vinoversky, Zoology, Member of Guidance Committee, MS completed June 2005  
Erik Foster, Entomology, Member of Guidance Committee, MS completed June 2004.  
Matt Durkin, Botany and Plant Pathology, Member of Guidance Committee, MS completed January 2003.  
Arum Stump, Entomology, Member of Guidance Committee, MS completed Fall 2000.  
Matt Jaycox, MS Program, Zoology, Chair of Guidance Committee, Program not completed (left for Medical School after 2 years).  
Joe Crossno, Zoology, Chair of Guidance Committee, BS/MS completed Summer 1999.  
Suzanne Gorospe, Zoology, Member of Guidance Committee, MS completed, Fall 1994.

Undergraduate Honors Thesis Committee:

Farhan Bhatti, Dept. of Economics, Thesis completed, Spring 2006  
Bryan Judge, Dept. of Zoology, Thesis completed, Spring 1994

Undergraduate researchers

Ben Luttinen (Spring 2018)	Craig Carter
Nick Zonca (Summer 2017 – Spring 2018)	Mike Grillo
Kelly Geith (Summer 2017 – Spring 2018)	Liz Kruszewski
Kyleigh Buckley (Fall 2015 – Spring 2016)	Jessica Jo Wolf
Morgan Potter (Summer 2014 – Spring 2016)	Vince Borla
Sydney Barosko (Fall 2013 – Fall 2015)	Joe Crossno
Megan Frayer (Fall 2010 – Spring 2014)	Chhaya Patel
William Armstrong (Fall 2010 – Spring 2013)	Arman Forouzannia
Parita Shah (Fall 2008 – Spring 2010)	Scott Demers
Bob McCowry (Spring 2008 – Summer 2009)	Teri Genshorek
Rob Brown	Roberto Bello
Isaiah Scott	Royce Peterman
Stephanie Drob	Erik Bailey
Andrew Garinger	
Stephen Gottschalk	
Megan Duffy	
Dan Ducat	

**PUBLICATIONS**

(Key: \* Peer-reviewed, # Ph. D. or post-doctoral advisee author, @ Undergraduate author)

**In Review**

\*#Hulbert D, Jackson MD, Hood GR, **Smith JJ**. In review. Description of a new *Rhagoletis* (Diptera: Tephritidae) species in the *tabellaria* species group.

\*Sweeder R, @Martinez B, **Smith JJ**. In review. Academic-Industry Partnership to Provide a Course-based Undergraduate Research Experience (CURE) in Food Science.

**In Press**

\*St. Jean G, Hood GR, Eagan SP, Powell THQ, Schuler H, Doellman MM, Glover M, **Smith JJ**, Yee W, Goughnour R, Rull J, Aluja M, Feder JL. 2018. Limited genetic evidence for host plant-related differentiation in the Western cherry fruit fly, *Rhagoletis indifferens*. *Entomologia Experimentalis et Applicata*, DOI:10.1111/eea.12712

**Published**

\*#Kohn C, Wiser M, Pennock RT, **Smith JJ**, Mead LS. 2018. A digital technology-based introductory biology course designed for engineering and other non-life sciences STEM majors. *Comput Appl Eng Educ*. 2018;1–12. <https://doi.org/10.1002/cae.21986>

\*Doellman MM, Ragland GJ, Hood GR, Meyers PJ, Egan SP, Powell THQ, Lazorchak P, Glover MM, Tait C, Schuler H, Hahn DA, Berlocher SH, **Smith JJ**, Nasil P, Feder JL. 2018. Genomic differentiation during Speciation-with-Gene-Flow: Comparing geographic and host-related variation in divergent life history adaptation in *Rhagoletis pomonella*. *Genes* 2018, 9, 262; doi:10.3390/genes9050262

\*Lark A, Richmond G, Mead LS, **Smith JJ**, Pennock RT. 2018. Exploring the relationship between experiences with digital evolution and students' scientific understanding and acceptance. *The American Biology Teacher* 80:74-86. doi:10.1525/abt.2018.80.2.74

- \*Sim SB, Doellman MM, Hood GR, Yee WL, Powell THQ, Schwarz D, Goughnour RB, Egan SP, Jean GS, **Smith JJ**, Arcella TE, Dzurisin JDK, Feder JL. 2017. Genetic Evidence for the Introduction of *Rhagoletis pomonella* (Diptera: Tephritidae) into the Northwestern United States. *Journal of Economic Entomology*, 110(6): 2599-2608. doi:10.1093/jee/tox248
- \***Smith JJ**, Johnson WR, Lark AM, Mead LS, Wiser 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>)
- \*@Conley JE, @Meisel AJ, **Smith JJ**. 2016. Using M&M's to Model Sanger's Dideoxy DNA Sequencing Method. *American Biology Teacher*, 78: 516–522. (DOI: 10.1525/abt.2016.78.6.516)
- \*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*, 29: 1766–1779. (doi: 10.1111/jeb.12909)
- \*Wiser MJ, Mead LS, **Smith JJ**, Pennock RT. 2016. Comparing Human and Automated Evaluation of Open-Ended Student Responses to Questions of Evolution. In: Artificial Life XV: Proceedings of the Fifteenth International Conference on Artificial life. pp. 116 - 122. MIT Press. (arXiv:1603.07029v1)
- \*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.
- \*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.
- \*#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>.
- \*Arcella R, Hood GR, Powell THQ, Sim SB, Yee WL, Schwarz D, Egan SP, Goughnour, **Smith JJ**, Feder JL. 2015. Hybridization and spread of the Apple Maggot Fly, *Rhagoletis pomonella* (Diptera: Tephritidae), in the Northwestern United States. *Evolutionary Applications* 8: 834–846. doi:10.1111/eva.12298
- \*@Fraye 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.
- \*Heidemann MK, #White PJT, **Smith JJ**. 2014. “Joel E. Greengiant learns about peas: from nucleotides to selection.” Published Case Study and Teaching Notes, National Center for Case Study Teaching in Science, University at Buffalo, State University of New York.
- \*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.

