

# **ROBERT T. PENNOCK, PH.D.**

**Michigan State University  
Curriculum Vitae (August 13, 2019)**

## **OFFICE:**

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## **HOME:**

227 Clarendon Rd.  
East Lansing MI 48823  
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## **CURRENT APPOINTMENTS:**

- Michigan State University. University Distinguished Professor. (2019 – present).
  - History, Philosophy & Sociology of Science. Lyman Briggs College.
  - Philosophy. Department of Philosophy.
  - Computer Science, Department of Computer Science & Engineering
  - Ecology & Evolutionary Biology and Behavior (EEBB) Graduate Program.
  - Associate Faculty, Center for Ethics and Humanities in the Life Sciences.

## **PREVIOUS APPOINTMENTS:**

- Michigan State University. Professor. (2005 – 2019)
- University of Michigan, Institute for Social Research. Visiting Scholar (2014 – 2018)
- American Association for the Advancement of Science. Visiting Scholar (2015)
- Duke University, National Evolutionary Synthesis Center. Sabbatical Fellow (2008)
- Michigan State University. Associate Professor (2000 – 2005)
- The College of New Jersey. Assistant Professor of Philosophy. (1999 – 2000)
- The University of Texas at Austin, Assistant Professor of Philosophy. (1991 – 1999)
- Pennsylvania Governor's School for the Sciences (P.G.S.S.), Faculty member.  
Carnegie-Mellon University (Summers, 1987-1991)

## **EDUCATION:**

- B.A. w/ Honors, Biology/Philosophy, Earlham College, 1980.
- Ph.D., History & Philosophy of Science. University of Pittsburgh, 1991.  
“Causally Licensed Inference and the Confirmation Relation.” Advisor: Wesley Salmon  
Committee: John Earman, Clark Glymour, Kenneth Schaffner, Herbert Simon

**ACADEMIC AWARDS / HONORS:**

- International Society for Artificial Life *Education & Outreach Award* as lead for Avida-ED. 2017.
- MSU Phi Kappa Phi *Excellence Award in Interdisciplinary Scholarship*. For Avida-ED Project. 2012.
- MSU *Distinguished Faculty Award*. 2011.
- *Thomas Jefferson Religious Freedom Lecture*. University of Mary Washington. 2010.
- American Institute of Biological Sciences (AIBS) *Outstanding Service Award*. 2009.
- 25<sup>th</sup> Annual *Alfred E. Stiernotte Lecture*. Quinnipiac University. 2009.
- *Springer Lecture*. International History and Philosophy of Science Teaching Group. 2009.
- *National Associate of the National Academies of Science*. Elected 2008.
- *Academy of Scholars Senior Lecture*. Wayne State University, Detroit. 2008.
- *Fellow of the American Association for the Advancement of Science*. Elected 2006.
- *Provost's Convocation/Helen Edison Lecture*. Univ. of California, San Diego. 2006.
- *Silverstein Lectures*. Northwestern University Medical School. 2006.
- *Sagan National Colloquium Lecture*. Ohio Wesleyan University. 2006.
- *Comstock Speakership*. Minnesota State University Moorhead. Minnesota. 2005.
- *Matheny Lecture*. Southeastern Louisiana University. 2004.
- National Center for Science Education *Friend of Darwin Award*. 2003.
- Sigma Xi *National Distinguished Lecturer*. 2000-2002.
- *Judith Weller Harvey Quaker Scholar*. Guilford College. 2002.
- *Branigan Lecturer*. Institute for Advanced Study, Indiana University. 2002.
- *National Press Club Author's Night invited author*. Nov. 18, 1999. Washington, DC.
- Center for Theology and the Natural Sciences *Science and Religion Course Award*. (\$10K) 1999.
- Templeton Foundation Prize: *Exemplary Paper in Theology and the Natural Sciences*. (\$2K) 1997. For "Naturalism, Creationism and the Meaning of Life: The Case of Phillip Johnson Revisited"
- Sigma Xi, The Scientific Research Society. Elected 1986. Promoted 1992.
- The Philosophy Foundation First International Essay Competition. 1990. For "'Because' or Kant's Answer to Hume's Question About How We Can Be Sure About the Principle of Causation."

**ACADEMIC AWARDS / HONORS (CONTINUED):**

- Michael R. Bennett Prize (Univ. of Pittsburgh Philosophy Essay Competition). 1988. (\$250) For “A Paradox of Ravens.”
- Apple for the Teacher Award. 1986.
- Phi Beta Kappa. Elected 1980.

**GRANTS & FELLOWSHIPS:**

- National Science Foundation – STC (\$22,500,000). Co-PI. *BEACON: An NSF Center for the Study of Evolution in Action*. (DBI-1446483) 2015-2020.
- National Science Foundation - IUSE (\$2,315,094). Principal Investigator. *Active LENS: Learning Evolution and the Nature of Science using Evolution in Action*. (#1432563) 2014-2019.
- Howard Hughes Medical Institute (\$1,500,000). Co-PI. *LEVERS: Leveraging Engagement and Vision to Encourage Retention in STEM*. (#52008102) 2014-2019.
- John Templeton Foundation (\$1,055,139). Principal Investigator. *The Scientific Virtues: A National Survey of the Ethical Perceptions of Scientific Leaders*. (#36630) 2013-2017.
- John Templeton Foundation (\$95,725). Principal Investigator. *The Scientific Virtues: Planning Grant for a National Survey of the Ethical Perceptions of Scientific Leaders*. (#36630) 2012-2013.
- National Science Foundation (\$25,300,000). Co-PI. *BEACON: An NSF Science & Technology Center for the Study of Evolution in Action*. (#OIA-0939454) 2010-2015.
- National Science Foundation (\$24,137). Principal Investigator. *Avida-ED: Technology for Teaching Evolution and the Nature of Science using Digital Organisms – Supplemental grant*. (#DUE-0341484, Amd #2) 2008-2009.
- National Science Foundation - CNS (\$188,100) Co-PI. *CRI:IAD -- A Testbed for Evolving Cooperative and Adaptive Behavior among Autonomous Systems*. (APP 98946-00) 2008-2009.
- National Evolutionary Synthesis Center (NESCent) Sabbatical Fellowship (\$25,280) *Theory and Applications of Evolutionary Computation*. 2008.
- National Science Foundation - CCLI (\$149,906) Senior Personnel. “BRAID: Bridging the Disciplines with Authentic Inquiry & Discourse.” 2007-2010.
- Cambridge Templeton Consortium (\$309,000). Principal Investigator. *Emerging Intelligence: Contingency, Convergence and Constraints in the Evolution of Intelligent Behavior*. (#1119) 2005-2009.

**GRANTS & FELLOWSHIPS (CONT.):**

- National Science Foundation (\$255,837). Principal Investigator. *Avida-ED: Technology for Teaching Evolution and the Nature of Science using Digital Organisms*. (#DUE-0341484) 2004-2008.
- MSU Quality Fund. (\$131,761) Senior Personnel. *BRAID: Bridging the Disciplines with Authentic Inquiry & Discourse*. 2006-2008
- MSU Foundation Grant. (\$20,000). "Applied Darwinism: Theory & Practice of Evolutionary Design". 2002-2003.
- American Scientific Affiliation / Templeton Lecture grant. (\$1500). 2002.
- National Science Foundation / Sigma Xi Ethics in Science Workshop grant (Co-PI w/ Terry May) (\$2500). 2001.
- American Scientific Affiliation / Templeton Lecture grant. (\$4000). 2000-01.
- Capacity Building Grant, MSU Foundation. (\$15,000). 2000.
- National Science Foundation / National Endowment for the Humanities Fellowship. 1996. (\$2000) Summer Institute on Scientific, Ethical, and Social Challenges of Contemporary Genetic Technology.
- Three Nails Fellowship. (\$4000) 1994. Obirin University, Tokyo JAPAN
- U.R.I. Summer Research Award. (\$2000) 1994.  
"Causal Confirmation, Information and Experimental Method."
- National Endowment for the Humanities Fellowship. (\$2000) 1993.  
Summer Institute on Naturalism
- Mellon Foundation Fellowships. 1985-1986 and 1988-1989

**BOOKS AUTHORED**

1. **R. T. PENNOCK.** *An Instinct for Truth: Curiosity and the Moral Character of Science*. 2019. Cambridge, MA: The MIT Press.
2. **R. T. PENNOCK.** *Tower of Babel: The Evidence against The New Creationism*. 1999. Cambridge, MA: The MIT Press - Bradford Books. (Paperback edition 2000)
  - Nominated for the Pulitzer Prize, the National Book Award, and the PEN Award.
  - ForeWord Book-of-the-Year Finalist
  - Library of Science Book Club Alternate Main Selection
  - Reviews include:
    - Edwin Delattre, Boston Univ., *Advance review*
    - Douglas J. Futuyma, SUNY-Stony Brook, *Advance review*
    - Ronald N. Giere, Univ. of Minnesota, *Advance review*
    - David L. Hull, Northwestern Univ., *Advance review*
    - Philip Kitcher, Columbia Univ. & UC-San Diego, *Advance review*

- Elliott Sober, Univ. of Wisconsin, *Advance review*
- Charles Goodwin, *The Alchemist* (June 16, 2000)
- Rob Lightner, *Amazon.com* (April, 1999)
- Peter J. Bowler, *American Scientist* Vol. 87 (May-June 1999, p. 268-270)
- Wayne A. Holst, *Anglican Journal* (Nov. 1999)
- *The Assayer* (Dec. 2000)
- John Wilkins, *Australasian Journal of Philosophy* (July 2001)
- Tim Tokaryk, *Biomednet.com HMS Beagle* (June 25, 1999)
- Bryce Christensen, *Booklist* (March 1, 1999)
- Philip Johnson, *Books & Culture* (Sept/Oct. 1999, p. 30-31)
- John Wilson, *Books & Culture* (Nov./Dec. 1999, p. 40)
- Richard B. Isaacman, *Bridges: An Interdisciplinary Journal of Theology, Philosophy, History and Science* (2000, Vol. ?, p. 155-157)
- *Bulletin of Science, Technology & Society* (Vol. 21, No 2, p 148, Apr. 2001)
- E. B. Hazard, *Choice* (Vol. 37 No. 1, Sept. 1999)
- Kathleen L. Housley, *Christian Century* (Oct. 13, 1999, p. 973-974)
- Robert Semeonoff, *Church Times* (3 Dec. 1999)
- *The Complete Review* (Unknown date)
- Edward Davis, *Endeavor* (2000)
- *Evolution and the Nature of Science Institutes Book News.* (1999)
- David Smillie, *EXN.ca Discovery Channel Canada* (Apr. 11, 2000)
- L. Russ Bush, *Faith & Mission* (unknown date, pp. 113-114)
- Wesley R. Elsberry, *Friends Journal* (Nov. 1999, p. 34)
- Rex Buchanan, *Geotimes* (July 2000)
- *Hays Kansas News* (July 4, 1999)
- *Institute for First Amendment Studies.* (Nov. 8, 1999)
- Phil Gasper, *International Socialist Review* (June-July 2000, p. 68)
- SHG. *Jewish Book World* (unknown date, p. 53-54)
- Jansine Anderson, *The Journal of Religion* (Vol. 80, No 4)
- Keith Parsons, *Journal of Scientific Exploration* (17:4, Winter 2003, pp. 754-58)
- Timothy Sandefur, *Laissez Faire City Times* (Vol. 4 No. 47)
- James Birx, *Library Journal* (March 15, 1999, p. 106)
- Andrew Porter, *Metanexus* (Oct. 28, 2002)
- Christopher Dwedney *National & Financial Post* (May 15, 1999)
- Frederick Crews, *The New York Review of Books* (Oct. 4, 2001)
- James Wing, *Perspectives on Science & Christian Faith* (unknown date)
- Joseph Poulshock, *Philosophia Christi* (Series 2 Vol. 1 No 2, 1999)
- RPM, *The Presbyterian Layman* (Nov./Dec 2000)
- *Publishers Weekly*, starred review (Feb. 15, 1999)
- *Reports of the National Center for Science Education* (Nov/Dec 1999)
- Paul Morris, *Restoration Quarterly* (Jan. 2004)
- Jim Karpen, *Magill Book Reviews* (Unknown date)
- Fintan R. Steele, *Science.* (Vol. 286, 19 Nov. 1999, p. 1484)
- Burton Horn, *Science Books & Films.* (Dec. 1999)
- Ernest Lucas *Science & Christian Belief* (Vol. 13, No 1, April 2001)
- Eugenie Scott, *Scientific American* (August 1999, p. 92-94)

- *Secular Web* (unknown date)
- Kendrick Frazier, *Skeptical Inquirer* (July/August 1999, p. 71)
- Mark Newbrook, *The Skeptic* (Vol. 20, No 1, pp. 55-57)
- *Taxon* (Vol. 48, August 1999)
- Tom Bowden, *Tech Directions* (2000)
- Elisabeth Piedmont-Marton, *Texas Observer* (Dec. 22, 2000)
- Mark Doughty, *Theological Studies* (unknown date. p. 167-169)
- Niles Eldredge, *Times Literary Supplement*, London (Feb.18, 2000, p. 9)
- Tom Danehy, *Tucson Weekly* (Aug 26, 1999)
- Rosemary Bray McNatt, *UU World* (Vol. XVI:4 Jul/Aug 2002)
- Damian Thompson, *Wall Street Journal* (12/5/2008)
- Michael Behe, *The Weekly Standard* (June 7, 1999, p. 35-37)
- Danny Yee, *Yee's Book Reviews* (26 Dec. 1999)
- *Yomiuri Shimbun* Japan (12 Mar., 2000)

### BOOKS EDITED

4. W. Banzhaf, B. Cheng, K. Holekamp, R. Lenski, C. Ofria, **R. T. PENNOCK**, W. Punch, D. Whittaker (eds.) *Evolution in Action – Past, Present and Future*. Springer Nature (In Press 2019)
3. C. Adami, D. Bryson, C. Ofria and **R. T. PENNOCK** (eds.) *Proceedings of the 13<sup>th</sup> International Conference on Artificial Life*. The MIT Press (2012)
2. **R. T. PENNOCK** & Michael Ruse (eds.) *But Is It Science?: The Philosophical Question in the Creation/Evolution Controversy (Updated Edition)* Prometheus Press (2009)
1. **R. T. PENNOCK**. *Intelligent Design Creationism and its Critics: Philosophical, Theological and Scientific Perspectives*. 2001. Cambridge, MA: The MIT Press - Bradford Books. (Paperback edition 2001)
  - Library of Science Book Club Alternate Main Selection
  - Reviews include:
    - Jim Holt, *New York Times Book Review* (April 14, 2002)
    - Kevin Padian, *Science* (Vol. 295, March 29, 2002, pp. 2373-2374)
    - Barry Palevitz, *Evolution* (8/2002)
    - Judith Weis, *Bioscience* (9/02)
    - Vickie Hess, *Bridges* (9:3/4, Fall/Winter 2002)
    - Ernan McMullin, *Endeavour* (Vol. 26, 2002, pp. 118-119)
    - Del Ratzsch, *Ars Disputandi* (2003)
    - Glenn Branch, *Science & Theology News* (2003)
    - Keith Parsons, *Journal of Scientific Exploration* (17:1, Sp 2003, pp. 139-143)
    - Niall Shanks, *Philosophy in Review* (June-Dec 2003, pp. 270-272)
    - John Polkinghorne. *The Journal of Theological Studies* (54:1, 2003, pp. 460-1)
    - Dennis W. Cheek *Religious Studies Review* (July 2003. p. 269)
    - George Nakhnikian. *Philosophy of Science* (71:October, 2004, pp. 593-604)
    - Paola Dessi, "Se il creazionismo diventa scientifico" *Giornale-Critico-della-Filosofia-Italiana*. (Ja-Ap 2005; 1(84-86): 181-185)

## ARTICLES

(\* peer reviewed journals/books)

- 76\*. **R. T. PENNOCK** and Jon D. Miller. “Studying Scientific Virtues: Bridging Philosophy and Social Science.” In Stapleford, Thomas A. (ed.) *Science, Technology and the Good Life*. Oxford University Press (forthcoming)
- 75\*. Chet McLeskey, Eric Berling, Michael O’Rourke, **ROBERT T. PENNOCK**. “The Evolution of the Scientific Virtues Toolbox Approach to Responsible Conduct of Research Training.” In Banzahf, W. (ed.) *Evolution in Action: Past, Present, and Future*. New York: Springer Publishing (2019)
- 74\*. Amy M Lark; Gail Richmond, **ROBERT T. PENNOCK**. “The influence of instructor technological pedagogical content knowledge on implementation and student affective outcomes.” In Banzahf, W., et. al. (ed.) *Evolution in Action: Past, Present, and Future*. New York: Springer Publishing (2019)
- 73\*. Cory Kohn, **ROBERT T. PENNOCK**, Jim Smith, Michael J Wisner, and Louise S Mead. “A Digital Technology-based Introductory Biology Course Designed for Engineering and Other Non-life Science STEM Majors” *Computer Applications in Engineering Education*. (2018; 1-12. DOI: 10.1002/cae.21986)
- 72\*. **R. T. PENNOCK**. “Beyond Research Ethics: How scientific virtue theory reframes and extends responsible conduct of research.” In Carr, David (ed.) *Cultivating Moral Character and Virtue in Professional Practices*. Routledge Press. (2018, pp. 166-177)
- 71\*. Eric Berling, Chet McLeskey, Michael O’Rourke, **ROBERT T. PENNOCK**. “A New Method for a Virtue-based Responsible Conduct of Research Curriculum: Pilot Test Results” *Science & Engineering Ethics*. (2018, doi:10.1007/s11948-017-9991-2)
- 70\*. Amy M Lark; Gail Richmond; Louise S Mead; James J Smith; **ROBERT T. PENNOCK**. “Exploring the relationship between experiences with digital evolution and students’ scientific understanding and acceptance of evolution.” *American Biology Teacher* (2018, 80(2):74-86; DOI 10.1525/abt.2018.80.2.74)
- 69\*. James J Smith; Wendy R Johnson; Amy M Lark; Louise S Mead; Michael J Wisner, **ROBERT T. PENNOCK**. “An Avida-ED digital evolution curriculum for undergraduate biology.” *Evolution: Education and Outreach* (2016, 9(9), 1-11; DOI 10.1186/s12052-016-0060-0)
- 68\*. **R. T. PENNOCK**. “Evolution and Computing.” In Jonathan B. Losos & Richard E. Lenski (eds.) *How Evolution Shapes Our Lives: Essays on Biology and Society*. Princeton: Princeton University Press. (2016, pp. 206-219)
- 67\*. Michael J Wisner, Louise S Mead; James J Smith; **ROBERT T. PENNOCK**. “Comparing Human and Automated Evaluation of Open-Ended Student Responses to Questions of Evolution.” In Gershenson, C., Froese, T., Siqueiros, J.M., Aguilar, W., Izquierdo, E.J. and Sayama, H. (eds.) *Artificial Life XV: Proceedings of the of the Fifteenth International Conference on Artificial Life*. (2016, pp. 116-122)

## ARTICLES (CONTINUED)

- 66\*. **R. T. PENNOCK** “Experimental Evolution in the Classroom: The Active LENS Project.”  
Envisioning the Future of Undergraduate STEM Education: Research and Practice  
Symposium. <<http://www.enfusestem.org/projects/experimental-evolution-in-the-classroom-the-active-lens-project/>> (April 2016)
- 65\*. **ROBERT T. PENNOCK** and Michael O’Rourke. “Developing a Scientific Virtue-Based  
Approach to Science Ethics Training.” *Science & Engineering Ethics*. (First Online 2016, 27  
January. pp. 1-20; 2017, 23(1), 243-262, doi:10.1007/s11948-016-9757-2)
- 64\*. **R. T. PENNOCK**. “Fostering a Culture of Scientific Integrity: Legalistic vs. Scientific Virtue-  
Based Approaches.” *Professional Ethics Report* (2015, 28(2):1-3)
- 63\*. Amy Lark, Gail Richmond, **ROBERT T. PENNOCK**. “Modeling Evolution in the Classroom:  
The Case of the Fukushima Butterflies.” *American Biology Teacher* (2014, 76(7):450-454)
- 62\*. **R. T. PENNOCK**. “Evolution and Computing.” In J.B. Losos (ed.) *The Princeton Guide to  
Evolution*. Princeton: Princeton University Press. (2013, pp. 780-785)
- 61\*. Laura M. Grabowski, David M. Bryson, Fred C. Dyer, **ROBERT T. PENNOCK** and Charles  
Ofria. “A Case Study in the De Novo Evolution of a Complex Odometric Behavior in Digital  
Organisms.” *PLoS ONE* (2013; 8(4):e60466)
- 60\*. **R. T. PENNOCK**. “Are Pre-Existing Condition Exclusion Clauses Just: Lessons from Causal  
and Ethical Considerations Regarding Genetic Testing.” In R. Rhodes, M. P. Battin and A.  
Silvers (eds.) *Medicine and Social Justice: Essays on the Distribution of Health Care (2<sup>nd</sup>  
edition)*. Oxford: Oxford University Press. (2012, pp. 387-399)
- 59\*. Jeff Clune, **ROBERT T. PENNOCK**, Charles Ofria and Richard Lenski. “Ontogeny tends to  
recapitulate phylogeny in digital organisms.” *The American Naturalist*, Vol. 180, No. 3 (July  
2012, E54-E63)
- 58\*. Laura M. Grabowski, David M. Bryson, Fred C. Dyer, **ROBERT T. PENNOCK** and Charles  
Ofria. “Clever Creatures: Case Studies of Evolved Digital Organisms.” *Proceedings of the  
European Conference on Artificial Life 11* (August 2011)
- 57\*. Jeff Clune, Kenneth O. Stanley, **ROBERT T. PENNOCK**, and Charles Ofria. “On the  
Performance of Indirect Encoding Across the Continuum of Regularity.” *IEEE Transactions  
on Evolutionary Computation*, Vol. 15, No. 3, pp. 346-367. (June 2011)
- 56\*. **R. T. PENNOCK**. “Negotiating Boundaries in the Definition of Life: Wittgensteinian and  
Darwinian Insights on Resolving Conceptual Border Conflicts.” *Synthese* (2012, Vol. 185  
No. 1 pp. 5-20) DOI: 10.1007/s11229-011-9873-0 (Online: 15 Feb. 2011)
- 55\*. Jeff Clune, Heather Goldsby, Charles Ofria, **ROBERT T. PENNOCK**. “Selective pressures for  
accurate altruism targeting: Evidence from digital evolution for difficult-to-test aspects of  
inclusive fitness theory.” *Proceedings of the Royal Society B* (Vol. 278, pp. 666-674,  
doi:10.1098/rspb.2010.1557. Published online: 15 September, 2010)



## ARTICLES (CONTINUED)

- 54\*. Laura M. Grabowski, David M. Bryson, Fred C. Dyer, Charles Ofria, **ROBERT T. PENNOCK**. "Early Evolution of Memory Usage in Digital Organisms." *Proceedings of the International Conference on Artificial Life (ALife XII)* (August 2010)
- 53\*. **R. T. PENNOCK**. "Should Students Be Able to Opt Out of Evolution?: Some Philosophical Considerations" *Evolution Education & Outreach* (Vol. 3, pp. 163-169, June 2010)
- 52\*. Jeff Clune, Benjamin E. Beckmann, **ROBERT T. PENNOCK** and Charles Ofria. "HybrID: A Hybridization of Indirect and Direct Encodings for Evolutionary Computation." *Proceedings of the 2009 Evolutionary Conference of Artificial Life (ECAL)*. Springer. (2010)
- 51\*. **R. T. PENNOCK**. "The Postmodern Sin of Intelligent Design Creationism." *Science & Education* (2010, Vol. 19, No. 6-8, pp. 757-778)
- 50\*. Elena B. Speth, Tammy Long, Robert T. Pennock and Diane Ebert-May. "Using Avida-ED for teaching and learning about evolution in undergraduate introductory biology courses." *Evolution Education & Outreach*. (Vol. 2, No. 3, pp. 415-428, 2009).
- 49\*. Jeff Clune, Charles Ofria, and **ROBERT T. PENNOCK**. "The Sensitivity of HyperNEAT to Different Geometric Representations of a Problem." *Proceedings of the 2009 Genetic and Evolutionary Computation Conference (GECCO '09) Montreal, Canada*. New York: Association for Computing Machinery (2009, pp. 675-682).
- 48\*. **R. T. PENNOCK**. "Can't Philosophers Tell The Difference Between Science and Religion?: Demarcation Revisited" *Synthese* (2011, Vol. 178, No. 2, pp. 177-206. Online: April, 2009)
- 47\*. Jeff Clune, Benjamin E. Beckmann, Charles Ofria, and **ROBERT T. PENNOCK**. "Evolving coordinated quadruped gaits using the HyperNEAT generative encoding." *Proceedings of IEEE on Evolutionary Computing Special Section on Evolutionary Robotics*. Trondheim, Norway. (2009, pp. 2764-2771) [*GECCO best paper award winner*]
- 46\*. Wesley R. Elsberry, Laura M. Grabowski, Charles Ofria, and **ROBERT T. PENNOCK**. "Cockroaches, Drunkards, and Climbers: Modeling the Evolution of Simple Movement Strategies Using Digital Organisms." *Proceedings of IEEE Symposium on Artificial Life (ALIFE 2009) Symposium Series on Computational Intelligence*. (2009, pp. 92-99)
- 45\*. Jeff Clune, Charles Ofria and **ROBERT T. PENNOCK**. "How A Generative Encoding Fares as Problem-Regularity Decreases." In G. Rudolph et al. (eds.). *Parallel Problem Solving in Nature*. Berlin: Springer-Verlag (2008, pp. 358-367).
- 44\*. Jeff Clune, Charles Ofria and **ROBERT T. PENNOCK**. "How Generative Encodings Fare on Less Regular Problems." *Genetic and Evolutionary Computation Conference (GECCO '08) Proceedings*. New York: Association for Computing Machinery (2008, pp. 867-868)
- 43\*. Laura Grabowski, Wesley Elsberry, Charles Ofria and **ROBERT T. PENNOCK**. "On the Evolution of Motility and Intelligent Tactic Response." *Genetic and Evolutionary Computation Conference (GECCO '08) Proceedings*. New York: Association for Computing Machinery (2008, pp. 209-216)

## ARTICLES (CONTINUED)

42. Jon D. Miller and **ROBERT T. PENNOCK**. "Science Education and Religion in American in the 21st Century: Holding the Center." In Ariela Keysar & Barry A. Kosmin (eds.) *Secularism & Science in the 21st Century*. Institute for the Study of Secularism in Society and Culture (2008, pp. 9-32)  
• 42b. Excerpt reprinted in *Science Education and Secular Values: A Special Supplement to Religion in the News*. Summer/Fall. (2007, pp. 4, 9-10)
- 41\*. **R. T. PENNOCK**. "Learning Evolution and the Nature of Science using Evolutionary Computing and Artificial Life." *McGill Journal of Education* (2007, Vol. 42, No. 2, pp. 211-224)
- 40\*. **R. T. PENNOCK**. "Biology and Religion" In Ruse, Michael and David Hull (eds.) *Cambridge Companion to Philosophy of Biology*. Cambridge Univ. Press. (2007, pp. 410-428)
- 39\*. Jeff Clune, Charles Ofria, **ROBERT T. PENNOCK**. "Investigating the Emergence of Phenotypic Plasticity in Evolving Digital Organisms" In Almeida e Costa, F., Rocha, L.M., Costa, E., Harvey, I. and Coutinho, A., *Advances in Artificial Life*. Berlin: Springer. (2007, pp. 74-83).
- 38\*. **R. T. PENNOCK**. "Models, Simulations, Instantiations and Evidence: The Case of Digital Evolution" *Journal of Experimental and Theoretical Artificial Intelligence* (2007, Vol. 19, No. 1, pp. 29-42)
- 37\*. **R. T. PENNOCK**. "God of the Gaps: The Argument from Ignorance and the Limits of Methodological Naturalism" In Petto, Andrew & Laurie Godfrey (eds.) *Scientists Confront Creationism and Intelligent Design*. W. W. Norton & Co. (2007, pp. 309-338)
36. **R. T. PENNOCK**. "How Not to Teach the Controversy about Creationism." In Jones, Leslie S. and Michael J. Reiss (eds.) *Teaching About Scientific Origins While Taking Account of Creationism*. Peter Lang Publishers. (2007, pp. 59-74)
- 35\*. **R. T. PENNOCK**. "Pre-Existing Conditions: Genetic Testing, Causation and the Justice of Medical Insurance." In Rhodes, Rosamond, Leslie Francis, Anita Silvers (eds.) *Blackwell Guide to Medical Ethics*. (2006, Ch. 23. pp. 407-424)
- 34\*. **R. T. PENNOCK**. "The Pre-Modern Sins of Intelligent Design." In Clayton, Phillip (ed.) *Oxford Handbook of Science and Religion*. Oxford: Oxford University Press. (2006, Ch 43. pp. 732-748)
- 33\*. **R. T. PENNOCK**. "Scientific Integrity and Science Museums." *Museums and Social Issues*. (Spring 2006, Vol. 1 No. 1. pp. 7-18)
32. **R. T. PENNOCK**. "Expert Witness Report." *Kitzmiller et al v. Dover Area School District* (2005)
- 31\*. **R. T. PENNOCK**. "On Teaching Evolution and the Nature of Science." In Cracraft, J. and R. Bybee (eds.). *Evolutionary Science and Society: Educating a New Generation*. Biological Sciences Curriculum Study, Colorado Springs, CO. (2005, pp. 1-12)

## ARTICLES (CONTINUED)

- 30\*. **R. T. PENNOCK.** "Determinism." In *Encyclopedia of Science, Technology, and Ethics*. 4 volumes. Carl Mitcham (Ed.) Detroit: Macmillan Reference. (2005, Vol. 2, pp. 511-513)
- 29\*. **R. T. PENNOCK.** "Bayesianism, Ravens and Evidential Relevance." *Annals of the Japan Association for Philosophy of Science* Invited article. (2004, Vol. 13, No. 1, pp. 1-26)
- 28\*. Sherri Goings, Jeff Clune, Charles Ofria, **ROBERT T. PENNOCK.** "Kin-Selection: The Rise and Fall of Kin-Cheaters." In Pollack, Jordan, M. Bedau, P. Husbands, T. Ikegami and R. Watson. (eds.) *Artificial Life IX: Proceedings of the Ninth International Conference on the Simulation and Synthesis of Living Systems*. (2004, pp. 303-308)
- 27\*. **R. T. PENNOCK.** "DNA by Design?: Stephen Meyer and the Return of the God Hypothesis." In Ruse, Michael and William Dembski (eds.) *Debating Design*. New York: Cambridge University Press (2004, pp. 130-148)
- 26\*. **R. T. PENNOCK.** "Creationism and Intelligent Design" *Annual Review of Genomics and Human Genetics*. (Vol. 4: 143-163, Sept. 2003)
25. **R. T. PENNOCK.** "Critique of Philip Johnson." In Parsons, Keith (ed.) *The Science Wars: Debating Scientific Knowledge and Technology*. Prometheus Press. (2003, pp. 277-306)
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23. **R. T. PENNOCK.** "Research Funding and the Virtue of Scientific Objectivity" *Academic Integrity* (Spring 2002, Vol. V. No. 2, pp. 3-6)
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- 21\*. **R. T. PENNOCK.** "Whose God? What Science?: Reply to Behe." *Reports of the National Center for Science Education* (Vol. 21 No. 3-4 pp. 16-19, May-Aug. 2001)
20. **R. T. PENNOCK.** "The Virtuous Scientist Meets the Human Clone." In *New Ethical Challenges in Science and Technology. Sigma Xi Forum 2000 Proceedings*. 2001, pp. 117-124.
19. **R. T. PENNOCK.** "On Observing Evolution." [Modified excerpt from *Tower of Babel*.] In Society for the Study of Evolution/Society for Molecular Biology and Evolution. *The Web of Life: Evolution in Action*. Presentations at the National Association of Biology Teachers Annual Conferences. 1998-2000.

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17. **R. T. PENNOCK.** "Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas." *AAAS Dialogue on Science, Ethics and Religion*. 2000.
16. **R. T. PENNOCK.** "The Wizards of ID: Reply to Dembski."  
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- 14\*. **R. T. PENNOCK.** "The Prospects for a Theistic Science."  
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13. **R. T. PENNOCK.** "Death and Taxes: On the Justice of Conscientious Objection to War Taxes." In Robert W. McGee (ed.) *The Ethics of Tax Evasion*. South Orange, NJ.: The Dumont Institute for Public Policy Research, pp. 124-142. 1998.  
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- 7\*. **R. T. PENNOCK.** "Reply to Johnson - Johnson's Reason in the Balance."  
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- 5\*. **R. T. PENNOCK.** "Epistemic and Ontic Theories of Explanation and Confirmation." *Philosophy of Science—Japan* (Vol. 28:31-45, 1995)
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2. **R. T. PENNOCK.** "Marshall Nirenberg invents an experimental technique that cracks the genetic code." *Great Events in History: Science and Technology*. U.S.A.: Salem Press (1991)
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**BOOK REVIEWS & ESSAYS**

12. **R. T. Pennock** Review of Charles Taliaferro and Jil Evans. *The Image in Mind*. *Notre Dame Philosophical Reviews* (April 1, 2012) <<http://ndpr.nd.edu/news/29978-the-image-in-mind-theism-naturalism-and-the-imagination>>
11. **R. T. PENNOCK** Review of Wendy Wagner & Rena Steinzor (eds.) *Rescuing Science from Politics*. *Isis* (Vol. 100, pp. 957-958, 2009).
10. **R. T. PENNOCK** "Evolution: Once More, With Feeling." (Dual review of George Levine's *Darwin Loves You* and David Sloan Wilson's *Evolution for Everyone*.) *American Scientist*. (Nov/Dec 2007)
9. **R. T. PENNOCK** "Explaining Bioethics to Others." (Dual review of "Bryant, Baggot la Velle, & Searle's *Bioethics for Scientists* and Miller & Humber's *The Nature and Prospect of Bioethics*.) *Quarterly Review of Biology*. (Vol. 79, No. 3, pp. 295-296, Sept. 2004)
8. **R. T. PENNOCK** "God and Nature Revisited." Lindberg and Numbers' When Science and Christianity Meet. *Trends in Ecology and Evolution*. (Vol. 19, No. 1, pp. 8 – 9, January 2004)
7. **R. T. PENNOCK** "Bowler on Science and Religion" *Endeavour*. (Vol. 7. No. 23, pp. 101-102. September 2003)
6. **R. T. PENNOCK** "A Bridgewater Treatise for the 21<sup>st</sup> Century." Michael Ruse's *Darwin & Design*. *Science*. (Vol. 301, p. 1051, 22 Aug. 2003)
5. **R. T. PENNOCK** "Johnson's Defeating Darwinism" (Review Essay) *Reports of the Nat. Center for Sci. Ed.* (Vol. 17, No. 6, pp. 36-38, Nov/Dec 1998)
4. **R. T. PENNOCK** Dunbar's *The Trouble with Science* *Quarterly Review of Biology*: (Vol. 73, No. 1, pp. 61, March 1998)
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2. **R. T. PENNOCK** "Ethical Theory Applied to the Scientific Enterprise." (Review Essay)
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  - (ii) Shrader-Frechette's *Ethics of Scientific Research*
  - (iii) Penslar's *Research Ethics: Cases & Materials**American Scientist* (March/April:179-180, 1996)
1. **R. T. PENNOCK** "David-Hillel Ruben's Explaining Explanation" *Philosophy of Science* (Vol. 61(1): 146-147, 1994)