- \***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*, DOI: 10.1111/eea.12148.
- \*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.
- \*#White PJT, Heidemann MK, Loh M, **Smith JJ**. 2013. Integrative cases for teaching evolution. *Evolution: Education and Outreach*.6:17. <http://www.evolution-outreach.com/content/6/1/17>.
- \*Luckie DL, **Smith JJ**, Cheruvilil KS, Fata-Hartley C, Murphy CA, Urquhart GR. 2013. The “Anti-Cookbook Laboratory”: Converting “Canned” Introductory Biology Laboratories to Multi-week Independent Investigations. *Tested Studies for Laboratory Teaching: Proceedings of the Association for Biology Laboratory Education*, 34: 196-213.
- \*Forbes AA, Satar S, Hamerlinck G, Nelson AE, **Smith JJ**. 2012. DNA barcodes and targeted sampling methods identify a new species and cryptic patterns of host specialization among North American *Coptera* (Hymenoptera: Diapriidae). *Ann. Entomol. Soc. Am.* 105: 608-612.
- \*Johnson NA, **Smith JJ**, Pobiner B, Schrein C. 2012. Why Are Chimps Still Chimps? *American Biology Teacher* 74: 74-80.
- \*#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.
- \***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.
- \***Smith JJ**, Cheruvilil KS. 2009. Using Inquiry and Tree-Thinking to "March Through the Animal Phyla". *Evolutionary Education and Outreach*, 2: 429-444.
- \*Forbes AA, Powell THQ, Stelinski LL, **Smith JJ**, Feder JL. 2009. Sympatric speciation cascades across trophic levels. *Science* 323: 776-779.
- \*Kim J, **Smith JJ**, Tian L, DellaPenna D. 2009. The evolution and function of carotenoid hydroxylases in Arabidopsis. *Plant and Cell Physiology*, 50: 463-479.
- \*Jacobs JL, Fasi AC, Ramette A, **Smith JJ**, Hammerschmidt RH, Sundin GW. 2008. Identification and onion pathogenicity of *Burkholderi cepacia* complex isolates from the onion rhizosphere and onion field soil. *Applied and Environmental Microbiology* 74 (10): 3121-3129. doi:10.1128/AEM.01941-07
- Smith JJ**. 2008. [Review of] Steve Nash, *Millipedes and Moon Tigers: Science and Policy in an Age of Extinction*. *Organization and Environment* 21: 94-96. doi:10.1177/1086026607313682
- \*#Gavrilovic V, Bush GL, Schwarz D, **Smith JJ**. 2007. *Rhagoletis zephyria* Snow (Diptera: Tephritidae) in the Great Lakes basin: A native insect on native hosts? *Ann. Entomol. Soc. Am.* 100(4): 474-482.



- \*Ma Z, **Smith JJ**, Zhao Y, Jackson RW, Arnold DL, Murillo J, Sundin GW. 2007. Phylogenetic Analysis of the pPT23A Plasmid Family of *Pseudomonas syringae*. *Applied and Environmental Microbiology* 73(4): 1287-1295.
- \*Humpala JF, Ostrom PH, Gandhi H, John R. Strahler JR, Walker AK, Stafford TW, **Smith JJ**, Voorhies MR, Corner RG, Andrews PC. 2007. Investigation of the protein osteocalcin of *Camelops hesternus*: sequence, structure and phylogenetic implications *Geochimica Cosmochimica Acta* 71: 5956–5967.
- Smith JJ**. 2006. [Review of] Alan Burdick, *Out of Eden: An Odyssey of Ecological Invasion*. *Organization and Environment* 19: 423-425.
- \***Smith JJ**, Jaycox MA, Smith M, Bush GL. 2005/6. Analysis of mitochondrial DNA and morphological characters in the subtribe Carpomyina (Diptera: Tephritidae). In: Biotaxonomy of Tephritoidea, *Israel Journal of Entomology*, 35-36: 317-340.
- \*Houghton-Thompson J, Prince HH, **Smith JJ**, Hancock JF. 2005. Evidence of hybridization between *Lythrum salicaria* (Purple Loosestrife) and *L. alatum* (winged loosestrife) in North America. *Annals of Botany* 96: 877-885.
- \*McGroarty E, Parker J, Heidemann M, Lim H, Olson M, Long T, Merrill J, Riffell S, **Smith J**, Batzli J, Kirschel D. 2004. Supplementing Introductory Biology with on-line curriculum, *Biochemical and Molecular Biology Education* 32: 20-26.
- \*Feder JL, Berlocher SH, Roethele JB, Dambroski H, **Smith JJ**, Perry WL, Gavrilovic V, Filchak KE, Rull J, Aluja M. 2003. Allopatric genetic origins for sympatric host-plant shifts and race formation in *Rhagoletis*. *Proceedings of the National Academy of Sciences of the United States of America* 100: 10314-10319.
- \*Maxson-Stein K, McGhee GC, **Smith JJ**, Jones AL, Sundin GW. 2003. Genetic analysis of a pathogenic *Erwinia* sp. isolated from pear in Japan. *Phytopathology* 93: 1393-1399.
- \***Smith JJ**, Heidemann MK, Parker JM. 2003. Experiences in the creation and use of online learning guides for Introductory Biology, *International Journal of Learning* (Proceedings of The Learning Conference, London, UK, July 2003) 10: 1589-1603.
- \***Smith JJ**, #Gavrilovic V, Smitley DR. 2001. Native *Vaccinium* spp. infested by *Rhagoletis mendax* (Blueberry maggot; Diptera: Tephritidae) in the Great Lakes region: a potential source of inoculum for infestation of cultivated blueberries. *Journal of Economic Entomology*, 94: 1378-1385.
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## INVITED SEMINARS, WORKSHOPS AND TALKS

### 2018

“Evo-ED Cases - A Case-based Integrative Approach to Teaching Evolution”, Workshop presentation; Jim Smith (presenter), Peter J. T. White, Alexa Warwick, Louise Mead, co-authors. Invited workshop presentation at the BioQUEST/QUBES Summer Workshop, June 19, 2018, Harvey Mudd College, Claremont, CA.

“Avida-ED: An artificial life platform for teaching evolutionary principles and the nature of science”, Workshop presentation; Jim Smith (presenter), Cory Kohn, Louise Mead, Mike Wiser, and Rob Pennock, co-authors. Invited workshop presentation at the BioQUEST/QUBES Summer Workshop, June 19, 2018, Harvey Mudd College, Claremont, CA.

### 2017

"*Rhagoletis* flies beyond speciation (Diptera: Tephritidae): A species diagnostic, discovery of new species, and tracking an evolutionary radiation in juniper hosts", Entomology Seminar, Smithsonian National Museum of Natural History, Washington, DC, Dec. 7, 2017.

"*Rhagoletis* beyond speciation: Species diagnostics, new species, and an evolutionary radiation in juniper hosts (A sabbatical report)", MSU Dept. Entomology, Feb. 6, 2017.

### 2016

"*Rhagoletis* fruit flies beyond speciation: A species diagnostic, discovery of new species and tracking an evolutionary radiation in juniper hosts", University of Guelph, Department of Integrative Biology, November 15, 2016.

"Using Evo-ED cases and Avida-ED digital evolution as integrative, active-learning approaches to evolution education", University of Guelph, CBS Office of Educational Scholarship and Practice, November 15, 2016.

“Evo-ED: Integrative Cases for Teaching Evolution Across the Biology Curriculum”, Workshop presentation; Jim Smith (co-presenter w/ PJTW), Merle K. Heidemann and Peter J. T. White, co-authors, invited workshop presentation at the 2016 National Academies Special Topics Summer Institute on Quantitative Biology, June 20, 2016, North Carolina State University, Raleigh, NC.

“Avida-ED: An artificial life platform for teaching evolutionary principles and the nature of science”, Workshop presentation; Jim Smith (co-presenter w/ Cory Kohn), Louise Mead, Mike Wiser, Cory Kohn, and Rob Pennock, co-authors, invited workshop presentation at the 2016 National Academies Special Topics Summer Institute on Quantitative Biology, June 20, 2016, North Carolina State University, Raleigh, NC.

"Using Evo-ED Cases and Avida-ED Digital Evolution as Integrative, Active Learning Approaches to Evolution Education", Emory University, Department of Biology, March 15, 2016.

### 2015

"Tree-thinking, Integrative Cases, and Avida-ED: Active, Engaging, Inquiry-based Approaches to Evolution Education", Department of Biology Seminar Series, Purdue University, Nov. 3, 2015.

“Evo-ED: Integrative Cases for Teaching Evolution Across the Biology Curriculum”, Workshop presentation; Jim Smith (presenter), Merle K. Heidemann and Peter J. T. White, co-authors, invited workshop presentation at the HHMI/BioQUEST/SCN Conference, June 13, 2015, Harvey Mudd College, Claremont, CA.

“Avida-ED: An artificial life platform for teaching evolutionary principles and the nature of science”, Workshop presentation; Jim Smith (presenter), Wendy Johnson, Louise Mead, Mike Wiser, Amy Lark, and Rob Pennock, co-authors, invited workshop presentation at the HHMI/BioQUEST/SCN Conference, June 13, 2015, Harvey Mudd College, Claremont, CA.

### 2013

"An Integrative Approach to Teaching Evolution", Program in Ecology, Evolution and Conservation Biology Seminar Series, University of Illinois Urbana-Champaign, Sept. 18, 2013.

“Evolution Education in Action”, Keynote Address at the BEACON Congress, Mich. St. Univ., Aug. 14, 2013.

“A Case-based Approach to Teaching Evolution”, Invited presentation at the “Avoiding Extinction in the Classroom: a Professional Development Workshop for Undergraduate Educators”, held in conjunction with the annual meeting of the Society for the Study of Evolution (Peter White\* and Jim Smith\*, co-presenters), Snowbird, UT, June 21, 2013.

“A Case-based Approach to Teaching Evolution”, Invited presentation at the “Evo101: Teaching Evolution” workshop for K-12 teachers, held in conjunction with the annual meeting of the Society for the Study of Evolution (Peter White\* and Jim Smith\*, co-presenters), Snowbird, UT, June 22, 2013.

### 2012

“Statistics (and SoTL Projects): It’s as much *who* you know, as *what* you know!”, invited presentation in the Workshop sessions associated with the ASM-sponsored Biology Scholars Research Residency, Washington, DC, July 26, 2012.

“Evolution Case Studies: Integrating Concepts Across the Introductory Biology Curriculum”, invited talk at the Introductory Biology Project Summer Research Conference, Washington, DC, June 30, 2012.

### 2011

“21<sup>st</sup> Century Biology Teaching for 21<sup>st</sup> Century Biology Students: Perspectives from Holmes Hall”. Lyman Briggs College, Nov. 11, 2011.

“Molecular Evolutionary Genetic Relationships in *Rhagoletis* Fruit Flies (Diptera: Tephritidae): Theoretical and Applied Perspectives”. Michigan State University, Department of Entomology, Sept. 26, 2011.

“Activities of the Communicating the Relevance of Human Evolution NESCent Working Group”. *SSE Education Workshop - Evolutionary Medicine*, Annual Meeting of the Society for the Study of Evolution, Norman, OK, June 18, 2011.

“Statistics (and SoTL Projects): What do I really need to know and what should I outsource”, invited presentation in the Workshop sessions associated with the ASM-sponsored Biology Scholars Research Residency, Washington, DC, July 14, 2011.

“Classroom Research and Research Question: Setting up a strong research design and drafting a question”, invited presentation in the Workshop sessions associated with the ASM-sponsored Biology Scholars Research Residency, Washington, DC, July 13, 2011.

#### 2010

“Using a “Genotype to Phenotype” Approach to Improve Students’ Understanding of Evolution”, invited presentation at the Teaching Workshop associated with the AIBS-sponsored Molecular Evolution Symposium, Annual Meeting of the National Association of Biology Teachers (NABT), Minneapolis, MN, Nov. 5-8, 2010.