**EXTENDED ABSTRACTS**

1. Bartlett III FN, Dyer F, **Pennock RT**, "Evolution of migratory-like behavior in Avidians." *Artificial Life 13: Proceedings of the Thirteenth International Conference on the Simulation and Synthesis of Living Systems*. (pp. 511-512, 2012)

## MAGAZINE, NEWSPAPER &amp; RADIO PUBLICATIONS

16. **R. T. PENNOCK** "Reaffirming the Norms of Science" Philosophy in the Contemporary World. *Blog of the American Philosophical Association*.  
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16. **R. T. PENNOCK** "Defending Scientific Integrity" *360 Perspective*. Faculty Voice. MSU Today. <http://msutoday.msu.edu/360/2016/robert-pennock-defending-scientific-integrity/> (Feb. 9, 2016)
15. **R. T. PENNOCK** "Following Humbly where Nature Leads: How Scientists Embody Humility" *Slate*. What Do We Know? Essays and Opinions. (Aug. 10, 2015)
14. **R. T. PENNOCK** "Creation of Christian Soldiers a Chilling Sidelight of Darwin Bashing" *U.S. News & World Report*. Room for Debate. (Feb. 18, 2009)
13. **R. T. PENNOCK** "Creation-Science and Intelligent Design: Different Names for Religious Theory" *U.S. News & World Report*. Room for Debate. (Feb. 10, 2009)
12. **R. T. PENNOCK** "Creationist Culture Wars, Hollywood Style" *Michigan Messenger* (May 26, 2008)  
12b: Reprinted in *Reports of the National Center for Science Education* (Sept-Dec 2008, pp. 25-26)
11. **R. T. PENNOCK** "Of Swords and Smoking Guns" *Science & Theology News* (February 2006, p. 9)
10. **R. T. PENNOCK** "Fool Me Once..." – Letter to editor. Reply to DI president Bruce Chapman. *Lansing State Journal*. (Oct. 10 2005)
9. **R. T. PENNOCK** "The Very Model of Evolution?" Reply to letters to the editor re: "Testing Darwin." *Discover* (April, 2005, p. 8)
8. **R. T. PENNOCK** "ID's War: What is it Good For?" *Science & Theology News* (Vol. 2, No. 11/12, July/August 2002 pp. 33-34)
7. **R. T. PENNOCK** "Mystery Science Theater: The Case of the Secret Agent" *Natural History* (April, 2002, p. 77)  
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7c: Reprinted in *Biology 1001: Evolution and Ecological Perspectives*. Boston, MA: Pearson Publishing Co. (2005)  
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6. **R. T. PENNOCK** "Evolution, History and 'Local Control'" *Talking History* – National Public Radio show (April 17, 2000)
5. **R. T. PENNOCK** "Creationism vs. Evolution: New Tactics in an Old Battle." *The College of New Jersey Magazine* (Vol. 4, No. 2, Spring 2000, pp. 8 - 15)
4. **R. T. PENNOCK** "Those Old Contentious Bones." *Earlhamite* (January 2000)

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3. **R. T. PENNOCK** "Of Design and Deception: Kansas, Conflict and Creation."  
*Science & Spirit* (Vol. 10, No. 4, pp. 8-9, 22; Nov/Dec 1999)
2. **R. T. PENNOCK** "Tower of Babel in Kansas."  
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1. **R. T. PENNOCK** "Creationism's War on Science."  
*Environmental Review* (Vol. 5, No. 2, pp. 7 - 16, February 1998)

**CURRICULAR MATERIALS**

4. **R. T. PENNOCK** "From Genotype to Phenotype: Understanding the Introduction of Phenotypic Variations" (2014)
3. Amy Lark & **R. T. PENNOCK** "Exploring Selection and Fitness" (2014)
2. **R. T. PENNOCK** & Amy Lark "Experimental Evolution Project with Evolving Digital Organisms" (2014)
1. **R. T. PENNOCK** & Amy Lark "Exploring Mutation and Mutation Rates" (2013)

**VIDEO RECORDINGS**

10. *Intelligent Design on Trial: Lessons from the Kitzmiller v. Dover creationism case.* (Producer/Editor) Society for the Study of Evolution Education & Outreach video series. (2015)
9. *The Ground Rules of Science.* Society for the Study of Evolution Education & Outreach video. (2015) <https://youtu.be/Drb8bPjL7TM>
8. *Pathways to Success.* MSU New Faculty Orientation Video. (2014)
7. *Society for the Study of Evolution (SSE) Stephen Jay Gould Prize talks.* YouTube. (2009-2017)
6. *Society for the Study of Evolution (SSE) Darwin Video Birthday Card.* YouTube. (2009)
5. *Judgment Day: Intelligent Design on Trial.* NOVA. (2007)  
<http://www.pbs.org/wgbh/nova/id/>  
<http://www.pbs.org/wgbh/nova/id/defining.html>
4. *Scopes: The Battle for America's Soul.* 10 Days that Unexpectedly Changed America. The History Channel. (2006)
3. *A Convocation on Intelligent Design Creationism.* UC-San Diego. (2006)



**VIDEO RECORDINGS (CONT.)**

2. *Genetics Screening Technology: Challenges for Individuals, Physicians and Health Insurers*. Mayo Clinic Productions. (2002)
1. *The New Creationism*. Skeptics Lecture Series at Caltech. Skeptic Society Video AV96. (2001)

**AUDIO RECORDINGS**

1. *Kansas Redux?: responding to the Michigan neo-creationism legislation*. Michigan State University Libraries' Colloquia Series. (Producer/Editor) Vincent Voice Library. (Sept. 19, 2011)

**BOOKS IN PROGRESS**

*Darwin's Law: Artificial Life and Evolutionary Design*. Book on evolutionary teleology and the universality of the evolutionary mechanism with special focus on evolutionary computation and digital evolution as instantiations of the process.

*Science Ethics: Character and Responsible Conduct*. Textbook based on my virtue-theoretic account of exemplary scientific practice.

*An Evolutionary Lens: Learning Evolution and the Nature of Science using Evolving Digital Organisms*. Textbook on evolution and scientific methodology based on my digital evolution education software.

*Reason Enough: The Evolution of Intelligence*. Book on my philosophical and empirical research on the evolution of reasoning ability.

**REFEREED & INVITED CONFERENCE PAPERS**

\* Invited presentation

\*\* Invited plenary presentation

130. "Curiosity as an "Instinct for Truth"" *Evolution 2019*. Providence, RI (6/25/19)
129. "Students reason similarly about bacteria and birds: A case study" (w/ Mike Wiser, Jim Smith, Louise Mead) Poster Presentation at *Evolution 2019*. Providence, RI (6/24/19)
128. "Avida-ED 4.0 - Ecology" (w/ Diane Blackwood, Charles Ofria) Poster Presentation at *Evolution 2019*. Providence, RI (6/24/19)
127. "Avida-ED: Overview: Experimental Evolution in the Classroom." Professional development for undergraduate educators. *Evolution 2019*. Providence, RI (6/21/19)
126. "What Traits of Character do Exemplary Scientists Value?: Results from the Scientific Virtues Survey." (w/ Jon Miller) *6<sup>th</sup> World Conference on Research Integrity*. Hong Kong (6/3/19)
125. "The Humanities Virtues Project: Bringing a Virtue-based approach to Responsible Conduct of Research Training to the Humanities." (w/ Chet McLeskey and Michael O'Rourke) *6<sup>th</sup> World Conference on Research Integrity*. Hong Kong (6/3/19)
124. "The Humanities Virtues Project: Bringing a Virtue-based approach to Responsible Conduct of Research Training to the Humanities." (w/ Chet McLeskey and Michael O'Rourke) *Association for Practical and Professional Ethics (APPE) 28<sup>th</sup> Annual Conference*. Baltimore MD (3/2/19)
123. "Scientific Virtue and Responsible Conduct of Research Training: Results from the Scientific Virtues Toolbox Workshops" (w/ Eric Berling, Chet McLeskey and Michael O'Rourke) Poster Presentation at *American Association for the Advancement of Science*. Washington DC (2/15/19)
122. "Avida-ED Overview: Experimental Evolution in the Classroom" *Artificial Life 2018*. Tokyo, Japan. (7/26/18)
121. \*\*"This is Not a Simulation: Experimental Evolution using Evolving Digital Organisms." *Artificial Life 2018*. Tokyo, Japan. (7/25/18)
120. "A Virtuous Instinct for Truth." Workshop at *Friends General Conference Gathering*. Toledo, OH. (7/2-6/18)
119. "Visualizing Biological Variation with Avida-ED to Shift Students from Transformational to Variational Understanding." (w/ Cory Kohn, Michael J. Wiser, Louise S. Mead, James J. Smith) Poster Presentation at *Society for the Advancement of Biology Education Research (SABER) Conference*. Minneapolis, MN. (7/27/18)
118. \*\*"Curiosity and the Moral Character of Science." *Undergraduate Research Summer Institute (URSI) Conference*. Vassar College. Poughkeepsie, New York. (9/27/17)
117. "Avida-ED: a web-based, GUI implementation of the Avida software platform, for educational use." *European Conference on Artificial Life*. Lyon, France. (9/7/17)

**REFEREED & INVITED CONFERENCE PAPERS (CONTINUED)**

116. "The Scientific Virtues: Results of an Interdisciplinary Study." *5th World Conference on Research Integrity*. Amsterdam, The Netherlands. (5/29/17)
115. "A Virtue-Based Responsible Conduct of Research (RCR) Curriculum: Pilot Test Results." (w Eric Berling & Chet McLeskey) *5th World Conference on Research Integrity*. Amsterdam, The Netherlands. (5/29/17)
114. "Reviewing the Responsible Conduct of Research Literature from a Scientific Virtue Perspective." (w Chet McLeskey & Eric Berling) *5th World Conference on Research Integrity*. Amsterdam, The Netherlands. (5/29/17)
113. \*\*"Rethinking Science Ethics Training in light of the Scientific Character Virtues." *NSF Science & Technology Centers Directors Meeting*. Washington DC. (8/25/16)
112. "Avida-ED 3.0: The Digital Evolution Education Platform, Now in the Browser." *Evolution 2016: Society for the Study of Evolution*. Austin TX. (6/18/16)
111. "The Scientific Virtues: Results of an Interdisciplinary Study." *Character and Virtue in the Professions*. Univ. of Birmingham. Birmingham UK (6/4/16)
110. "A Virtue-Based Responsible Conduct of Research (RCR) Curriculum: Pilot Test Results." *Character and Virtue in the Professions*. (w Eric Berling & Chet McLeskey) Univ. of Birmingham. Birmingham UK (6/4/16)
109. "Reviewing the Responsible Conduct of Research Literature from a Scientific Virtue Perspective." (w Chet McLeskey & Eric Berling) *Character and Virtue in the Professions*. Univ. of Birmingham. Birmingham UK (6/4/16)
108. "Experimental Evolution in the Classroom: The Active LENS Project." *Envisioning the Future of Undergraduate STEM Education: Research and Practice*. Washington DC. (4/28/16)
107. \*\*"Scientific Values and Character Virtues." *American Association for the Advancement of Science*. Washington DC. (2/15/16)
106. \*\*"Scientific integrity and the Rise and Fall of Intelligent Design Creationism." *American Association for the Advancement of Science*. Washington DC. (2/13/16)
105. \*"What is it to be Human: Implications of Artificial Intelligence & Robotics." *Religious Newswriters Association (RNA) conference*. Philadelphia PA (8/27/15)
104. "Scientific Values and Character Virtues." *Socially Relevant Philosophy of/in Science and Environment (SRPoiSE) conference*, Detroit MI. (3/27/2015)
103. "Digital Darwin: Evolution in Action in Your Computer." *National Association of Biology Teachers (NABT) Professional Development conference*, Cleveland OH. (11/14/2014)
102. "Evolution in Action in the Classroom with Avida-ED Digital Evolution Software." (w Wendy Johnson) *Life Discovery – Doing Science conference*, San Jose CA. (10/3/2014)

## REFEREED &amp; INVITED CONFERENCE PAPERS (CONTINUED)

101. \**“Communicating Evolution.” The Science of Science Communication II*, Sackler Colloquium, National Academies of Science, Washington, DC. (9/25/2013)
100. “Learning with digital evolution software: Improving student understanding and acceptance of evolution.” (w/ Amy Lark, Wendy Johnson, Louise Souther Mead, Jim Smith, Gail Richmond) *Vision & Change in Undergraduate Education: Chronicling Change, Inspiring the Future*, Washington, DC. (8/28/2013)
99. “Going Live: The Origin of (Artificial) Life” *International Society for History, Philosophy and Social Studies of Biology* (7/10/2013)
98. “Learning with digital evolution software: Improving student understanding and acceptance of evolution.” (w/ Amy Lark, Wendy Johnson, Louise Souther Mead, Jim Smith, Gail Richmond) *Society for the Advancement of Biology Education Research (SABER)*, Minneapolis, MN. (July 11 - 14, 2013)
97. “Learning with digital evolution software: Improving student understanding and acceptance of evolution.” (w/ Amy Lark, Wendy Johnson, Louise Souther Mead, Jim Smith, Gail Richmond). *Evolution 2013*, Snowbird, UT. (June 20 - 26, 2013)
96. “Modeling evolution in the classroom: The case of Fukushima’s mutant butterflies.” (w/ Amy Lark, Gail Richmond). *CREATE-ing Collaborations in STEM Education Research* Mini-Conference, East Lansing MI. (5/7/13)
95. “Teaching with digital evolution software: Assessing student understanding of fundamental concepts.” (w/ Amy Lark, Wendy Johnson, Louise Souther Mead, Jim Smith, Gail Richmond). *Mid-west Ecology and Evolution Conference (MEEC)*, South Bend, IN. (3/24/13)
94. \**“Evolutionary Transformations: The Legacies of Two Influential Scientists on Evolutionary Thought”* National Association of Biology Teachers (NABT) conference, Dallas TX (11/2/12)
93. \*\*\**“Speaking about Evolution to the Public.” 3<sup>rd</sup> BEACON Congress*. East Lansing, MI (7/18/12)
92. \**“Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software”* International Artificial Life XIII Conference. (7/19/12)
91. \**“Avida-ED Software Demonstration”* Education Symposium. Society for the Study of Evolution Conference. Ottawa, Canada (7/7/12)
90. “Evolution in action in the classroom: Teaching and learning about evolution and the nature of science with Avida-ED.” (w/ Amy Lark, Wendy Johnson, Louise Souther Mead & James A. Smith). Poster presentation at *First Joint Congress on Evolutionary Biology*. Ottawa, Canada. (7/9/12)

## REFEREED &amp; INVITED CONFERENCE PAPERS (CONTINUED)

89. "Experimenting with natural selection in the classroom using Avida-ED." (w/ Amy Lark, Wendy Johnson, Louise Mead & James A. Smith). Poster presentation at *CREATE-ing the Future of STEM Education*, East Lansing MI. (5/8/12)
88. \*\*\*"City Life: On Thinking of the City as an Artificial Organism." *Science and the City conference*, St. Louis, MO. (10/27/11)
87. \*\*\*"Thinking Evolutionarily." *Thinking Evolutionarily: Evolution across the Life Sciences convocation*, National Research Council, Washington DC (10/25/11)
86. "Innovation by Evolutionary Computation." *Santa Fe Institute Business Network Meeting: Innovation: Adventures in Possibility Space*, National Semiconductor University, Santa Clara, CA (8/24/11)
85. "Altruism Evolving: Empirical and Philosophical Tests." *The Evolution of Morality and the Morality of Evolution*, Ian Ramsey Center, Oxford University, Oxford UK. (7/9/11)
84. \*\*\*"Where is the research field of biology headed over the next ten years: What are the implications for biology education?" *IRMSE Biology Forum*, Chicago IL. (4/27/11)
83. \*\*\*"From AI to EI: Modeling the Evolution of Intelligence from the Bottom Up" Midwest Cognitive Science Conference Distinguished Speaker lecture, East Lansing MI. (4/16/11)
82. "Models of Artificial Life: Herbert Simon and Evolutionary Computation" *ALife XII*. Odense, Denmark (8/23/10)
81. "Early Evolution of Memory Usage in Digital Organisms" *ALife XII*. Odense, Denmark (8/23/10)
80. \*\*\*"Shining the BEACON: Communicating Evolution in Action" *BEACON Congress*. East Lansing, MI (6/26/10)
79. \*\*\*"Communicating Evolution" *Evolution 2010: Society for the Study of Evolution*. Portland, OR (6/26/10)
78. \*\*\*"Can't Philosophers Tell the Difference between Science and Religion" *RUSE-terfest conference*. Univ. of Florida, Tallahassee, FL (4/16/10)
77. "The Postmodern Sins of Intelligent Design Creationism." *Darwinism, Science, Religion and Society conference*, University of Cincinnati, Cincinnati OH. (10/29/09)
76. \*\*\*"Judgment Day: When ID Creationism had Its Day in Court" *Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) conference*. Dallas TX (10/16/09)
75. \*\*\*"Reason Enough for Scientific Researches': Darwin and the Scientific Virtues" *International History and Philosophy of Science Teaching Group conference*. Notre Dame, IN (6/24/09)
74. "Scientific Virtue as a Bridge Between the Two Cultures" *Science & Liberal Education: CP Snow and the Two Cultures @ 50*, East Lansing, MI (5/29/09)