“Using Inquiry and “Tree Thinking” to teach the “March through the Phyla” in a Hypothesis-driven, Evolutionary Context”. *Evolution 101 Workshop for K-12 Educators*, Annual Meeting of the Society for the Study of Evolution, Portland, OR, June 24-28, 2010.

“Molecular Phylogenies – Using DNA sequences and “Tree Thinking” to teach Introductory Biology in an evolutionary context”. *Learn Something New*, American Society for Microbiology Conference for Undergraduate Educators, San Diego, CA, May 20-24, 2010.

#### 2009

“Incorporating Molecular Evolution Concepts into Introductory Organismal Biology: A Need and a Problem”. Society of Molecular Biology and Evolution, Symposium on Teaching Molecular Evolution, University of Iowa, Iowa City, IA, Thursday June 4, 2009.

#### 2007

“Using Inquiry and Tree-thinking to March Through the Phyla. Michigan State University, Center for Research in College Science Teaching and Learning, Thursday October 11, 2007.

#### 2006

“Evo-Devo: An evolutionary synthesis for the 21<sup>st</sup> century. Michigan State University Museum, Thursday February 9, 2006.

"Studying basic and applied biological questions from a *Rhagoletis* spp. (Diptera: Tephritidae) perspective” Michigan State University Department of Entomology, Monday January 30, 2006.

#### 2005

“Introduction to and Overview of the Nature/Nurture Symposium.” Lyman Briggs School of Science Nature-Nurture Symposium, Michigan State University, E. Lansing, MI, March 25, 2005.

#### 2002

“Gene Trees, AFLPs, and *Rhagoletis* Evolution.” Ecology, Evolutionary Biology, and Behavior Seminar Series, Michigan State University, E. Lansing, MI, March 20, 2002.

Using Molecular Phylogenies to Study Evolutionary and Applied Problems in the Genus *Rhagoletis* (Diptera: Tephritidae), "USDA, Wapato, WA, January 23, 2002.

2001

Using Molecular Phylogenies to Study Evolutionary and Applied Problems in the Genus *Rhagoletis* (Diptera: Tephritidae), Hiram College, Hiram Ohio, November 15, 2001.

2000

"Blueberry maggot (*Rhagoletis mendax*) in native hosts in the Great Lakes region: Occurrence and practical implications, MSU Department of Entomology, Monday March 27, 2000, Vesna Gavrilovic and Dave Smitley, co-authors.

"Analysis of mitochondrial DNA and morphological characters in the subtribe Carpomyina", Invited Seminar at Tel Aviv University (Tel Aviv, Israel) at the 1<sup>st</sup> Tephritidologist Conference (Dr. Amnon Friedberg, Organizer), May 28, 2000, Guy Bush, Martha Smith and Matt Jaycox, co-authors.

1998

"Phylogeny of Carpomyina" Invited talk at International Symposium entitled "Fruit flies (Diptera: Tephritidae): Phylogeny and Evolution of Behavior, Instituto de Ecologia, A.C., Xalapa, Veracruz, MEXICO, February 16-21, 1998.,

1996

"Phylogeny and evolution of the genus *Rhagoletis* (Diptera: Tephritidae)" Invited talk presented at symposium entitled "Higher-level phylogeny of Diptera: Morphological and molecular evidence" at the XX International Congress of Entomology, Florence, Italy, August 25-31, 1996.

"What do *Xanthomonas*, *Rhagoletis*, and *Crotalus* have in common?" Department of Zoology, Michigan State University, E. Lansing, MI, March 14, 1996.

"Using molecules to study natural history and evolution" Lyman Briggs School, Michigan State University, E. Lansing, MI, February 26, 1996.

1994

"Host plant specialization and genetic diversification in the bacterial species *Xanthomonas campestris*." Ecology and Evolutionary Biology Seminar Series, Michigan State University, E. Lansing, MI, April 20, 1994.

1993

"Molecular Systematics. RAPD's and Pathovar-specific DNA: Studies on the bacterial turfgrass phytopathogen, *Xanthomonas campestris* pv. *poannua*." The Ohio State University, Columbus, OH, Feb. 19, 1993.

1991

"Sympatric speciation in *Rhagoletis pomonella*: Can we identify genes involved in the evolution of reproductive isolation?" Department of Zoology Seminar Series, Michigan State University, E. Lansing, MI, April 15, 1991.

## ORAL/POSTER CONFERENCE AND WORKSHOP PRESENTATIONS

(KEY - \* Presenter)

### 2018

“Backward Design: From Learning Goals to Implementation”, Workshop presentation (Jim Smith\*, presenter), Avida-ED Active LENS-MSU Train-the-Trainers Workshop, Aug. 2, 2018, Michigan State University, East Lansing, MI.

“Backward Design: From Learning Goals to Implementation”, Workshop presentation (Jim Smith\*, presenter), Avida-ED Active LENS-NCAT Train-the-Trainers Workshop, June 15, 2018, North Carolina A&T University, Greensboro, NC.

“Lyman Briggs Biology: An Inquiry/CURE Lab Model” (Jim Smith\*, Presenter) HHMI LEVERS Gateway Summit, May 15, 2018, Henry Center, East Lansing, MI.

### 2017

“A 28S rRNA D2-D3 expansion variant useful in molecular identification of the apple maggot, *Rhagoletis pomonella* and the snowberry fly, *R. zephyria*”. Jim Smith\*, Daniel Hulbert, Mike Klaus and Guy Bush, oral presentation at the Annual Meeting of the Entomological Society of America, Denver, CO, Nov. 6, 2017.

“A new species of *Rhagoletis* (Diptera: Tephritidae) in the *tabellaria* species group: Morphology, molecular phylogenetics, and host-plant use.” Daniel Hulbert\*, Morgan Jackson and Jim Smith, poster presentation at the Annual Meeting of the Entomological Society of America, Denver, CO, Nov. 6, 2017.