## REFEREED &amp; INVITED CONFERENCE PAPERS (CONTINUED)

73. \*\*\*"Reason Enough for Scientific Researches': Darwin and the Scientific Virtues" *American Institute of Biological Sciences conference*, Washington DC (5/18/09)
72. "Defending Evolution Education: A Toolkit for Citizens for Science." *AAAS Speak Out For Science*. Tulsa, OK. (3/28/09)
71. \*\*\*"Design by Darwin: How Digital Evolution Is Extending the Darwinian Revolution" *Wayne State University Academy of Scholars Senior Lecture*. Wayne State University, Detroit MI (12/12/08)
70. \*\*\*"Bottom Up: Investigating the Evolution of Intelligent Behavior" *Cambridge Templeton Consortium PI Conference*. Cambridge Univ., Cambridge UI (10/20/08)
69. "Avida-ED: Technology for Teaching Evolution and the Nature of Science using Digital Organisms" *National Science Foundation CCLI PI Conference*. Washington, DC (8/14/08)
68. "Does Design Require a Designer" *God, Design & Nature conference*. Oxford University, Oxford UK (7/10/08)
67. \*\*\*"Learning about evolution and the nature of science using digital organisms" *Evolution 2008 Society for the Study of Evolution (SSE) conference*. Minneapolis, MN (6/22/08)
66. "Cockroaches, Drunkards and Climbers: Modeling the Evolution of Simple Movement Strategies Using Digital Organisms" (Wesley R. Elsberry & Laura M. Grabowski) Poster presentation at *Evolution 2008 Society for the Study of Evolution (SSE) conference*. Minneapolis, MN (6/22/08)
65. \*\*\*"Evolving Intelligent Behavior in Digital Organisms (and Beyond)" 7th Annual International Bioethics Forum: Evolution in the 21st Century. BioPharmaceutical Technology Center, Madison, WI (4/18/08)
64. \*\*\*"Computer Based Evolution Education Materials: Working with Advanced Learners" 7th Annual International Bioethics Forum: Evolution in the 21st Century. BioPharmaceutical Technology Center, Madison, WI (4/18/08)
63. \*\*\*"Lessons from the *Kitzmiller v. Dover* Creationism Trial" 7th Annual International Bioethics Forum: Evolution in the 21st Century. BioPharmaceutical Technology Center, Madison, WI (4/17/08)
62. \*\*\*"Science, Evolution, and Creationism: How Teachers Can Benefit from a Publication of the National Academy of Sciences and the Institute of Medicine" National Association of Biology Teachers Conference, Atlanta, GA (11/28/07)
61. "Learning Evolution and the Nature of Science using Digital Organisms" (Half-day workshop) National Association of Biology Teachers Conference, Atlanta, GA (11/28/07)
60. "Learning Evolution and the Nature of Science using Digital Organisms" National Science Teachers Association Conference, Detroit, MI (10/19/07)

**REFEREED & INVITED CONFERENCE PAPERS (CONTINUED)**

59. \*"Developing Avida-ED Evolutionary Computation Education Software." Workshop on Open-Source Software for Applied Genetic and Evolutionary Computation. Genetic and Evolutionary Computation Conference, London, England (7/7/07)
58. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." Evolution 2007, Society for the Study of Evolution. Christchurch, New Zealand (6/19/07)
57. \*"Science Education and Religion in the 21st Century: Holding the Center." Workshop on Science Education and Secular Values. Institute for the Study of Secularism in Society and Culture (ISSSC), Trinity College, Hartford, CT. (5/22/07)
56. "Adapting Avida as an Evolution Education Tool: Development of Model Lesson Plans" (Poster session) James J. Smith, Robert T. Pennock, Jeff Clune, Eric Armstrong, Max Braverman, Candice Brady. Sigma Xi, The Scientific Research Society Annual Meeting and Student Research Conference. Detroit, MI. (11/4/06)
55. \*""The Ground Rules of Science: Why the Judge Ruled Intelligent Design Creationism Out of Court." Politics and Religion conference. Grinnell, IO. (11/2/06)
54. \*"Modeling the Evolution of Altruism with Digital Organisms." North American Computing and Philosophy conference. Troy, NY. (8/11/06)
53. "Adapting Avida as an Evolution Education Tool: Development of Model Lesson Plans" (Poster session) James J. Smith, Robert T. Pennock, Jeff Clune, Eric Armstrong, Max Braverman, Candice Brady. Society for the Study of Evolution. Stony Brook, NY. (6/26/06)
52. \*"The Ground Rules of Science." Society for the Study of Evolution. Stony Brook, NY. (6/26/06)
51. \*"The Nature of Science and the Scientific Virtues." New York Academy of Sciences. New York, NY. (4/29/06)
50. \*""Organs of Extreme Perfection: The Design Argument meets Evolution, Then and Now" Darwinian Evolution in the 21st Century. University of Colorado - Boulder, CO. (4/7/06)
49. \*"Learning Evolution and the Nature of Science." American Association for the Advancement of Science. St. Louis, MI. (2/16/06)
48. "Life Forms and Forms of Life: Wittgensteinian & Darwinian Insights on the Meaning of Life and ALife." International Society for History, Philosophy and Social Studies of Biology. Guelph, Canada. (7/16/05)
47. \*""Darwin and the Parasitic Wasp: On Teaching Evolutionary Design." Evolution of Infectious Diseases Conference. National Institutes of Health. Washington DC. (7/14/05)
46. "Models, Simulations, Instantiations and Evidence: The Case of Digital Evolution" Evolution and Computation workshop. Philosophy of Science Association. Austin, TX. (11/18/04)

**REFEREED & INVITED CONFERENCE PAPERS (CONTINUED)**

45. \*"Evolution and the nature of science." American Institute of Biological Sciences/National Association of Biology Teachers Special Symposium "Evolutionary Science and Society: Educating a New Generation". Chicago, IL. (11/12/04)
44. "Controlling Bio-Technology: Professional, Personal and Public Perspectives." American Society for Bioethics and Humanities 6th Annual Meeting. Philadelphia, PA. (10/28/04)
43. "Life Forms and Forms of Life: Wittgensteinian and Darwinian Insights on the Meaning of A-Life" Artificial Life conference. Boston, MA (9/12/04)
42. \*"Intelligent Design Creationism in Biology: It's Deja Vu All Over Again" Colorado Citizen's for Science "The Pseudoscience of Intelligent Design Creationism" Symposium. Fort Collins, CO. (6/26/04)
41. \*"Commentary on Paul C. Anders vs. William Dembski on Biological Information and the Intelligent Design Argument." American Philosophical Association—Pacific Div. Pasadena, CA (3/25/03)
40. \*"Neocreationist Criticisms of Evolutionary Origin of Complex Features" Biocomplexity Conference. Caltech. Pasadena, CA (8/14/03)
39. \*"Outline of a Guidebook for Defending Evolution Education." National Summit on Evolution Education Activism. Berkeley, CA (6/1/03)
38. \*"Darwin and the Parasitic Wasp: Teaching Evolutionary Design" 55th Annual Midwestern Conference of Parasitology. East Lansing, MI (6/6/03)
37. \*"Challenges in Teaching Evolution" 'Teaching and Learning Evolution: Lessons from Research and Practice' Conference. Southwest Educational Development Laboratory & Southwest Consortium for the Improvement of Mathematics and Science Teaching. Austin, TX (11/4-5/02)
36. "Conceptual Issues in Experimental Evolution Research" Biocomplexity Conference. East Lansing, MI (9/7/02)
35. \*"What is Intelligent Design?: Problems with Dembski's Design Inference." Symposium on Intelligent Design. American Museum of Natural History. New York, NY. (April 23, 2002)
34. \*Special symposium on *Tower of Babel*. Association for Informal Logic and Critical Thinking (AILACT). Ronald Giere and Sandra Mitchell, commentators. American Philosophical Association Conference, Atlanta, GA (Dec. 27 - 30, 2001)
33. \*"Taking Philosophy of Science Outside the Ivory Tower: Thoughts on Teaching in the Extended Classroom." 6th International History, Philosophy and Science Teaching Conference. Denver, CO. (Nov. 7 - 11, 2001)
32. \*"Pedagogy of Ethics in Science" Panelist Science and Ethics Teaching Workshop. Univ. of South Carolina. (Nov. 2, 2001)



**Refereed & Invited Conference Papers (continued)**

31. **"It's Hard to Get Much Research Done with all these Ethicists Around"**  
Science and Ethics Teaching Workshop. Univ. of South Carolina. (Nov. 1, 2001)
30. **"Getting A-Life: Negotiating the Boundary Between Virtual and Real"**  
International Society for History, Philosophy & Social Studies of Biology Annual Conference. Hamden, CT. (July 18-22, 2001)
29. **"Splitting Science: The Intelligent Design 'Wedge' Movement"**  
American Geophysical Union Annual Conference. Boston, MA. (May 29, 2001)
28. **"Simulation and Instantiation: Is Evo-Technology a Model of Darwinian Evolution or the Real Thing?"**  
Model Based Reasoning 2001 Conference. Pavia, Italy. (May 17-19, 2001)
27. **"Genetic Technologies and Ethics."**  
102nd Michigan Osteopathic Association Conference (May 11, 2001)
26. **"Commentary on Barry Palevitz's paper."** Evolution Education Defense Summit Meeting, Kansas City, KS (March 30, 2001)
25. **"Eden & Babel: Theoretical Parallels between the Evolution of Species and Languages"**  
International Academy of Linguistics, Behavioral and Social Sciences Conference. Orlando, FL. (Nov. 18, 2000)
24. **"Genetic Technology and the Virtuous Scientist"** Sigma Xi Forum. New Ethical Challenges in Science and Technology. Albuquerque, NM. (Nov. 9-10, 2000)
23. **"On Observing Evolution"** National Association of Biology Teachers Conference. Orlando, FL. (Oct. 26, 2000)
22. **"Blunting 'the Wedge': Responses to Neocreationist Arguments"**  
Society for the Study of Evolution Conference. Bloomington, IN. (June 23, 2000)
21. **"Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas"**  
AAAS Science, Teaching & the Search for Origins Conference. University of Kansas. Lawrence, KS. (April 15, 2000)
20. **"Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas"**  
Conference for the Advancement of Science Teaching. Lubbock, TX. (Oct. 29, 1999)
19. **"The Prospects for a Theistic Science."**  
American Atheists' Union Conference. Austin, TX. Invited paper. (Oct. 29, 1999)
18. **"Should Creation Science Be Taught in the Public Schools?"**  
Alvin Plantinga gives paper in response.  
APA Eastern Division Mtg. - Association for Philosophy of Education (Dec. 1998)
17. **"Can Darwinian Mechanisms Make Novel Discoveries?: Learning from discoveries made by evolving neural networks."** Model-Based Reasoning In Scientific Discovery Conference (MBR'98) Pavia, Italy (Dec. 17-19, 1998)

**REFEREED & INVITED CONFERENCE PAPERS (CONTINUED)**

16. "Why Science Should Abandon the Authorship Model of Credit"  
Sigma Xi Forum, Vancouver CANADA (Nov. 12 - 14, 1998)
15. "Crediting 'Authorship' in Scientific Research: A Few Terminological Quibbles"  
26th Conference on Value Inquiry, Montevallo AL (April 16-18, 1998)
14. "Is a Necessity-and-Sufficiency Account of Causation Contradictory?"  
20th International Wittgenstein Symposium. "The Roles of Pragmatics in Contemporary Philosophy" Kirchberg am Wechsel, Austria. (August 10-16, 1997)
13. "The Prospects for a Theistic Science"  
Reasons to Believe: An Interdisciplinary Conference on Naturalistic vs. Non-Naturalistic Perspectives. Elizabethtown College, PA. (July 17-20, 1997)
12. "Pre-existing Conditions: Genetic Disease, Causation and the Future of Medical Insurance."  
International Society for the History, Philosophy and Social Studies of Biology Conference (July 16-20, 1997)
11. "Supernaturalist Explanations and the Prospects for a Theistic Science"  
Naturalism, Theism and the Scientific Enterprise Conference (Feb. 20-23, 1997)
10. 'Creating, Assigning, and Evaluating Group Work'  
12th UT Teaching Conference for Experienced Faculty (Jan. 6, 1997)
9. 'Death of the Self: Changing Medical Definitions in Japan and the U.S.'  
24th Southwest Conference of Asian Studies (October 13-14, 1995)
8. 'Creationism in the Science Classroom: Private Faith vs. Public Knowledge'  
23rd Conference on Value Inquiry (April 6-8, 1995)
7. 'Johnson's Conflation of Ontological and Methodological Naturalism'  
Summer Institute on Naturalism, Univ. of Nebraska, Lincoln, NE (July, 1993)
6. 'Confirmation, Explanation and Salmon's Process Ontology'  
Ontology Workshop, UT Austin (December 6, 1991)
5. 'Causal Confirmation & the Color of Emeralds'  
University of Illinois, Urbana/Champaign  
12th Ann. Grad. Stud. Phil. Conference of Univ. of Illinois (April 12-14, 1990)
4. 'Moral Darwinism'  
Indiana University, Bloomington  
9th Annual Graduate Philosophy Conference (March 3, 1990)
3. 'Taxonomic Classification and Inductive Groups'  
Univ. of Illinois, Urbana/Champaign  
11th Ann. Grad. Stud. Phil. Conference of Univ. of Illinois (April 15, 1989)
2. 'The Ethical Argument of Darwin's *Descent of Man*'  
Univ. of Northern Illinois, Midwest Junto for History of Science (April 10, 1987)

**REFEREED & INVITED CONFERENCE PAPERS (CONTINUED)**

1. 'The Ethical Argument of Darwin's *Descent of Man*'  
Harvard University  
Joint Atlantic Seminar for History of Biology (April 4, 1987)

## UNIVERSITY COLLOQUIA &amp; OTHER INVITED PRESENTATIONS

155. "Digital organism's origins and scope: Philosophical aspects of the existence of digital organisms and their relationship with natural organisms." *Semana CELFI de la Docencia, Investigación y Comunicación de la Evolución*. University of Buenos Aires, Argentina. (5/14/19)
155. "Introduction to Avida-ED platform and use of new conceptual tools for the study of evolutionary processes." *Semana CELFI de la Docencia, Investigación y Comunicación de la Evolución*. University of Buenos Aires, Argentina. (5/14/19)
154. "Developing and Pilot-Testing a Virtue-Based Curriculum for Responsible Conduct of Research Training." (w/ Eric Berling, Chet McLeskey, Michael O'Rourke.) STEM Education Alliance *Connecting STEM Education Research and Practice* meeting. Michigan State University (9/13/18)
153. "Translating Expertise into Action." Society for the Study of Evolution Bridging the Science-Policy Void Webinar (2/20/18)
152. "Honesty & Framing in Scientific Communication." Science Communication Workshop, BEACON Congress, MSU (7/4/17)
151. "The Curious Character of the Scientist: Preliminary Results of a National Study of the Scientific Virtues." Notre Dame University, Notre Dame IN (4/19/16)
150. "Teaching Evolution and Scientific Practices using Avida-ED." Project 2061. American Association for the Advancement of Science. Washington DC (6/1/15)
149. "Learning Like a Scientist: Thoughts on Teaching Evolution, the Nature of Science, and the Scientific Virtues." National Science Foundation. Washington DC (5/6/15)
148. "Curiosity and Scientific Integrity: Creationism, Responsible Conduct of Research and the Moral Structure of Science." American Association for the Advancement of Science. Washington DC (4/27/15)
147. "Teaching Evolution and Scientific Practices using Avida-ED." Biology department talk. Sidwell Friends School, Washington DC (2/3/15)
146. "Curiosity and the Purpose of Science." Invited workshop for Graduate Professional Ethics course. University of Idaho. (2/27 & 3/15/14)
145. "Teaching Evolution and the Nature of Science using Avida-ED" Biology Dept. invited seminar, University of Northern Michigan, Marquette, MI (2/13/14)
144. "Digital Darwin: Harnessing Evolution in Your Computer." Darwin Day talk, University of Northern Michigan, Marquette, MI (2/12/14)
143. "EvoSphere." (w/ Arend Hintze) BEACON Friday Seminar. Michigan State University (2/7/13)
142. "Observing Evolution in Action in the Lab and the Classroom." Honors, iBLEND, MARC and RISE symposium. North Carolina A & T University (2/13/13)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

141. "Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." Tapestry Computer Science Workshop. East Lansing, MI (8/1/12)
140. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." iBEST Colloquium, University of Idaho. (11/3/11)
139. "Learning Evolution and the Nature of Science using Digital Organisms." Biology Dept. Colloquium, Utah State University (9/15/11)
138. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." University of Texas at Austin. (3/31/11)
137. "Modeling Evolution in a Computer." Computational Biology class invited lecture, University of Texas at Austin. (3/31/11)
136. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." North Carolina A&T University. (3/24/11)
135. "Evolution in Action: Observing Evolutionary Processes in Real Time." Darwin Day talk, The Citadel. (2/11/11)
134. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." Biology Dept. Colloquium, The College of Charleston. (2/11/11)
133. "Evolution: Reaching the Public." Science Cafe, Clemson SC. (2/8/11)
132. "Evolution in Action: Observing Evolutionary Processes in Real Time." Darwin Day talk, Clemson University. (2/8/11)
131. "But Is It Science?: Creationism on Trial." Public talk, Oakland University. (2/4/10)
130. "Protecting Science & Religious Freedom: Why Intelligent Design Creationism Flunks Out." The Thomas Jefferson Religious Freedom Talk, Univ. of Mary Washington, Fredericksburg VA (1/21/10)
129. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." Biology Colloquium, Univ. of Missouri, Columbia MO (10/9/09)
128. "But Is It Science?: The Philosophical Question in the Creation/Evolution Controversy." Public talk, Univ. of Missouri, Columbia MO (10/8/09)
127. "Design by Darwin: How Digital Evolution Is Extending the Darwinian Revolution." Stiernotte Lecture. Quinnipiac University (9/3/09)
126. "Design by Darwin: How Digital Evolution Is Extending the Darwinian Revolution." Darwin Celebration, University of Toledo, Toledo OH (4/24/09)
125. "Design by Darwin: How Digital Evolution Is Extending the Darwinian Revolution." Biology Department Graduate Student Association colloquium, The Pennsylvania State University, State College PA (4/9/09)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

124. "But Is It Science?: The Philosophical Question in the Creation/Evolution Controversy."  
Darwin Day Presentation, University of Dayton, Dayton OH (3/19/09)
123. "Bottom Up: Investigating the Evolution of Intelligent Behavior using Digital Organisms."  
Distinguished Speakers in Cognitive Science colloquium. Michigan State University, East Lansing MI (3/16/09)
122. "Bottom Up: Investigating the Evolution of Intelligent Behavior using Digital Organisms."  
Biology department colloquium. Rice University, Houston TX (3/9/09)
121. "Design by Darwin: How Digital Evolution Is Extending the Darwinian Revolution."  
Cedar Crest College, Allentown PA (2/7/09)
120. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." Biology Dept. Colloquium. Cornell College, Mt Vernon, Iowa (2/6/09)
119. "But Is It Science?: The Philosophical Question in the Creation/Evolution Controversy."  
Darwin Day talk. Cornell College, Mt Vernon, Iowa (2/5/09)
118. "This is Not a Simulation: Experimental Evolution with Digital Organisms."  
Duke University, Durham NC (1/19/09)
117. "Learning Evolution and the Nature of Science using Digital Organisms." Frontiers in Science Workshop, Michigan State University (9/27/08)
116. "Defending and Advancing Evolution Education: Flunking ID Creationism and Exploring Evolutionary Computation." Science Communicators of North Carolina (SCONC), Durham NC (6/11/08)
115. "Avida-ED Digital Evolution." BioQUEST / NESCent *SELECTION Workshop: Tools for Teaching Evolution* (5/29/08)
114. "Learning about Evolution and the Nature of Science using Digital Organisms." National Evolutionary Synthesis Center, Duke University (4/4/08)
113. "Judgment Day: Intelligent Design on Trial." National Evolutionary Synthesis Center, Duke University (3/28/08)
112. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." EEBB Colloquium, Michigan State University (9/5/07)
111. "A new LENS tool: Learning Evolution and the Nature of Science using Avida-ED Digital Evolution Software." Zoology Dept. Oxford University (7/20/07)
110. "The Ground Rules of Science: Why the Judge Ruled Intelligent Design Creationism Out of Court." University of Minnesota, Duluth (3/22/07)
109. "This is Not a Simulation: Experimental Evolution with Digital Organisms." Biology Colloquium, Binghamton University (2/23/07)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS PAPERS (CONTINUED)**

108. "The Ground Rules of Science: Why the Judge Ruled Intelligent Design Creationism Out of Court." University-wide talk. Binghamton University (2/22/07)
107. "A Tower Built on Sand: How Intelligent Design Creationism Collapsed in Dover." University Colloquium. Central Michigan University (2/1/07)
106. "Legal Issues in the *Kitzmilller* Creationism Case." Philosophy of Law class. Central Michigan University (2/1/07)
105. "Organs of Extreme Perfection: The Design Argument meets Evolution, Then and Now." Hope College (1/26/07)
104. "This is Not a Simulation: Experimental Evolution with Digital Organisms." Biology Colloquium. University of California, San Diego. (11/15/06)
103. "The Ground Rules of Science: Why the Judge Ruled Intelligent Design Creationism Out of Court." Provost's Convocation / Helen Edison Lecture. University of California, San Diego. (11/14/06)
102. "Learning Evolution and the Nature of Science using Digital Organisms." Biology Colloquium. Grinnell College, Grinnell. (11/3/06)
101. "The Ground Rules of Science: Why the Judge Ruled Intelligent Design Creationism Out of Court." Ohio Wesleyan Sagan National Colloquium. Ohio Wesleyan University, Delaware OH. (9/7/06)
100. "Learning Evolution and the Nature of Science using Digital Organisms." Biology Colloquium. Ohio Wesleyan University, Delaware OH. (9/7/06)
99. Panel Speaker. Keeping Science and Religion Separate in the Nation's Classrooms: The Vigil after Dover. Florida State University. (5/17/06)
98. "Organs of Extreme Perfection: The Design Argument meets Evolution, Then and Now." Silverstein Lecture. Northwestern University Medical School (4/11/06)
97. "Built on Sand: The Collapse of the Intelligent Design Creationist Tower." Darwin Day lecture. Univ. of Illinois, Urbana-Champaign (2/21/06)
96. "Models, Simulations, Instantiations and Evidence: The Case of Digital Evolution." History & Philosophy of Science Dept., Univ. of Pittsburgh, Pittsburgh PA. (2/10/06)
95. "Organs of Extreme Perfection: The Design Argument meets Evolution, Then and Now." Comstock Speakership. Minnesota State University Moorhead. Minnesota. (11/3/05)
94. "Teaching Evolution and the Nature of Science." Biology dept. brown-bag. Minnesota State University Moorhead. Minnesota. (11/3/05)
93. "Built on Sand: The Collapsing Creationist Tower." National Institutes of Health Washington DC. (7/13/05)
92. "Models, Simulations, Instantiations and Evidence: The Case of Digital Evolution." Kansas State University Philosophy Dept. Colloquium " (3/18/05)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

91. "Built on Sand: The Collapsing Creationist Tower." Kansas State University campus-wide lecture (3/17/05)
90. "Modeling the Evolution of Complexity with Digital Organisms." Kellogg Biological Station colloquium. (9/24/04)
89. "Teaching Evolution and the Nature of Science." In-service workshop for Gull Lake district school K-12 biology teachers. (8/30/04)
88. "Research Ethics: The Tuskegee Syphilis Case." DAPCEP Diversity Program, Michigan State University. (6/23/04)
87. "Getting A-Life: Modeling Evolution with Digital Organisms." Biology Dept. Colloquium. Southeastern Louisiana University. (4/22/04)
86. "Scientific Naturalism and 'the God Hypothesis'." Religious Studies Colloquium. Southeastern Louisiana University. (4/23/04)
85. "'Organs of Extreme Perfection': The Design Argument meets Evolution, Then and Now." Matheny Lecture. Southeastern Louisiana University. (4/22/04)
84. "The Collapsing Creationist Tower: More Evidence against Intelligent Design Creationism." BBB Biology Honor Society Keynote Address. The College of New Jersey, Ewing NJ. (3/5/04)
83. "Evolving Complex Systems with Digital Organisms: A Case Study in the Theory and Practice of Evolutionary Design." HPS Dept. Indiana University. Bloomington IN. (2/6/04)
82. "Observing the 'Impossible': Evolving Complex Systems." University of Akron Biology Dept. Colloquium, Akron OH. (1/29/04)
81. "Authorship and the Scientific Virtues." North Carolina State University, Research Ethics Program. Raleigh NC. (5/6/03)
80. "Theory and practice of evolutionary design." North Carolina State University, Sigma Xi, Raleigh NC. (5/5/03)
79. "Digitizing Darwin: Experimental Evolution with Artificial Lifeforms." Colby College, Biology Dept. Colby ME. (5/1/03)
78. "What are the real ethical challenges of genetic technology?" Colby College, Research Symposium Keynote Speaker, Colby ME. (4/30/03)
77. "Reducing 'Irreducible' Complexity." Juniata College, Juniata PA. (4/4/03)
76. "Evolutionary Design and 'Organs of Extreme Perfection'." Augustana College, Darwin Day talk, Rock Island IL. (2/11/03)



**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

75. "What Earth Historians Need to Know about ID Creationism."  
Distinguished Lecturer Series, Geology Dept., MSU. (1/30/03)
74. "Not (Just) in Kansas Anymore: Evolution & Neo-Creationism."  
University of Idaho, Computer Science Colloquium. (5/3/02)
73. "Intelligent Design Creationism and Its Critics."  
Northern Illinois University Sigma Xi Chapter (4/18/02)
72. "How to Reduce 'Irreducibly Complex' Biological Systems."  
Northern Illinois University Biology Dept. Colloquium (4/18/02)
71. "In the Light of The Modern Prometheus: Facing 'Frankenfood' and other Genetic Fears."  
Judith Weller Harvey Quaker Scholar Lecture  
Guilford College, Greensboro NC (4/4/02)
70. "How Can We Incorporate Research Ethics into Science Teaching?"  
Poynter Center, Indiana University (3/28/02)
69. "Strategies for Reaching Students who are Religiously Opposed to Evolution."  
Graduate Seminar on Teaching (Dr. Craig Nelson), Indiana University (3/27/02)
68. "Ethics, Environment, Eden & Evolution."  
Religious Studies Association, Indiana University (3/27/02)
67. "Darwin and Design: From Natural Theology to Applied Biology."  
Branigan Lecture. Institute for Advanced Study. Indiana University. (3/26/02)
66. "Genetic Screening Technology: Challenges for individuals, physicians and health insurers."  
Mayo Clinic, Rochester NY (1/17/02)
65. " In the Light of The Modern Prometheus: Facing 'Frankenfood' and other Genetic Fears."  
Univ. of Wisconsin -- Green Bay, Green Bay WI (12/11/01)
64. "Blunting the Intelligent Design Creationist Wedge."  
Univ. of South Carolina, Philosophy & Anthropology Dept., Columbia SC (11/2/01)
63. "Evolving Irreducibly Complex Features."  
University of Michigan - Dearborn (10/26/01)
62. "In the Light of The Modern Prometheus: Facing 'Frankenfood' and other Genetic Fears."  
Keynote address. *The Leading Edge: Issues in Technology and Society*  
Illinois State University, Normal IL (10/4/01)
61. "Blunting the Intelligent Design Creationist Wedge."  
Illinois State University Biological Sciences Dept., Normal IL (Oct. 4, 2001)
60. "Genetic Disease, Causation and Medical Insurance."  
University of North Dakota School of Medicine and Health Sciences (May 2, 2001)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

59. "The Virtuous Scientist Meets the Human Clone."  
North Dakota State University (May 2, 2001)
58. "Evolution and Neocreationism."  
University of North Dakota (May 1, 2001)
57. 'Labeling GM Foods and other Ethical Challenges of Emerging Biotechnologies.'  
University of North Carolina at Chapel Hill (April 19, 2001)
56. 'Authorship and the Virtuous Scientist.'  
Duke University (April 19, 2001)
55. "Labeling GM Foods and other Ethical Challenges of Emerging Biotechnologies."  
University of North Carolina at Chapel Hill (April 19, 2001)
54. 'Labeling GM Foods and other Ethical Challenges of Emerging Biotechnologies.'  
East Tennessee State University (April 5, 2001)
53. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas'  
Michigan Tech University (March 22, 2001)
52. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
West Virginia University (March 15, 2001)
51. 'The Neo-Creationist Wedge Movement.'  
West Virginia University Biology and Philosophy Department Colloquium (3/15/01)
50. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
Miami University - Middletown (March 2, 2001)
49. 'The Virtuous Scientist Meets the Human Clone.'  
Miami University - Oxford (March 1, 2001)
48. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
Lamar University. (Feb. 22, 2001)
47. 'Labeling GM Foods and other Ethical Challenges of Emerging Biotechnologies.'  
University of Dayton. (Feb. 9, 2001)
46. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
University of Dayton. (Feb. 8, 2001)
45. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
Ohio State University – Newark. (Jan. 25, 2001)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

44. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
University of Nebraska - Lincoln. (Jan. 18, 2001)
43. 'Ethical Challenges of Emerging Biotechnologies'.  
Merck Research Laboratories, Philadelphia PA (Dec. 15, 2000)
42. 'Blunting 'the Wedge': Responses to Neocreationist Arguments.'  
California Institute of Technology Skeptics Lectures (Dec. 10, 2000)
41. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.' University of Michigan -Dearborn (Dec. 8, 2000)
40. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
University of Northern Iowa (Oct 12, 2000)
39. 'Evolution & Neocreationism.'  
Roche Research Sigma Xi chapter. (Oct. 11, 2000)
38. 'Evolution & Neocreationism.'  
Whitman College Colloquium (Oct. 5, 2000)
37. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.'  
The Norman J. Field Lecture in Science, Rutgers University (Sept. 28, 2000)
36. 'Labeling GM Foods and other Ethical Challenges of Emerging Biotechnologies.'  
Notre Dame University / St. Mary's College (Sept. 22, 2000)
35. 'Should Evolution Be Taught in the Public Schools?: What Dorothy Learned when the Creationist Whirlwind Hit Kansas.' Notre Dame University / St. Mary's College (Sept. 21, 2000)
34. 'Labeling GM Foods and other Ethical Challenges of Emerging Biotechnologies.'  
Christopher Newport University (Sept. 15, 2000)
33. 'Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas.'  
University of Wisconsin, Marshfield (June 20, 2000)
32. 'Labeling GM Foods and other Ethical Challenges of Emerging Biotechnologies.'  
Uniroyal Chemical Sigma Xi chapter. (June 9, 2000)
31. 'Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas.'  
Virginia Commonwealth University Biology Dept. Darwin Day (Apr. 21, 2000)
30. 'Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas.'  
University of Montevallo (March 21, 2000)
29. 'Explanation, Unification & Causation.'  
Philosophy Dept., The College of New Jersey (Feb. 17, 2000)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

28. 'Can Darwinian Mechanisms Make Novel Discoveries?: Learning from Evolving Neural Networks.'  
Lyman Briggs School, Michigan State University (Jan. 20 - 21, 2000)
27. 'Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas.'  
Bethany College Interterm Speaker Program. (Jan. 13 - 15, 2000)
26. 'Should Creationism be Taught in the Public Schools?'  
Arizona State Univ. Philosophy Dept. and Biology/Society Program (Nov. 19, 1999)
25. 'Lions and Tigers and APES, Oh My!: Creationism vs. Evolution in Kansas.'  
Texas Tech University Honors College Point of View Series (Oct. 29, 1999)24. 'Evolving Intelligence in a Computer.'  
Texas Tech University Philosophy Dept. (Oct. 28, 1999)
23. 'The Importance of Philosophy of Science for Scientists.'  
Biology Club, Washburn University, Topeka, Kansas (Oct. 22, 1999)
22. 'Creationism's Tower of Babel.'  
Washburn University Campus-wide Lecture, Topeka, Kansas (Oct. 22, 1999)
21. 'What is a Genetic Disease?'  
Texas Tech Medical Center & Thomason Hospital (Mar. 16, 1999)
20. 'Theistic Science?: On Testing the Creationist Hypothesis.'  
Southern Methodist University Philosophy Department Colloquium (May 1, 1998)
19. 'Pre-Existing Conditions: Disease Genes, Causation & Future of Medical Insurance.'  
Georgia Tech. Philosophy Department Colloquium (Jan. 22, 1998)
18. 'The Prospects for a Theistic Science.'  
Texas Tech. Philosophy Department Colloquium (Nov. 20, 1997)
17. 'What Biologists Need to Know about the New Creationists.'  
Univ. of Washington Botany, Zoology and Philosophy Departments Joint Colloquium (Oct. 20, 1997)
16. 'Disease Genes, Causation & Medical Insurance.'  
Institute for Medical Humanities, UT Medical Branch (Oct. 14, 1997)
15. 'Unification and the Explanatory Virtues.'  
Philosophy Dept. Colloquy, UT Austin (April 25, 1997)
14. 'What Scientists Need to Know about the New Creationists.'  
Sigma Xi, The Scientific Research Society Round Table (Feb. 24, 1997)
13. 'What Biologists Need to Know about the New Creationists.'  
Univ. of Texas Zoology Department Colloquium (Jan. 27, 1997)

**UNIVERSITY COLLOQUIA & OTHER INVITED PAPERS (CONTINUED)**

12. 'Deus ex Machina: Evaluating Creationist Explanations in Biology & Linguistics.'  
University of Puget Sound, Thompson Hall Science and Mathematics Seminar Series &  
Philosophy Department (Nov. 14, 1996)
11. 'Deus ex Machina: Evaluating Creationist Explanations in Biology and Linguistics.'  
Rice University, Dept. of Philosophy Colloquium (October 16, 1995)
10. 'Epistemic and Ontic Theories of Explanation and Confirmation.'  
University of Florida, Department of Philosophy Colloquium (November 21, 1994)
9. 'Naturalism, Evidence and Creationism.'  
Ohio State University, Departments of Zoology and Philosophy (November 17, 1994)
8. 'Evidential Relevance: Towards a Causal Theory of Confirmation.'  
Kyoto Colloquium for Philosophy of Science, Kyoto JAPAN (July 17, 1994)
7. 'Evidential Relevance: Towards a Causal Theory of Confirmation.'  
Philosophy of Science Society of Japan & Nihon Univ. Phil. Dept. (July 16, 1994)
6. 'Evidence and Information.' Keio University, Tokyo JAPAN (July 15, 1994)
5. 'Evidence and Information.' Waseda University, Tokyo JAPAN (July 8, 1994)
4. 'Evidential Relevance.' Saitama University, Saitama JAPAN (July 6, 1994)
3. The Three Nails Lecture Series
  - 'Science and Values' (June 15, 1994)
  - 'Professional Ethics: The Kevorkian Case' (June 20, 1994)
  - 'Informed Consent & Controlled Experimentation' (June 22, 1994)
  - 'Evidential Relevance' (June 27, 1994)
  - 'Emeralds: Green & Grue' (June 29, 1994)
  - 'Confirmation, Information and Classification' (July 4, 1994)
  - 'Naturalism, Creationism & Evidence' (July 5, 1994)Obirin University, Tokyo JAPAN, Three Nails Lectureship (June 1994)
2. 'Naturalism & Evidence: A Reply to Johnson's Creationist Criticism of Evolution.'  
N.E.H. Summer Institute on Naturalism (July 11, 1993)
1. 'A Causal Theory of the Confirmation Relation.'  
Minnesota Phil. of Science Center & Univ. of Minnesota Phil. Dept. (May 21, 1992)