“From host race to species: Genome-wide divergence parallels ecological variation within and across species in the *Rhagoletis pomonella* complex (Diptera: Tephritidae).” Meredith Doellman\*, Thomas Powell, Katherine Inskeep, Scott Egan, Gregory Ragland, Peter Meyers, Glen Hood, Jim Smith, Stewart Berlocher and Jeffrey Feder, oral presentation at the Annual Meeting of the Entomological Society of America, Denver, CO, Nov. 7, 2017.

“A Course-based Undergraduate Research Experience (CURE) to Explore NextGen Sequencing (NGS) of *Rhagoletis* Mitogenomes, Personal Genotypes and Core Concepts in Evolution.” Jim Smith\* and Pat Edger, poster presentation at the Annual Meeting of the Society for the Study of Evolution, Portland, OR, June 24, 2017.

“Why communicating (the relevance of) human evolution still matters.” Jim Smith\*, oral presentation at the Annual Meeting of the Society for the Study of Evolution, Portland, OR, June 23, 2017.

“Backward Design: From Learning Goals to Implementation”, Workshop presentation (Jim Smith\*, presenter), Avida-ED Active LENS-MSU Train-the-Trainers Workshop, July 28, 2017, Michigan State University, East Lansing, MI.

“Backward Design: From Learning Goals to Implementation”, Workshop presentation (Jim Smith\*, presenter), Avida-ED Active LENS-West Train-the-Trainers Workshop, June 22, 2017, University of Washington, Seattle, WA.

### 2016

“Juniper-infesting *Rhagoletis* (Diptera: Tephritidae): Potential new North American species and establishment of a worldwide juniper-collecting network”, James J. Smith\* and Daniel L. Hulbert, oral presentation at the International Congress of Entomology, Orlando, FL, Sept. 30, 2016.

“Updating the phylogeny of *Rhagoletis*: focus on relationships of the North American species groups”, Daniel L. Hulbert\*, Valery Korneyev, and James J. Smith, poster presentation at the International Congress of Entomology, Orlando, FL, Sept. 27, 2016.

“Avida-ED: An artificial life platform for teaching evolutionary principles and the nature of science”, Workshop presentation; Jim Smith (presenter), Wendy Johnson (presenter), Louise Mead (presenter), Mike Wiser (presenter), Amy Lark, Charles Ofria (presenter), Rich Lenski (presenter) and Rob Pennock (presenter), Three-day Workshop at the 2nd Avida-ED Active LENS Train-the-Trainers Workshop, June 9-11, 2016, BEACON Center and Lyman Briggs College, Michigan State University, East Lansing, MI.

## 2015

“Avida-ED: An artificial life platform for teaching evolutionary principles and the nature of science”, 90 minute Workshop; Jim Smith (presenter), Wendy Johnson, Louise Mead, Mike Wiser, Amy Lark, and Rob Pennock, co-authors, The Western Conference for Science Education (WCSE), July 8-10, 2015, Western University, London, ON, Canada.

“Avida-ED: An artificial life platform for teaching evolutionary principles and the nature of science”, Workshop presentation; Jim Smith (presenter), Wendy Johnson (presenter), Louise Mead (presenter), Mike Wiser (presenter), Amy Lark, Charles Ofria (presenter), Rich Lenski (presenter) and Rob Pennock (presenter), Three-day Workshop at the 1st Avida-ED Active LENS Train-the-Trainers Workshop, June 4-6, 2015, BEACON Center and Lyman Briggs College, Michigan State University, East Lansing, MI.

“Avida-ED: An artificial life platform for teaching evolutionary principles and the nature of science”, Platform presentation; Jim Smith (presenter), Wendy Johnson, Louise Mead, Mike Wiser, Amy Lark, and Rob Pennock, co-authors, American Society for Microbiology Conference for Undergraduate Educators (ASMCUE), May 28-31, 2015, Austin, TX.

## 2014

“Phenological attributes and phylogenetic relationships of *Rhagoletis juniperina* Marcovitch (Diptera: Tephritidae) in the Great Lakes region”, Megan Frayer, Daniel Hulbert, Serdar Satar and Jim Smith\*, poster presentation at the Annual Meeting of the Entomological Society of America, Portland, OR, Nov. 18, 2014.

“Genetic Characterization of Hard Ticks (Order Ixodida) from the Kurdistan Region of Iraq”, Shamal Al-Mufti\*, Daniel Hulbert and Jim Smith, poster presentation at the Annual Meeting of the Entomological Society of America, Portland, OR, Nov. 18, 2014.

“An Integrative Case-based Approach to Evolution Education”, oral presentation at the annual meeting of the Society for the Advancement of Biology Education Research (SABER), Peter White, Merle Heidemann, Jim Smith\*, co-authors, Minneapolis, MN, July 20, 2014.

“What is this gorilla doing in my gene pool? Using trans-specific polymorphisms as a case study in evolution education”, Oral presentation at the annual meeting of the Society for the Study of Evolution, Norman Johnson\*, Jim Smith, Ryan Gregory, co-authors, Raleigh, NC, June 24, 2014.



“Updating the phylogeny of *Rhagoletis*: Relationships of the North American species groups”, Poster presentation at the annual meeting of the Society for the Study of Evolution, Daniel Hulbert\*, Jim Smith, co-authors, Raleigh, NC, June 21, 2014

“*Rhagoletis juniperina* in the Great Lakes region: A bridge to Old World *Rhagoletis*?”, Poster presentation at the annual meeting of the Society for the Study of Evolution, Megan Frayer\*, Daniel Hulbert, Jim Smith, co-authors, Raleigh, NC, June 22, 2014

## 2013

“Updating the phylogeny of *Rhagoletis*: Relationships of the North American species groups”, Daniel Hulbert\* and Jim Smith, poster presentation at the Annual Meeting of the Entomological Society of America, Austin, TX, Nov. 18, 2013.

“Integrative case studies in evolution education” Poster presentation at the NSF/TUES Principal Investigators Conference (Jim Smith (presenter), Peter White, Merle Heidemann, co-authors), Washington, DC, January 23, 2013.

“A New Integrative Approach to Evolution Education”, Peter White\*, Merle Heidemann, and Jim Smith, co-authors, poster presentation at the MSU CREATE for STEM MiniConference, May 8, 2013.

“Structural, Pedagogical, and Curricular Reforms of Undergraduate Genetics”, Sarah Jardeleza\*, Rebecca Matz\*, Teresa McElhinny, Richard Allison, Eran Andrechek, Ian Dworkin, John Gerlach, Louise Mead, James Smith, Jon Stoltzfus, and Brian Schutte, co-authors, poster presentation at the MSU CREATE for STEM MiniConference, May 8, 2013.

“Communicating Human Evolution”, Oral presentation at the annual meeting of the Society for the Study of Evolution (Norman Johnson\*, Jim Smith, and Louise Mead, co-authors), Snowbird, UT, June 24, 2013.

“Teaching and Learning with Digital Evolution Software: Linking Implementation to Student Assessment Outcomes”, Oral presentation at the annual meeting of the Society for the Study of Evolution (Amy Lark\*, Wendy Johnson, Louise Mead, James Smith, Gail Richmond, Robert T. Pennock, co-authors), Snowbird, UT, June 24, 2013.

“The integrative approach to evolution education”, Workshop presentation at The Western Conference on Science Education. (Peter White\*, Merle Heidemann, Jim Smith, co-authors), London, ON, Canada, July 9, 2013.

“Improving Student Understanding and Acceptance of Evolution”, Poster presentation at the annual meeting of the Society for the Advancement of Biology Education Research (SABER), (Amy Lark\*, Wendy Johnson, Louise Mead, James Smith, Gail Richmond, and Robert T. Pennock, co-authors), Minneapolis, MN, July 16, 2013.

“A Case-based Approach for Integrating Ecology and Evolution Education”, oral presentation at the annual meeting of the Ecological Society of America (Peter White\*, Merle Heidemann, Jim Smith, co-authors), Minneapolis, MN, August 8, 2013.

“Evo-Ed: Integrative case-based tools for teaching evolution”. Workshop presented at the National Association of Biology Teachers Professional Development Conference, (Peter White\*, Merle Heidemann, Jim Smith, co-authors) Atlanta, GA, Nov. 2013.

## 2012

“Integrative case studies in evolution education” Poster presentation at the Society for Advancement of Biology Education Research (Peter White (presenter), Merle Heidemann, Jim Smith, co-authors), Minneapolis, MN, July 13, 2012.

“Integrative case studies in evolution education” Poster presentation at the 1<sup>st</sup> Congress of Evolutionary Biology (Peter White (presenter), Merle Heidemann, Jim Smith, co-authors), Ottawa, ON, Canada, July 9, 2012.

"Evolution case studies integrating concepts across the biology curriculum" Oral presentation at the 1<sup>st</sup> Congress of Evolutionary Biology (Jim Smith (presenter), Peter White, Merle Heidemann, co-authors), Ottawa, ON, Canada, July 7, 2012.

“The Popcorn Course: An Academic/Industry Partnership Promoting “Real Science” Research Opportunities for Undergraduates”, poster presented at the ABLE Conference (Jim Smith (presenter) & Ware Flora, co-authors), Chapel Hill, NC, June 21, 2012.

“Integrative Case Studies in Evolution Education”, Peter White (presenter), Merle Heidemann, and Jim Smith, co-authors, poster presentation at the MSU CREATE for STEM Conference, May 9, 2012.

## 2011

“Using Inquiry and Tree-Thinking to “March Through the Animal Phyla”: Does Working With Phylogenetic Trees Help Students Understand Biodiversity and Evolution?” poster presentation at the Joint Meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists, (Jim Smith (presenter), Kendra Spence Cheruvilil and Stacy Auvenshine, co-authors), Norman, OK, June 1, 2011.

## 2010

“Using Inquiry and Tree-Thinking to “March Through the Animal Phyla”: Does Working With Phylogenetic Trees Help Students Understand Biodiversity and Evolution?” poster presentation at the First Annual Scholarship of Teaching and Learning Conference (Jim Smith (presenter), Kendra Spence Cheruvilil, co-author), MSU, East Lansing, MI, March 26, 2010.

## 2009

“Microsatellite analysis of cherry fruit fly (*Rhagoletis cingulata* (Loew): Diptera: Tephritidae) population structure across managed, unmanaged, and natural habitats”. poster presentation at the Annual Meeting of the Entomological Society of America (Jim Smith (presenter), Robert McClowry, Luis Teixeira, Tom Powell, Rufus Isaacs, Jeffrey Feder, and Larry Gut, co-authors), Indianapolis, IN, December 15, 2009.

“Using Inquiry and Tree-Thinking to “March Through the Animal Phyla”: Does Working With Phylogenetic Trees Help Students Understand Biodiversity and Evolution?” poster presentation at the American Society for Microbiology Conference for Undergraduate Educators (Jim Smith (presenter), Kendra Spence Cheruvilil, co-author), Ft. Collins, CO, May 30, 2009.

## 2008

“AFLP, mtDNA, and Microsatellite Analysis of Emerald Ash Borer from Asia and North America”, poster presentation at the Annual Meeting of the Entomological Society of America (Alicia Bray

(presenter), Leah Bauer, Robert A. Haack, Therese Poland, and Jim Smith, co-authors), Reno, NV, November 18, 2008.

#### 2007

“Use of AFLPs to Determine Genetic Relationships and Identify Species in the *Rhagoletis pomonella* species group”, poster presentation at the Annual Meeting of the Entomological Society of America (Jim Smith (presenter), Vesna Gavrilovic, Dan Ducat, and Rob Ahern, co-authors), San Diego, CA, December 12, 2007.

“Using Inquiry and Tree-thinking to March Through the Phyla”, oral presentation at the annual meeting of the National Association of Biology Teachers, (Jim Smith (presenter), Kendra Spence Cheruvelil, co-author) Atlanta, GA, December 1, 2007.