**COMMUNITY & IN-HOUSE INVITED TALKS**

131. "Avida-ED: Overview: Experimental Evolution in the Classroom" Active LENS Avida-ED Workshop, Michigan State University. East Lansing, MI. (8/7/19)
130. "Avida-ED: Overview: Experimental Evolution in the Classroom" Active LENS Avida-ED Workshop, University of Texas. Austin, TX. (6/12/19)
129. "Vocation, Virtue, and the Scholarly Community." Phi Beta Kappa Oration. Michigan State University, East Lansing, MI. (4/28/19)
128. "Avida-ED and Undergraduate Student Performance on the Conceptual Inventory of Natural Selection (CINS) Bacteria Versus Finch Questions." (Poster w/ Anna Bowling, Michael Wisner, Louise S. Mead, James J. Smith) 13th Annual Lyman Briggs Research Symposium. Michigan State University, East Lansing, MI. (4/23/19)
127. "Curiosity and the Moral Structure of Science." Scholarship in Undergraduate Teaching and Learning (SUTL) Fellows session. East Lansing, MI. (2/22/19)
126. "Avida-ED Digital Evolution Education Software." Darwin Discovery Day. MSU Museum. East Lansing, MI. (2/10/19)
125. "Avida-ED and Scientific Virtues Initiatives." BEACON Site Visit. National Science Foundation. (12/6/18)
124. "Becoming a Scrivener." MSU Graduate School Dissertation Writing Workshop. East Lansing, MI. (8/9/18)
123. "Doubt is the Key of Knowledge: A Dialogue about the Virtue of Skepticism in Science." (w/ Michael O'Rourke) BEACON Congress. East Lansing, MI. (8/9/18)
122. "Avida-ED: Overview: Experimental Evolution in the Classroom" Active LENS Avida-ED Workshop, Michigan State University. East Lansing, MI. (8/1/18)
121. "Avida-ED: Overview: Experimental Evolution in the Classroom " Active LENS Avida-ED Workshop, North Carolina A&T University. Greensboro, NC. (6/27/18)
120. "Virtue-Based Responsible Conduct of Research Toolbox Workshops: Pilot Test Results" (w Eric Berling, Chet McLeskey, Michael O'Rourke) BEACON Friday Seminar, Michigan State University. East Lansing MI. (5/11/18)
119. "Honesty and Framing in Science Communication" BEACON Congress, Michigan State University. East Lansing, MI. (8/4/17)
118. "Avida-ED: Overview" Active LENS Avida-ED Workshop, Michigan State University. East Lansing, MI. (7/27/17)
117. "Avida-ED: Overview" Active LENS Avida-ED Workshop, University of Washington, Seattle, WA. (6/21/17)
116. "Avida-ED and Scientific Virtues Initiatives." BEACON Site Visit. National Science Foundation. (12/14/16)

**COMMUNITY & IN-HOUSE INVITED TALKS (CONTINUED)**

115. "Introducing Avida-ED 3.0: Digital Evolution for Education, Now in the Browser." BEACON Congress. Michigan State University, East Lansing, MI. (8/12/16)
114. "Avida-ED: Overview" Active LENS Avida-ED Workshop, Lyman Briggs College, Michigan State University, East Lansing, MI. (6/9/16)
113. "Ninety-Nine Percent Perspiration: A Dialogue about the Virtue of Perseverance in Science." BEACON Center for the Study of Evolution in Action. East Lansing MI (3/18/16)
112. "Virtue in Science." Red Cedar Friends Meeting. Lansing MI (3/6/16)
111. "What are the Values of Exemplary Scientists?" HPS Student Association, Michigan State University, East Lansing, MI. (2/2/16)
110. "Transformation of Evolution Education." STEM Alliance, Michigan State University, East Lansing, MI. (12/17/15)
109. "Thrust Group 2: Evolution of Behavior and Intelligence." BEACON NSF Site Visit Poster, Michigan State University, East Lansing, MI. (12/17/15)
108. "Supporting Strong Science Standards: Practical Advice" BEACON Seminar, Michigan State University, East Lansing, MI. (9/18/15)
107. "Avida-ED: Overview and Under the Hood " LEVERS Avida-ED Workshop, Lyman Briggs College, Michigan State University, East Lansing, MI. (8/19/15)
106. "Avida-ED: Overview, Background and Demo" Active LENS Train-the-Trainers Workshop on Digital Evolution Educational Software", BEACON Center and Lyman Briggs College, Michigan State University, East Lansing, MI. (6/4/15)
105. "EvoSphere: Co-Evolution of Morphology and Behavior: Where do you want to go tomorrow?" (w Leigh Sheneman & Arend Hintze), BEACON Congress Poster Session. (8/17/15)
104. "Developing and Pilot Testing a Virtue-based Curriculum for Responsible Conduct of Research Training." (w/ Chet McLeskey, Eric Berling, Brian Robinson & Michael O'Rourke), BEACON Congress Poster Session. (8/17/15)
103. "When Creationists Attack: Responding with Scientific Integrity." BEACON RCR talk. (11/22/14)
102. "The Virtue of Honesty in Scientific Research." BEACON Seminar. (5/16/14)
101. "Scientific Virtue and Responsible Conduct of Research." Guest lecture in Rob LaDuca's MSU LB490E: S-STEM Scholars Junior Seminar. (4/11/14)
100. "Observing Digital Evolution with Avida-ED." Guest lecture in Brian O'Shea's LB490A seminar. (4/8/14)
99. "EvoSphere: A Next-Dimension Digital Evolution Platform." BEACON Seminar. (4/7/14)

**Community & In-House Invited Talks (continued)**

98. "Solving Problems with Evolutionary Computation." Guest lecture in MSU LB490E: Methods of computational science: Solving problems with computers. (4/8/14)
97. "An Evolutionary BEACON: Observing Darwin's Law in Action in Your Computer." Say It In 7. MSU Science Festival (4/12/13)
96. "The Scientific Virtues/Toolbox: RCR the BEACON Way." BEACON Seminar (3/29/13)
95. "Evolving Intelligence Research using Digital Evolution." Guest lecture in MSU CSE 848 Evolutionary Computation class (10/27/12)
94. "Digital Darwin: Observing Evolutionary Design in Computer Environments." Center for Inquiry. Grand Rapids, MI (9/12/12)
93. Barbara Haggerty Footprints of God panel – Pastoral Excellence Science & Religion Workshop (5/9/12)
92. "Role of the Public Intellectual" panel – MSU Workshop for Faculty on Leadership and Academic Life (2/28/12)
91. "Evolution in Action: Observing Evolutionary Processes in Real Time." MSU Emeriti Faculty Association (2/17/11)
90. "Simulation and Instantiation in Evolutionary Computation." Guest lecture in MSU CSE 848 Evolutionary Computation class (10/20/10)
89. "Navigating the Annual Review Process." Lyman Briggs College faculty (10/12/10)
88. "Methodological Naturalism and Science." Guest, Mark Navin's philosophy of science course, Oakland University. (2/4/10)
87. "Evolution and Religion." Guest lecture in MSU PHL 480 class (11/12/09)
86. "Watching Evolution in Action." 2 guest lectures in Okemos HS biology class (4/17/09)
85. "A Creationism Field Guild." Guest lecture in MSU Anthropology grad class (4/1/09)
84. "Using Evolutionary Computation to Investigate Evolutionary Processes: Philosophy, Research and Education." Guest lecture in MSU engineering graduate class (11/11/08)
83. "Navigating the Annual Review Process." Lyman Briggs College faculty (10/7/08)
82. "Expelled: How ID Creationism Flunked Out." Guest lecture in MSU Anthropology 840 graduate class (1/30/08)
81. "Observing the Evolution of Irreducible Complexity with Avida-ED." Guest lecture in MSU PHL 480 class (9/13/07)
80. "Developing Evolutionary Computation Educational Software for Instruction in Biology and Philosophy of Science at MSU." The Center For Research On <sup>[1]</sup>SEP College Science Teaching and Learning. (4/10/07)



**COMMUNITY & IN-HOUSE INVITED TALKS (CONTINUED)**

79. "Developing Evolutionary Computation Educational Software for Instruction in Biology and Philosophy of Science at MSU." Explorations in Instructional Technology Brownbag. (3/16/2007)
78. "Religion, Science and Philosophy of Science in the Courtroom: The Kitzmiller Creationism Case." MSU Honors College 50th Anniversary Colloquium. (2/24/2007)
77. "The Kitzmiller v Dover Trial." MSU Freethinkers Association. (10/26/2006)
76. "Intelligent Design Creationism in Michigan." Ecology, Evolutionary Biology and Behavior. (10/25/2006)
75. "Avida-ED." Guest lecture in Dan Steel's PHL 480 class (9/13/06)
74. "Building on Sand: How Intelligent Design Creationism Harms Both Science and Religion." Presbyterian Church of Okemos, Okemos MI. (9/10/06)
73. "Lessons from the Kitzmiller v. Dover Area School Board." Guest lecture in Norman Sauer's Anthropology graduate seminar, Michigan State Univ., East Lansing MI. (2/1/06)
72. "Intelligent Design: The Scientist's View." University Lutheran Church, East Lansing MI. (1/15/06)
71. "Built on Sand: The Collapsing Creationist Tower." Torch Club, East Lansing MI. (11/21/05)
70. "What is Intelligent Design and how might you address it in your ISB/ISP class?" Integrative Studies Faculty, MSU, East Lansing MI. (9/19/05)
69. "Built on Sand: The Collapsing Creationist Tower." Don Hansen Memorial Lecture - Freethought Association of Western Michigan. (5/25/05)
68. "Response to Ted Peters." Science & Religion Panel discussion. MSU (4/18/05)
67. "Organs of Extreme Perfection!: The Design Argument meets Evolution, Then and Now." MSU Anthropology Dept. Brown Bag talk. (4/7/05)
66. "Scientific Integrity and the Bush Administration." Science and Technology in Today's Politics panel discussion. (10/27/04)
65. "Teaching Evolution and the Nature of Science." In-service workshop for Gull Lake district school K-12 biology teachers. (8/30/04)
64. "Professional Ethics." Women in Engineering. MSU, East Lansing (8/4/04)
63. "Medical Research Ethics: Lessons from the Tuskegee Syphilis Study Case." DAPCEP. MSU, East Lansing (6/24/04)
62. "The Virtue of Scientific Objectivity." Responsible Conduct of Research Series. MSU, East Lansing (2/24/04)

**COMMUNITY & IN-HOUSE INVITED TALKS (CONTINUED)**

61. "From Texas to Michigan: Recent Creationist Attacks on Science Education."  
Darwin Day panel. MSU, East Lansing (2/13/04)
60. "What Anthropologists Need to Know about the New Creationism."  
Anthropology Department Brown Bag Seminar. MSU, East Lansing (1/28/04)
59. "Wet Artificial Life: Ethical Questions About Venter's Artificial Virus."  
Computer Science 891. MSU, East Lansing (11/17/03)
58. "Professional Ethics and Engineering."  
CSE 891: Digital Evolution and Biocomplexity (10/9/03)
57. "Human Cloning and Other Genetic Fears."  
Chemical Engineering Education 301. MSU, East Lansing (3/19/03)
56. "Genetic Engineers as Modern Prometheans."  
One Book, One Community. East Lansing (9/18/03)
55. "Aristotle on Learning, Virtue and Friendship: Charge to Initiates."  
Phi Beta Kappa Banquet, MSU (4/27/03)
54. "Intelligent Design Creationism and Its Critics."  
American Atheists National Conference, Chicago, IL (4/19/03)
53. "Human Cloning and Other Genetic Fears."  
CHE 491 course, MSU (3/19/03)
52. "Evolutionary Biology—A Light?: Houston Smith's Misunderstandings of Evolution."  
Science, Religion, and Society Committee public panel (3/16/03)
51. "Smith's understanding of traditional, modern, postmodern thought concerning the nature of the world."  
Science, Religion, and Society Committee public panel (2/23/03)
50. "What's Evolution Done for Me Recently?"  
Southeast Michigan MENSA Association (2/15/03)
49. "What Earth Historians Need to Know about the New Creationism."  
Geology Dept. Colloquium, MSU (1/30/03)
48. 'The Ethics Challenge'  
Chemical Engineering 301 course, MSU (11/21/02)
47. "What Dorothy Learned when the Creationist Whirlwind Hit Kansas."  
MSU Freethinkers Alliance (10/2/02)
46. "Facing Frankenfood and Other Genetic Fears."  
CHE 491 course (Profs. Daina Briedis & Mark Worden), MSU (4/16/02)
45. "On Teaching the Controversy: How should responsible educators deal with anti-evolutionism?"  
Phi Beta Kappa annual awards lecture, MSU (4/14/02)

**COMMUNITY & IN-HOUSE INVITED TALKS (CONTINUED)**

44. 'Qualitative Research and Scientific Objectivity.'  
Research Methods Series, MSU (2/28/02)
43. 'Scientific Objectivity and Conflicts of Interest.'  
Responsible Conduct of Research Series, MSU (2/26/02)
42. 'Kansas Redux?: Responding to the Michigan Neo-Creationism Legislation.'  
Freethought Association of Western Michigan, Grand Rapids Community College (10/10/01)
41. 'Kansas Redux?: Responding to the Michigan Neo-Creationism Legislation.'  
University Libraries Lecture Series, MSU (9/19/01)
40. 'Should Evolution be Taught in the Public Schools?: What Dorothy Learned When the Creationist Whirlwind Hit Kansas.'  
LBS Science & Society Lecture Series (4/4/01)
39. 'Scientific Objectivity and Conflicts of Interest.'  
MSU Responsible Conduct of Research Series (3/20/01)
38. 'Environmental Ethics and Biodiversity.'  
MSU Zoology Club (2/20/01)
37. 'What Biologists Need to Know about the Neocreationist Wedge Movement.'  
Ecology and Evolutionary Biology and Behavior Lecture Series, MSU (2/14/01)
36. 'Pre-Existing Conditions: Disease Genes, Causation & Future of Medical Insurance.'  
Center for Ethics and Humanities in the Life Sciences, Brown Bag Series (11/8/00)
35. 'Can Darwinian Mechanisms Make Novel Discoveries?: Learning from discoveries made by evolving neural networks.'  
Philosophy Department Colloquium, MSU (11/3/00)
34. 'Is Science Dogmatic?'  
TCNJ Science, Ethics & Technology series (2/14/00)
33. 'Tower of Babel' talk & book signing  
Micawber Books, Nassau St., Princeton, NJ (2/9/00)
32. 'Ethics and Creationism.'  
Princeton Ethical Humanist Fellowship – Princeton Theological Seminary (1/9/00)
31. 'On Teaching Evolution: Not in Kansas Anymore?'  
Bliss Hall Colloquium (Nov. 17, 1999)
30. 'Public and Private Justice in a Pluralistic Society: A Case Study.'  
TCNJ Athens to New York invited presentation (Oct. 27, 1999)
29. 'Tower of Babel' talk & book signing.  
Barnes & Nobel Bookstore, Topeka, KS (Oct. 22, 1999)
28. 'The Scopes Monkey Trial.'  
TCNJ panel discussion (Oct. 15, 1999) Covered by CNN Headline News

**COMMUNITY & IN-HOUSE INVITED TALKS (CONTINUED)**

26. 'The Ethical Basis of Vegetarianism.'  
Earth Day, UT Austin (April 22, 1999)
25. 'Advice for Pre-Medical Students.'  
Plan II Pre-Medical Society - UT Austin (Oct 14, 1998)
24. 'Science, Religion and Methodological Naturalism.'  
Dean's Scholars Lunch Talk, UT Austin (April 10, 1998)
23. 'The Roots of Environmental Ethics.'  
Zoology 352 Man & Environment class, UT Austin (March 27, 1998)
22. 'Philosophy of Science and the Creationism Controversy.'  
Zoology 310M Ecology, Evolution and Society class, UT Austin (March 24, 1998)
21. 'Can Science test the Supernatural?'  
University Skeptical Society, UT Austin (March 9, 1998)
20. 'Philosophy of Science and the Creationism Controversy.'  
Zoology 310M Ecology, Evolution and Society class, UT Austin (April 29, 1997)
19. 'A.I.D.S. and Professional Duties.'  
Microbiology 317 Biology of AIDS class, UT Austin (April 14, 1997)
18. 'A.I.D.S. and the Concept of Disease.'  
Microbiology 317 Biology of AIDS class, UT Austin (April 11, 1997)
17. 'The Roots of Environmental Ethics.'  
Zoology 352 Man & Environment class, UT Austin (March 20, 1997)
16. 'A.I.D.S. and Professional Duties.'  
Microbiology 317 Biology of AIDS class, UT Austin (Nov. 13, 1996)
15. 'A.I.D.S. and the Concept of Disease.'  
Microbiology 317 Biology of AIDS class, UT Austin (Nov. 11, 1996)
14. 'Learning Through Discussion.'  
UT New Faculty Seminar (August 21, 1996)
13. 'Being a Quaker Scientist.'  
Friends General Conference Gathering, McMaster Univ., Hamilton, Ontario  
Weeklong workshop on Quakerism & science (June 29 - July 6, 1996)
12. 'Scientific Creationism & Inference to the Best Explanation.'  
Friday Lunch Series, Philosophy Dept., UT Austin (March 29, 1996)
11. 'Study Abroad.'  
Friday Lunch Series, Philosophy Dept., UT Austin (February 16, 1996)
10. 'Ethics of Genetic Engineering.'  
Microbiology 226 class (Dr. Alice Reinartz), UT Austin (September 29, 1995)