“Emerald Ash Borer (*Agrilus planipennis* Fairmaire) Genetics: An Update”, oral presentation at the Emerald Ash Borer (EAB) Annual Review and Research Planning Session, (Alicia Bray (presenter), Leah Bauer, Robert A. Haack, Therese Poland, and Jim Smith, co-authors), Pittsburgh, PA, October 23, 2007.

#### 2006

“Invasion Genetics of Emerald Ash Borer (*Agrilus planipennis* Fairmaire) in North America?”, poster presentation at the Joint Meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists, (Jim Smith (presenter), Robert A. Haack, Leah Bauer, Therese Poland and Alicia Bray, co-authors) Stony Brook, NY, June 24 – 27, 2006.

“Adapting Avida as an Evolution Education Tool: Development of Model Lesson Plans”, poster presentation at the Joint Meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists, (Jim Smith (presenter), Robert T. Pennock, Jeff Clune, Eric Armstrong, Max Braverman, Candice Brady, co-authors) Stony Brook, NY, June 24 – 27, 2006.

#### 2005

“Emerald ash borer - Where did you come from?”, poster presentation at the Annual Meeting of the Entomological Society of America (Alicia Bray (presenter), Robert A. Haack, Leah Bauer, and Jim Smith, co-authors), Ft. Lauderdale, FL. December 15, 2005.

“Invasion Genetics of Emerald Ash Borer (*Agrilus planipennis* Fairmaire) in North America”, oral presentation at the Emerald Ash Borer (EAB) Annual Review and Research Planning Session, (Alicia Bray (presenter), Leah Bauer, Robert A. Haack, Therese Poland, and Jim Smith, co-authors), Pittsburgh, PA, September 26, 2005.

#### 2004

“DNA analysis of emerald ash borer (*Agrilus planipennis* Fairmaire) to determine point of origin in North American infestations”, poster presentation at the Annual Meetings of the Entomological Society of America (Alicia Bray (presenter), Robert Haack, Leah Bauer, Mike Grillo, and Jim Smith, co-authors), Salt Lake City, Utah. November 15, 2004.

“Genetic analysis of emerald ash borer (*Agrilus planipennis* Fairmaire) to determine point of origin of Michigan infestations”, oral presentation at the EAB Research Review, (Alicia Bray (presenter), Jim Smith, Robert Haack, and Leah Bauer, co-authors), Romulus, MI, October 5, 2004.

### 2003

“Anatomy of a Biology Module”, oral presentation at the LON-CAPA Users Conference, Truckee Meadows Community College, Reno NV, January 18, 2003.

“HHMI/LON-CAPA: 'Anatomy and Physiology' of Online Learning Guides for Introductory Biology”, oral presentation at the Learning Conference, University of London, London, UK, July 17, 2003.

“Genetic analysis of Emerald Ash Borer (*Agrilus planipennis* Fairmaire) to determine point of origin of North American infestations”, oral presentation at the Emerald Ash Borer research review, Port Huron, MI, September 30, 2003.

### 2002

"Mitochondrial DNA Evolution in the *Rhagoletis pomonella* species group (Diptera: Tephritidae): An Update", co-author with V. Gavrilovic, Poster Presentation at the Joint Meeting of the Society for the Study of Evolution, and the Society of Systematic Biologists, Champaign-Urbana, IL, June 29 – July 1, 2002.

"Development of a new morphometric standard for identification of field-caught apple maggot fly, *Rhagoletis pomonella*, and snowberry fly, *R. zephyria*, using native Washington populations as a basis", oral presentation at the Apple Entomology Research Review of the Washington Tree Fruit Research Commission, Yakima, WA, January 23, 2002.

### 2001

"Use of amplified fragment length polymorphism markers to determine relationships of populations and closely related species in the genus *Rhagoletis* (Diptera: Tephritidae)". co-author with Vesna Gavrilovic, Dan Ducat, Angela Roles, and Jessica Wolfe. Poster presentation at the Annual Meeting of the Entomological Society of America, San Diego, CA, Dec. 9-12, 2001.

"Host shifts and speciation in *Blepharoneura* (Tephritidae)". co-author with M. Condon, D. Pumo, J. Romashko III, T. Strovas, J. Sturges and C. Thunberg, Poster Presentation at the Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Knoxville, TN, June 27 – 30, 2001.

### 2000

“Interpreting patterns of mtDNA sequence variation in the genus *Rhagoletis*: What we know, and what we suspect”. (co-author with Joe Roethele, Jeff Feder, Vesna Gavrilovic, William Perry, Hattie Dombroski and Stewart Berlocher), Oral presentation at the Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Bloomington, IN June 24 – 27, 2000.

“Nuclear DNA sequence variation in the genus *Rhagoletis*: Comparing patterns of molecular data to allozymes and host plant associations.” (co-author with Stewart Berlocher (presenter), Joe Roethele, Jeff Feder, Vesna Gavrilovic, William Perry, and Hattie Dombroski), Oral presentation at the Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Bloomington, IN June 24 – 27, 2000.

“Ancestral polymorphism, introgression, and/or geographic subdivision: Interpreting patterns of nuclear and mtDNA sequence variation in the genus *Rhagoletis*.” (co-author with Jeff Feder (presenter), Joe Roethele, Vesna Gavrilovic, William Perry, Hattie Dombroski, and Stewart Berlocher), Oral presentation at the Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Bloomington, IN June 24 – 27, 2000.

“Patterns of nuclear and mtDNA sequence variation in the genus *Rhagoletis*.”. (co-author with Joe Roethele (presenter), Hattie Dombroski, Jeff Feder, Vesna Gavrilovic, Stewart Berlocher and William Perry), Poster presentation at the Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Bloomington, IN June 24 – 27, 2000.

“Phylogenetic position of the snowberry fly, *Rhagoletis zephyria* (Diptera: Tephritidae) within the *R. pomonella* species group: Conflicting nuclear gene phylogenies”. (co-author with Vesna Gavrilovic, William Perry and Joe Roethele), Poster presentation at the Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Bloomington, IN June 24 – 27, 2000.