**COMMUNITY & IN-HOUSE INVITED TALKS (CONTINUED)**

9. 'Euthanasia.'  
Educational Administration Ethics Class (Dr. Moore), UT Austin (April 1, 1995)
8. 'Democracy and Scientific Elitism.'  
Dean's Scholars' Program, UT Austin (March 7, 1995)
7. 'Is Controlling Population Growth a Moral Imperative?'  
Texas Union International Awareness & Student Issues Committees Forum on Population Growth. Panel Discussion and Debate (October 11, 1994)
6. 'The Evolution of Ethics.'  
Philosophy Dept. UT Austin, Friday Lunch "Ethics" Series (February 11, 1994)
5. 'Japanese Zen: Philosophy Without Words.'  
Friday Lunch "World Philosophy" Series, Philo. Dept. UT Austin (April 16, 1993)
4. 'The Ethics of Research with Human Subjects.'  
Friday Lunch "Philo. & the Disciplines" Series, Philo. Dept., UT Austin (April 10, 1992)
3. 'Do Scientific Models Tell Us Anything About Reality?'  
Dean's Scholars' Program, UT Austin (April 2, 1992)
2. 'A Sherlockian Introduction to Induction.'  
Honors Science Classes, Central Catholic High School, Pittsburgh PA (8/30/90)
1. 'Proofs & Evidences: What May We Ask of Science?'  
Honors Science Class, Central Catholic High School, Pittsburgh PA.  
Invited 2 part talk (Sept, 5 & 6, 1988)

**MEDIA INTERVIEWS/ARTICLES (TELEVISION, RADIO & PRINT)**

115. Waldman, Annie. “DeVos’ Code Words for Creationism Offshoot Raise Concerns about ‘Junk Science’.” *ProPublica*. (1/30/2017)
114. Baker, Monya. “Scientific Virtues” *Nature*. Vol. 532, p. 139 (4/7/2016)
113. Widener, Andrea. “Top Scientists Share Values” *Chemical & Engineering News*. Vol. 94, No. 8, p. 27 (2/22/2016)
112. Bastian, Hilda. “CRISPR, Priority and Credit: Do We Need to Edit Science’s DNA” *Absolutely Maybe: PLOS Blogs* (2/19/2016)
111. *ECN Magazine*. “What Values are Important to Scientists”  
<<http://www.ecnmag.com/news/2016/02/what-values-are-important-scientists>> (2/16/2016)
110. *Science Newsline*. “What Values are Important to Scientists”  
<<http://www.sciencenewsline.com/news/2016021511380019.html>> (2/15/2016)
109. *Science 2.0*. “What Makes a True Scientist”  
<[http://www.science20.com/news\\_articles/what\\_makes\\_a\\_true\\_scientist-165758](http://www.science20.com/news_articles/what_makes_a_true_scientist-165758)>  
(2/14/2016)
108. *Phys.Org*. “What Values are Important to Scientists” <<http://phys.org/news/2016-02-values-important-scientists.html>> (2/14/2016)
108. *MSU Today*. “What Values are Important to Scientists”  
<<http://msutoday.msu.edu/news/2016/what-values-are-important-to-scientists>> (2/14/2016)
107. Stern, Mark Joseph. “It’s Not Debatable: Michigan State University’s Perfect Response to a Creationist Conference on Campus” *Slate* (11/3/2014)
106. *MSU Today* “Teaching Evolution in Action” (10/30/2014)
105. *MSU Today* “Facts & Values: What Does It Take to be an Effective Scientist?” (8/27/2014)
104. *Qualitative Research Channel* interview (10/28/2010)
103. Matt Miller “Researchers at MSU study altruism” *Lansing State Journal*. (10/18/2010)
102. *National Science Foundation* “Digital organisms shed light on mystery of altruism” (10/15/2010)
101. *NepszabagzagOnline*. “Avida Lakoi” <[http://nol.hu/lap/hetvege/20101002-avida\\_lakoi](http://nol.hu/lap/hetvege/20101002-avida_lakoi)>  
(2 October, 2010)
100. Luran McKown. “BEACON Center publishes 1<sup>st</sup> report” *State News*. (9/28/2010)
99. *US News & World Report*. “New MSU Research Sheds Light on How We Become Altruistic” (22 September, 2010)
98. *Science Daily* “Research Sheds Light on Altruism” (22 September, 2010)
97. *New Scientist* Editorial “Digital evolution and the meaning of life” (4 August, 2010)

**MEDIA INTERVIEWS/ARTICLES (CONTINUED)**

96. Catherine Brahic “The Genesis Machine.” *New Scientist*. (4 August, 2010)
95. *SME Veda* (Slovakia) “Vývoj života smeruje k inteligencii. Na počítači” (8/6/10)
94. *Terra* (Brasil). “Seres virtuais que evoluem sozinhos desenvolvem memória” (8/5/10)
93. Tom Chivers “Computer-simulated life forms evolve intelligence” *Telegraph* (UK) (8/5/10)
92. Makul Sharma “A Very Simple Creation Story” *The Economic Times*. (5/4/10)
91. Nick Matzke “Pennock on Postmodernism in ID Creationism” *The Panda’s Thumb*. (3/14/10)
90. “BEACON: An NSF Science & Technology Center.” *Exposure* radio interview. (3/2/10)
89. “BEACON: An NSF Science & Technology Center.” *Michigan Radio*. (2/19/10)
88. Jeffrey Kurtz “Darwin's thought evolves into advances in tech” *Record-Journal*. (9/7/09)
87. Randia Green “Program Simulates Darwin’s Theory” *Independent Collegian*. (4/27/09)
86. *Science Blog* “College Science Requirements Keep US Ahead of World”. (2/27/09)
85. KVM. “Faculty Profile: Robert T. Pennock”. *Muses* (1/09)
84. *Radio In Vivo* interview; Ernie Hood, host. (7/2/08)  
<<http://www.ibiblio.org/wcom/podcast/mp3/mp3s/RIV07022008.mp3>>
83. Marianne Cramer - *Le monde de l'Intelligence* Magazine (6/27/08)
82. Lewis Beale of Miller-McClune Magazine (5/21/08) “Legislating Uncertainty: An Evolving Strategy” <<http://www.miller-mccune.com/article/405>>
81. *WKAR-TV* “After the Trial” (10/8/07)
80. *NOVA* Special “Judgment Day: Intelligent Design on Trial” (11/13/07)
79. Eartha Melzer. *Michigan Messenger* re: Senator Vitter’s earmark for Louisiana Family Forum to produce science education recommendations (10/8/07)
78. Jana Hollingsworth “Foe of intelligent design evolution theory to speak at UMD” *Duluth News-Tribune* (3/22/07)
77. Debbie Swartz “Speaker to discuss ‘intelligent design’ case” *Press & Sun-Bulletin* (2/22/07)
76. Matt Miller “Digital Darwinism: Computers at MSU take the lead in high-speed studies of evolution.” *Lansing State Journal* (11/26/06)
75. KPBS interview on *These Days* with Tom Fudge. (11/14/06)
74. Celeste Biever - *New Scientist* magazine re: ID in Michigan elections (10/13/06)
73. Derek Melot – *Lansing State Journal* re: MI Board of Ed science standards (10/13/06)

**Media Interviews/Articles (continued)**

72. Celeste Biever - *New Scientist* magazine re: ID claims of science (10/2/06)
71. Geoff Brumfiel - *Nature* magazine re: ID in Michigan elections (9/29/06)
70. Lesa Storms - *Big River Pioneer* re: pro-ID candidate Dick DeVos (9/22/06)
69. Christopher Nagy - *Livingston Press Argus* re: pro-ID candidate Dick DeVos (9/21/06)
68. Gordy Slack for his book on the Kitzmiller v. Dover trial (8/14/06)
67. WILL radio (NPR) Focus 580 interview David Inge (8/7/06)
66. Pat Hayes - *Red State Rabble* re: Dover trial and experimental evolution (5/22/06)
65. Diane Hirst - *Tallahassee Democrat* (5/15/06)
64. Elizabeth Culatta - *Science Magazine* (1/27/06)
63. Laurie Lebo - *York Daily Record* re Avida-ED (1/26/06)
62. Sid Perkins - *Science News Magazine* (1/17/06)
61. Tom Nugent - Profile for *The Earlhamite* (1/12/06)
60. Maggie Wittlin – *Seed* (1/11/06)
59. Robert King – *Indianapolis Star* (10/21/05)
58. Shankar Vedantam – *Washington Post* (10/21/05)
57. Marie Foreister – *Valeurs Actuelles* (France) (10/12/05)
56. Chris Mooney - *The New Republic* re: McLean case compared to Kitzmiller case (10/3/05)
55. Frank Bentayou - *The Plain Dealer* re: Cardinal Schoenborn's NYT op-ed (8/9/05)
54. Kim Kozlowski, *The Detroit News* re: ID in Michigan (7/11/05)
53. Trevor Stokes, *The Scientist* re: Smithsonian controversy (6/16/05)
52. Tom Gaten, *Boston Globe* editor (5/25/05)
51. *WGVU Public Radio* (Grand Rapids, MI) interview w/ David Moore (5/24/05)
50. *The History Channel* interview on the Scopes Trial (5/11/05)
49. Interview w/ Peter Dizikes, *Salon* writer about Kansas creationism case (5/10/05)
48. *KSRN Radio* interview w/ Richard Baker on intelligent design creationism (3/18/05)
47. *KMAN Radio* interview w/ Cathy Dawes on creationism in Kansas (3/17/05)
46. Michael Powell interview for *Washington Post* on intelligent design creationism (3/11/05)
45. Geoff Brumfiel *Nature* magazine on intelligent design creationism (2/24/05)



**Media Interviews/Articles (continued)**

44. Larry Cosentino *City Pulse* article “This is not a simulation” on my research on evolutionary computation (2/8/05)
43. Berl Schwartz *City Pulse Radio* call-in show on intelligent design (1/22/05)
42. Rob South *WKAR radio* (Morning Edition) on artificial life (11/21/05)
41. *State News* on evolutionary computation (11/21/05)
40. *Why Bother Films* on evolution and the nature of science (11/12/04)
39. Carl Zimmer re: experimental evolution (10/27/04) “Testing Darwin” *Discover* (26:2, 28-35, Feb. 2005)
38. Robert Boyd of Knight Ridder re: experimental evolution (9/18/04)
37. Interview w/ *UPI* reporter Stephen Mitchell about ID creationism (9/8/04)
36. Interview w/ *Folha de Sao Paulo* (Brazil) reporter about ID creationism (9/8/04)
35. Interview w/ Evan Ratliff *Wired* magazine about ID creationism (7/7/04)
34. “U’ receives grant to develop digital evolution teaching tool” *MSU News Bulletin* (6/17/04, p. 1)
33. Interview w/ *Education Week* about Avida-ED digital evolution (6/17/04)
32. “Prof uses grant to develop an evolution teaching tool” *The Towne Courier* (6/6/04, p. 17)
31. Interview about intelligent design creationism with KSLU public radio. (4/04)
30. Interview about Michigan antievolution with the *State News*. (11/03)
29. Interview about digital evolution with Karol Jalochocki, *Scientific American (Polish edition)*. (8/03)
28. Interview about intelligent design creationism with Steven Mitchell, *UPI*. (8/03)
27. Interview about intelligent design creationism with *The American Prospect*. (11/02)
26. Interview about intelligent design creationism with *Harvard Political Review*. (4/02)
25. Interview about the Ohio Board of Education intelligent design case with *U.S. News and World Report*. (3/02. Article appeared 7/29/02.)
24. Interview about the intelligent design creationists with *Chronicle of Higher Education*. (11/27/01)
23. Interview about the Michigan anti-evolution legislation with David Moore of *WGVU Radio*, Grand Rapids, MI. (10/10/01)
22. Interview about genetically modified foodstuff with Charlie Schlenker, *WGLT Public Radio*, Normal, IL. (9/28/01)

**Media Interviews/Articles (continued)**

21. Interview about the Michigan anti-evolution legislation for Lansing State Journal. (9/01)
20. Interview about the intelligent design creationists with Bill Maddex for the *Chicago Reader*. (6/17/01)
19. Press conference about creationist attacks on science education held at American Geophysical Union conference, Boston, MA. (5/30/01)
18. Interview about *Tower of Babel* for Erik Tunstad's science program "Verdt å vite" on NRK radio Norway <<http://www.nrk.no>> (2/16/01)
17. Interview about the intelligent design creationist movement's arguments with Robert Wright for MSNBC *Slate* article, "The 'new' creationism" (April 16, 2001)
16. Interview with James Glanz for *New York Times* article on the intelligent design movement. (March, 2001)
15. Interview about *Tower of Babel* with Cathy Grimes for *Walla-Walla Union Bulletin* article. (Oct 5, 2000)
14. Interview with Molly McVoy for *The Observer*, Notre Dame, IN. "Lecture debates teaching creationism, evolution in school" (Sept 22, 2000, pp. 1, 4)
13. Jerry Woolpy, "Creation Controversy: Professor Pennock to discuss issue" *Lakeland Times*. (June 21, 2000, pp. 21, 29)
12. Interview about creationism and state reviews of science requirements with Craig Savoye for "Whose 'science'?" *Christian Science Monitor*. (Feb. 8, 2000, p. 11, 16)
11. Interview with Nick Manetto for article "TCNJ professor takes issue with new creationism." *The Times*, Trenton, NJ. (Feb. 7, 2000, p. A3)
10. "Author to discuss 'Evidence against New Creationism.'" *Princeton Packet*, Princeton NJ. (Feb. 4, 2000)
9. Interview about Kansas Board of Education decision aftermath with Dan Magan for *Curriculum Administrator Magazine*. (1/2000)
8. Interviews at National Press Club Author's Night. Washington, DC. (Nov. 18, 1999)
7. Interview with Ravindra Yande for CNN Headline News New Jersey following a panel discussion (that included actor Leslie Nielson) about the Scopes trial held at The College of New Jersey. (Oct. 15, 1999)
6. Interview about evolution education for *News Source 49* TV program in Topeka, Kansas. (Broadcast 10/21/99)
5. Interview w/ Kara Altenbaumer for *Avalanche-Journal* newspaper, Lubbock, TX. (Oct. 30, 1999)
4. Jim McLean "Author criticizes creationists' strategy." *The Topeka Capital-Journal*, Topeka, Kansas. (Oct. 22, 1999, p. 1, 14-A)

**Media Interviews/Articles (continued)**

3. Interview with Marjorie Coeyman on Kansas Board of Education's removal of evolution from science standards for *Christian Science Monitor* article. (7/99)
2. Interview on genetic technologies and ethics for KLRU-TV program *Austin at Issue*. (June 25, 1998)
1. Interview on cloning and ethics for *KVRX radio* talk show. (Sept. 17, 1997)

**UNIVERSITY SERVICE:**

- MSU Alumni Distinguished Scholarship Selection Committee. 2019.
- MSU University Committee on Faculty Tenure. 2018 - present.
- LBC Educational Policy Committee. 2015 - 2019.
- Chair, HPS Graduate Program Proposal Committee 2010 - 2018.
- EEBB Executive Committee. 2013 - 2018.
- CAL Interdisciplinary Center Director Search Committee 2016 - 2017.
- Lyman Briggs Graduate SUTL Fellows Proposal Committee 2016.
- LBC Dean's RPT Committee 2016.
- Chair, Westfall RPT Committee. 2015.
- University Curriculum Committee. 2011 - 2014.
- LBC classroom renovations planning committee. 2013 – 2014.
- HARP Proposal Review Committee. 2012 - 2014.
- HPS Scheduling Committee 2010 - 2014.
- Chair, MSU Museum Director Search Committee. 2013 - 2014.
- MSU Museum History Curator Search Committee. 2013.
- Provost's Interdisciplinary Research Committee. 2013.
- LBC HPS Fixed Term search committee. 2013.
- Chair, LB Environmental Philosophy search committee. 2012 – 2013.
- LB Sociology of Medicine search committee. 2011-2012.
- LBC Dean's RPT Committee 2011.
- BEACON Diversity Director search committee. Fall 2010.
- BEACON Education Director search committee. Fall 2010.
- BEACON Managing Director search committee. Summer 2010.
- LBC Ad-hoc committee on Reappointment, Promotion and Tenure Procedures, 2010.
- LBC Philosophy of Medicine search committee, chair. Fall 2008 – Spring 2009, Fall 2009 – Spring 2010.
- LBS Subcommittee on Reappointment, Promotion and Tenure Procedures, 2007.
- Center for Ethics and Humanities in the Life Sciences (CEHLS) Faculty Liaison for LBS, 2005 to present.
- University Committee on College Reorganization (Esquith Committee), 2004.
- Provost's Liberal Arts Focus Group, 11/03.
- Ad Hoc Committee on Faculty Evaluation Procedures. 2003-05.

**University Service (cont.):**

- Philosophy of Science Curriculum Committee, Fall 2003.
- Science, Technology, Environment and Public Policy Specialization (STEPPS) proposal committee (2003); Core committee (2003-06)
- Briggs Advisory Committee, 2003-07, 2010. Secretary 2003. Chair 2004-05, 2006-07.
- Faculty Council, 2002
- Faculty Advisor, MSU Center for Inquiry (Previously named MSU Freethinkers Alliance), 2002 - present
- Academic Council, 2002
- Chair, LBS Awards Committee, 2001- 2003.
- Alumni Distinguished Scholar lunches, 2001, 2002, 2003
- LBS Biology search committee, Fall 2005 – Spring 2006
- LBS STEPPS Environmental Philosophy search committee, Co-chair. Spring 2004 – Spring 2005. Chair 2005-06. Chair 2006-07.
- LBS STS Sociology of Science search committee, Fall 2003 – Spring 2004
- LBS STS search ad-hoc committee, Fall 2003 – Spring 2003, Spring 2004
- LBS Chemistry search ad-hoc committee, Fall 2002 – Spring 2003
- LBS Math search ad-hoc committee, Fall 2001
- LBS Outing leader to Abrahms Planetarium (10/10/01)
- Organized *Evolve Along with Your Professors* student/faculty discussions of the NOVA Evolution series, Sept. 24-27, 2001.
- LBS Speaker Series Committee, Chair 2001 – 02; Member 2003
- McPherson Professor lecture series committee, MSU, 2001 – 2005
- Medicine and Philosophy Focus Committee, Philosophy Dept., MSU, 2001
- Philosophy of Science Focus Committee, Philosophy Dept., MSU, 2001
- Ethics consultant for Med School Interactive Exercise Groups, MSU, 2001
- LBS Class Book panel discussion, Fall 2000, Spring 2001
- CNS Alumni Fall Reception, 2000
- Educational Policies Committee, LBS, MSU, 2000 - 2002
- Reviewer for internal MSU grant proposals, 2000, 2001, 2002, 2003.
- New student orientation Dean's Dinner. 2000, 2001.
- Best of Both Worlds speaker. 2000, 2001, 2002, 2003, 2004
- STS Committee, LBS, MSU, 2000 - present. (Convener, 2001)
- MULTI project, MSU, 2000.

**University Service (cont.):**

- Faculty Advisor, Student Pugwash USA, Univ. of Texas. 1998 - 1999.
- Texas State Science and Engineering Fair Judge, 1998 & 1999.
- UT Faculty Fellow, 1997 - 1999
- UT's Urban Issues Program, 1996 - 1998
- *Ex Nihilo* Undergraduate Philosophy Journal Reviewer, 1996
- UT Preview Program, 1996
- Liberal Arts Career Symposium, 1995
- Machette Essay Prize Selection Committee, 1995
- Hibbs Scholarship Selection Committee, 1995
- Center for Teaching Effectiveness conferences speaker, 1996, 1997
- Faculty Grievance Committee Pool, UT Austin, 1994-95
- Colloquy Committee, Philosophy Dept., UT Austin, 1993-94, 1995-97
- Faculty Mentor, UT Honors Colloquium, 1992, 1995, 1997
- Undergraduate Studies Committee, Philosophy Dept., UT Austin, 1991-95
- Honors Advisor, Philosophy Dept., UT Austin, 1991-93

**PROFESSIONAL SERVICE:**

- Refereed articles, books and grant proposals for:
  - Acta Biotheoretica*
  - Addison Wesley Publishers*
  - American Association for the Advancement of Science*
  - American Council of Learned Societies*
  - Artificial Life*
  - Astrobiology*
  - BEACON Center for Study of Evolution in Action*
  - Behavioral & Brain Sciences*
  - Biology*
  - Biology & Philosophy*
  - Bioscience*
  - Blackwell Publishing*
  - British Journal for the Philosophy of Science*
  - Cambridge University Press*
  - Cornell University Press*
  - Critical Research on Religion*
  - Evolution*
  - Evolution: Education and Outreach*
  - Guggenheim Foundation*

- Refereed articles, books and grant proposals for (cont.):
  - Harvard University Press*
  - Heredity*
  - History and Philosophy of the Life Sciences*
  - IEEE Transactions on Evolutionary Computation*
  - International Studies in the Philosophy of Science*
  - The Johns Hopkins University Press*
  - Journal of Philosophy, Science & Law*
  - Journal of the Royal Society Interface*
  - Kansas State University*
  - Life*
  - McGraw Hill Publishers*
  - MIT Press*
  - Michigan State University Foundation*
  - MSU Humanities and Arts Research Program (HARP)*
  - MSU Press*
  - National Science Foundation*
  - Oxford University Press*
  - Perspectives on Science*
  - Philosophy and Technology*
  - Philosophy of Science*
  - Pickering & Chatto Publishers*
  - Polity Books*
  - PLOS One*
  - Quarterly Review of Biology*
  - Religion*
  - Religions*
  - Reports of the National Center for Science Education*
  - Research Grants Council of Hong Kong*
  - Routledge Press*
  - The Royal Society*
  - Rutgers University Press*
  - Science*
  - Science & Education*
  - Science & Engineering Ethics*
  - Science Education*
  - Sinauer Associates / W.H. Freeman Press*
  - Society for the Study of Evolution*
  - Spontaneous Generations*
  - St. Martin's Press*
  - Studies in History and Philosophy of Science Part A*
  - Studies in History and Philosophy of Science Part C: Biological and Biomedical Sciences*
  - Synthese*
  - Templeton Foundation*
  - Theology & Science*
  - Transactions on Evolutionary Computation*

- Refereed articles, books and grant proposals for (cont.):
  - Wadsworth Publishing*
  - Wiley-Blackwell Publishers*
  - Yale University Press*
  - Zygon*
- Member-at-Large, American Association for the Advancement of Science (AAAS) History and Philosophy of Science (HPS) Section Committee. Elected 2018 for 4-year term (Feb. 18, 2019 - Feb. 19, 2023)
- American Philosophical Association Representative to American Association for the Advancement of Science (AAAS) History and Philosophy of Science (HPS) Section Committee. (1<sup>st</sup> and 2<sup>nd</sup> terms 2012-2017) (3<sup>rd</sup> term 2017-2020).
- Chair, Society for the Study of Evolution Education Committee Outreach Grants Program (2013 – present)
- Advisory Board, EvoS Consortium. 2009 - present
- Scientific Advisory Board, Evolution Institute. 2011 – present
- Education Committee - Society for the Study of Evolution (2000 - present). Chair - July 2005 to 2010.
- Phi Beta Kappa, MSU chapter. Vice President (2002 – 03), President (2003 – 04), Secretary (2004 - 07), Nomination committee (2004-present).
- Organizer, *Evolution, Here and Now* exhibit for Society for the Study of Evolution booth at the USA Science & Engineering Festival, held April 6-8, 2018. Washington DC.
- International Society for Artificial Life (ISAL) Award Committee - 2018
- Organizer, *BEACON* exhibit for MSU Museum Darwin Discovery Day, Feb. 13, 2011; Feb. 12, 2012; Feb 10, 2013, Feb. 9, 2014, Feb 12, 2017, Feb 11, 2018. East Lansing MI.
- Organizer, *Evolution, Here and Now* exhibit for Society for the Study of Evolution booth at the USA Science & Engineering Festival, held April 15-17, 2016. Washington DC.
- Program Committee. Artificial Life XV conference. 2015 - 2016.
- Co-Organizer (w Jim Smith & Louise Mead). *1<sup>st</sup> Active LENS Train-the-trainers Professional Development Workshop*. Michigan State University. June 4-6, 2014.
- Co-Organizer (w Louise Mead). *Assessing Undergraduate Student Understanding*. SSE Education Symposium. Evolution 2014 conference. June 22, 2014.
- Electorate Nominating Committee. American Association for the Advancement of Science (AAAS) History and Philosophy of Science (HPS) Section Committee. 2015.
- Program Committee. Artificial Life 14 conference. 2013 - 2014.
- Organizer, *Evolution, Here and Now* exhibit for Society for the Study of Evolution booth at the USA Science & Engineering Festival, held April 25-27, 2014. Washington DC.



**PROFESSIONAL SERVICE (CONT.):**

- Participant, “Creating a Research Agenda for the Ecological Implications of Synthetic Biology” *The Wilson Center* policy workshop. January 17, 2014, Univ. of California-Berkeley, CA.
- Planning Committee, *Life Discovery - Doing Science* conference. 2013 - 2014
- Founder & Board member, Michigan Citizens for Science (MCFS) (2001 – present), President (2005 – 2008)
- Organizing Committee; Publicity and Proceedings Chair. Artificial Life XIII: 13th International Conference on the Simulation and Synthesis of Living Systems, held July 19-22, 2012. East Lansing MI.
- Organizer, *Evolution, Here and Now* exhibit for Society for the Study of Evolution booth at the USA Science & Engineering Festival, held April 26-29, 2012. Washington DC.
- Organizer, *Evolution, Here and Now* exhibit for Society for the Study of Evolution booth at the USA Science & Engineering Festival, held Oct 22-23, 2010. Washington DC.
- Co-Organizer (w/ Tiffany Lohwater), *Communicating Science* symposium, Evolution 2010 meeting, June 26, 2010. Portland OR.
- Co-Organizer (w/ Jon Miller), *Science & Liberal Education: C. P. Snow and the Two Cultures @ 50* conference. May 28-30, 2009.
- Invited representative. *Invitational Summit on Undergraduate Biology: The Role of Disciplinary Societies*. Howard Hughes Medical Institute. Chevy Chase, MD. Nov. 19-21, 2008
- Invited participant. *National Evolutionary Synthesis Center Community Summit*. NESCent, Duke University. Durham NC. Sept. 10-12, 2008
- Invited representative. *AAAS/AIBS Biology Education Summit*. American Association for the Advancement of Science. Washington DC. May 15-16, 2008
- American Association for the Advancement of Science (AAAS) Committee on Public Understanding of Science and Technology (2007 - 2010)
- American Philosophical Association Committee on Public Philosophy (2006 - 2009)
- Advisory Board. *Museums & Social Issues*. Museums and Public Understanding of Evolution issue (2006)
- Organizer “Lessons from the Kitzmiller Trial” *Education Symposium & Public Outreach Lecture*. Evolution 2006. Society for the Study of Evolution. (2006)
- National Academy of Sciences – Authoring Committee for *Science, Evolution and Creationism: A View from the National Academy of Sciences* (2005-08)
- Testimony to Michigan State Board of Education regarding Michigan Science Curriculum Standards (10/10/2006)

**PROFESSIONAL SERVICE (CONT.):**

- Testimony to Michigan State Legislature Education Committee regarding House Bill 5251 (6/2006)
- Scientific Committee, Replication symposium for *ALife 2006*. (2005-06)
- Expert Witness. *Kitzmiller et al v. Dover Area School Board* (2005)
- Philosophy and Complexity program committee. Complexity, Science and Society conference, Liverpool, England. (2004-05)
- National Advisory Board. Americans United for Separation of Church and State. (2004-09)
- National Science Foundation grant review panel (2004)
- Testified at Texas State Board of Education hearings on science textbook adoptions (9/03).
- Editorial Committee; *Science & Education* journal (2002 – present)
- Frontiers in Science Workshop (for faculty from around Michigan) *Teaching Evolution and the Nature of Science* Michigan State Univ. (Nov. 15 – 16, 2002)
- Organizer & Leader (w/ Terry May) - Responsible Conduct of Research Workshop (for faculty and graduate students). *Should Scientists be Responsible for Impacts of Modern Technologies?* Michigan State Univ. (Oct. 16 – 17, 2001).
- Society for the Study of Evolution Creationism Task Force (2001 – 2006)
- National Center for Science Education Advisory Committee (2000 – 2010)
- Session organizer. “Bioethical Challenges on the Horizon.” Sigma Xi Forum — New Ethical Challenges in Science and Technology (Nov. 9 – 10, 2000).
- Teller for Southwest Region and Assembly of Delegates, Sigma Xi, The Scientific Research Society national meeting, 1998.
- Co-Director. N.S.F. Chautauqua Faculty Development Program Workshop. “Ethical Implications of the Human Genome Project (April 17 - 19, 1997).
- Conference sessions chaired at International Society for History, Philosophy and Social Studies of Biology (1997), Sigma Xi Forum (2000), Model Based Reasoning (2001), International Society for History, Philosophy and Social Studies of Biology (2005).
- Testified at Texas State Board of Education public hearings on Texas Essential Knowledge and Skills (TEKS) curriculum proposal (6/97).
- Reviewed ethics of proposed legislation (SB972) on authorization rules for mental health treatment decisions by incapacitated individuals for the Texas State Senate.
- Delegate to Sigma Xi, The Scientific Research Society national meetings 1995, 1996, 1997 & 1998
- Proposed and organized *The Lone Star Tour* joint colloquia program among University of Houston, Rice University, Texas A&M, and UT-Austin. 1995 - 1999

**Professional Service (cont.):**

- Organized *Texas Philosophers* meeting on philosophy of biological taxonomy (10/5/94)
- President, Univ. of Texas Chapter of Sigma Xi, The Scientific Research Society.  
1994 - 1999
- Editorial Assistant, *Philosophy of Science* (Phil. of Sci. Association Official Journal).  
January 1990 - May 1991

**MEMBERSHIP IN PROFESSIONAL SOCIETIES:**

- American Association for the Advancement of Science (1989 - present)
- American Philosophical Association (1990 - present)
- American Society for Bioethics and Humanities (2004-2006)
- Artificial Life Society (2000 - 2005, 2010, 2015 - present)
- Austrian Ludwig Wittgenstein Society (1997 - 1999)
- History of Science Society (1989 - 1994)
- International Society for Genetic and Evolutionary Computation (2001 - 2008)
- International Society for History, Philosophy & Social Studies of Biology
- Japan Philosophy of Science Society (1997 - 1999)
- Lone Star Historians of Science Society (1992 - 1999)
- National Center for Science Education (1995 - present)
- New York Academy of Sciences (2006 - present)
- Philosophy of Science Association (1990 - present)
- Sigma Xi, The Scientific Research Society (1987 - present)
- Society for the Study of Evolution (2000 - present)

**COURSES TAUGHT****UNDERGRADUATE (Lower Division)**

- Contemporary Moral Problems
- Introduction to Ethics
- Introduction to Philosophy
- Introduction to Science & Technology Studies
- Intro. to Scientific Reasoning (Critical thinking, Inductive & Deductive logic)
- Problem Solving (Probability, Statistics & Decision Theory)
- The Science of Science (Introductory Philosophy of Science)

**UNDERGRADUATE (Upper Division)**

- Topics in the History of Science: Scientific Revolutions
- Magic, Medicine & Science (Hist. & Phil. of Medicine & Physics)
- Facts & Values
- God & the Scientist (Honors Course)
- Science & the Modern World (Hist. & Phil. of Science)
- Environmental Ethics
- Medicine, Ethics & Society
- Philosophy of Biology
- Philosophy of Technology
- Scientific Hypotheses & Evidence
- Scientific Method
- Scientific Practice
- Advances in Biotechnology: Ethical & Social Implications (Senior seminar)
- Applied Darwinism (Senior seminar)
- Darwin (Senior seminar)
- Evolution & Creationism (Senior seminar)
- Evolution in Action (Senior seminar)
- Evolutionary Design (Senior seminar)
- Philosophy of Artificial Life (Senior seminar)
- Philosophy and Computing (Senior seminar)
- Science & Religion (Senior seminar)
- Scientific Virtues (Senior seminar)
- Words & Worlds—Classification, Values and the Language of Science (Honors Course)

**GRADUATE**

- Hume
- Evidence
- Philosophy of Biology
- Philosophy of Science
- Naturalism and Scientific Methodology

**GRADUATE STUDENT DISSERTATION & THESIS COMMITTEES**

- Eric Berling. Philosophy Ph.D., Advisor (2006-2019)
- Chet McLeskey. Philosophy Ph.D., (Committee member. (2012-2017)
- Cory Kohn. Zoology Ph.D. Dissertation, Committee member. (2012-present)
- Wendy Johnson. Teacher Education Ph.D. Dissertation, Committee member. (2013-2016)
- Leigh Sheneman. Computer Science Ph.D. Dissertation, Committee member. (2014-2016)
- Anuraag Pakanati. Computer Science Ph.D. Dissertation, Committee member. (2012-2015)
- Christian Orlic, Zoology Ph.D., Guidance committee member (2009-2015)
- Amy Lark, Division of Science & Math Education, Co-Advisor (2009-2014)
- Masoud Mirmoneni, Computer Science Ph.D, Committee member. (2010-2014)
- Anthony Givhan, Philosophy Ph.D. Dissertation, Committee member. Biology and Race. (2009-2013)
- David Bryson. Computer Science Ph.D. Dissertation, Committee member. (2006-2012)
- Zachary Blount, Microbiology & Molecular Genetics Ph.D. Dissertation, Committee member. E-coli experimental evolution (2005-2011)
- Alison Reiheld. Philosophy Ph.D. Dissertation, Committee member. Ethics and Memory. (2004-2010)
- Jeff Clune. Computer Science, PhD. Co-Advisor. Philosophy of Biology (2005-2010)
- Laura Grabowski, CSE Ph.D., Co-Advisor (2006-2009)
- Noel Boyle. Philosophy Ph.D. Dissertation, Committee member. Philosophy of Mind (2005-2008)
- Gabe Yedid, Zoology Ph.D. Dissertation, Committee member. Punctuated Equilibrium & Artificial Life. (2003-2007)
- Dusan Misevic Zoology Ph.D. Dissertation, Committee member. Artificial Life and the Evolution of Sex. (2003-06)
- Jason Matzke. Philosophy Ph.D. Dissertation, Committee member. Environmental ethics. (2001-03)
- Adam Chacksfield. Political Science Ph.D. Dissertation, Committee member. "Rethinking Government Regulation of Social Practices." (1998-99)
- John Tate. Philosophy Masters Report, Director. "The Species Concept and Biological Taxonomy." (1993)

**UNDERGRADUATE HONORS & I.S. THESES DIRECTED**

- Kevin Vogel "Evolution and Creationism" (2005)
- Hilary Wade, "Reproductive Cloning" (2003)
- Kristen Chapple, "Veterinary Medicine and Animal Rights" (2002)
- Phillip Hilary, "Ethical Problems with The Exotic And Wild Animal Trade." (2001)
- Lisa Dornbach. "Evaluation of the Methods of Consent for Treatment for Minors" (2000)
- Stacey Baker, "Ethics of FDA's Treatment IND and Parallel Track Clinical Trials" (1999)
- Zachery Richards, "Value and the Environment: Revealing Commonalties in the Plum Orchard Dilemma, Cumberland Island National Seashore." (1998)
- John Brehm, "Hospice and Physician-Assisted Suicide" (1997-98)
- Monica Briones, "Killing vs. Letting Die" (1997-98)
- Noreen M. Grygar. "Physician-Assisted Suicide and the Right to Die: Ethical, Legal, and Societal Considerations." (1997)
- Amy Dinn, "Impact Of The Human Genome On Genetic Privacy." (1997)
- Althea Chen, "Rebuilding The World Through Words: Readings And Conversations In Environmental Activism." Second reader (1997)
- Mitchell Fagelman, "Quality of Life Assessment" (1995)
- Debra Whitney, "Who Is Responsible for Genetically Engineered Evolution?" (1995)
- Nicole Larson, "An Ethical Discussion of Germ Line Gene Therapy." (1994-95)
- Misti Bartell, "Physician Assisted Suicide: Care When Cure Fails" (1994)
- Thomas George, "Ethical and Policy Ramification of DNA Fingerprinting" (1994)