Co-author on an oral presentation by JL Feder entitled "Ancestral polymorphism, introgression, and/or geographic subdivision: Interpreting patterns of nuclear and mtDNA sequence variation in the genus *Rhagoletis*". J. Feder, J. Roethele, J. Smith, S. Berlocher, V. Gavrilovic, W. Perry and H. Dambroski, 2000 Joint Annual Meeting of Societe d'entomologie du Quebec, Entomological Society of Canada and Entomological Society of America, Montreal, Quebec, Dec. 2000.

Co-author on poster presentation by Hattie Dombroski entitled "Patterns of nuclear and mtDNA sequence variation in the genus *Rhagoletis*". H. Dambroski, J. Roethele, J. Feder, J. Smith, S. Berlocher, V. Gavrilovic and W. Perry, 2000 Joint Annual Meeting of Societe d'entomologie du Quebec, Entomological Society of Canada and Entomological Society of America, Montreal, Quebec, Dec. 2000.

#### 1999

“Progress in the development of a PCR-based diagnostic test for distinguishing between the apple maggot fly, *Rhagoletis pomonella*, and the snowberry fly, *R. zephyria*“ (co-author with DL Christman and GL Bush), oral and poster presentations at the Entomological Apple Research Review for the Washington State Tree Fruit Research Commission, Dec. 1-2, 1999, Yakima, WA.

“Phylogenetic relationships within the *Rhagoletis pomonella* (Diptera: Tephritidae) species group” (co-author with V Gavrilovic (presenter), GL Bush and JL Feder), Poster presentation at Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Madison, WI June 22-26, 1999.

“Phylogeny of South American *Rhagoletis*” (co-author with Matt Jaycox (presenter), Daniel Frias & Guy Bush), Poster presentation at Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Madison, WI June 22-26, 1999.

#### 1998

“Evolution of nest building behavior in *Cornitermes bequaerti* (Isoptera: Termitidae)” (Vanderlei Martins & Vesna Gavrilovic, co-authors), Oral presentation at Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Vancouver, BC June 20-24, 1998.

“Phylogeny of Carpomyina (Diptera: Tephritidae)” (Guy L. Bush, co-author), Poster presentation at Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Vancouver, BC June 20-24, 1998.

“Phylogeny of South American *Rhagoletis* (Diptera: Tephritidae)” (co-author with Matt Jaycox (presenter), Daniel Frias & Guy Bush), Poster presentation at Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Vancouver, BC June 20-24, 1998.

“Evolution of nest building behavior in *Cornitermes bequaerti* (Isoptera: Termitidae)” (Vanderlei Martins & Vesna Gavrilovic (presenter), co-authors), Poster presentation at Annual Meeting of the Society for Molecular Biology and Evolution, Vancouver, BC June 17-20, 1998.

#### 1997

"Documenting the history of speciation of *Rhagoletis pomonella* and *R. zephyria* (Diptera: Tephritidae)" (Teri Genschoreck and Guy L. Bush, co-authors), Poster presented at Annual Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and The American Society of Naturalists, Boulder, CO, June 15-18, 1997.

#### 1996

“Reconstructing the evolutionary history of host associations in the *Rhagoletis pomonella* and *R. tabellaria* species groups” Poster presented at “Endless Forms: Species and Speciation”, A symposium in honor of Guy L. Bush. Asilomar Conference Center, Pacific Grove, CA. May 19-23, 1996.

#### 1995

“Clade-defining characters and the evolution of host plant associations in the *Rhagoletis* fruit flies (Diptera: Tephritidae).” Short talk presented at the Annual Meeting of the Society for the Study of Evolution, Montreal, Quebec, Canada.

#### 1994

“Phylogenetic analysis of *Rhagoletis* spp. (Diptera: Tephritidae) using mitochondrial COII sequences.” Poster presented at the Annual Meeting of The Society for the Study of Evolution, Athens, GA.

#### 1993

"Characterization of random amplified polymorphic DNA (RAPD) products from *Xanthomonas campestris*: Phylogenetic implications." Poster presented at the Annual Meeting of The Society for the Study of Evolution, Snowbird, UT.

#### 1992

"Differentiation of *Xanthomonas campestris* using DNA Products of Arbitrarily-primed polymerase chain reactions." Poster presented at the Sixth International Symposium on Microbial Ecology, Barcelona, Spain.

"Molecular Systematics and Evolution in *Xanthomonas campestris*." Poster presented at the International Conference on Molecular Evolution, University Park, PA.

#### 1989

J.J. Smith and N.V. Raikhel. 1989. Tools to study the post-translational modification of WGA. *Plant Physiology* 89:S-102. Poster presented at the Annual Meeting of the American Society of Plant Physiologists, Toronto, Ontario, Canada.

1987

J.J. Smith, J.R. Olsen and D.G. Klapper. 1987. Monoclonal antibodies against denatured Ragweed Antigen E (AgE): Specificity for denatured AgE and western blot analysis. *Federation Proceedings* 46:937. Poster presented at the Annual Meeting of the Federated American Societies for Experimental Biology, St. Louis, MO.

1985

J.J. Smith, E.P. Muldoon and D.T.A. Lamport. 1985. Extensin precursors P1 and P2 are highly periodic structures. *Plant Physiology* 77:S-62. Poster presented at the Annual Meeting of the American Society of Plant Physiologists, Providence, RI.

1984

J.J. Smith and D.T.A. Lamport. 1984. Lys-Tyr-Lys: A possible sequon for isodityrosine (IDT) crosslink formation in extensin. *Plant Physiology* 75:S-62. Short talk presented at the Annual Meeting of the American Society of Plant Physiologists, Davis, CA.

1983

J.J. Smith and D.T.A. Lamport. 1983. Isolation of putative extensin precursors from the cell surface of Tomato suspension cultures. *Plant Physiology* 72:S-73. Poster presented at the Annual Meeting of the American Society of Plant Physiologists, Fort Collins, CO.

1982

"Feasibility of using anhydrous hydrogen fluoride to "crack" cellulose." Lecture presented at the 9th International Cellulose Conference, Syracuse, N.Y.