

## Curriculum Vita

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### PRESENT POSITION

Associate Professor of Science Education  
Assumption College, Worcester, MA.

### EDUCATION

Ph.D.	(Science Education)	Western Michigan Univ.	2004
MAT	(Biology)	Colgate University	1999
	Degree with Distinction		
	<i>Certification for secondary school instruction in biology, NY</i>		
MBA	(Corporate Marketing)	Indiana University	1992
B.S.	(Molecular, Cellular & Developmental Biology)	University of Colorado	1989

### AREAS OF SPECIALIZATION

The role of using History and Philosophy of Science for the Teaching and Learning of Science

### TEACHING COMPETENCIES

Elementary and Secondary School Science Methods, Educational Psychology, History and Philosophy of Biology, History of Science Education, Introductory Genetics, Ecology & Evolution, Student Teaching Supervision.

### PERSONAL WORK

- Howe, E.M. (2014). A Paxton Year. Createspace Publications, 368 pp.

## PUBLICATIONS

- Rudge, D.W., Cassidy, D.P., Fulford, J.M. & Howe, E.M. (2014), "Changes Observed in Views of Nature of Science During a Historically Based Unit", *Science & Education* 23(9).
- Rudge, D. W. & Howe, E. M. (2011) Whither the VNOS? In Silva, C.C. and Prestes, M. E. B. (eds.) *1<sup>st</sup> Latin American Conference of the International History, Philosophy, and Science Teaching Group* (1<sup>st</sup> IHPST-LA). São Carlos: Universidade de São Paulo de São Carlos, in press.
- Howe, E.M. (2009), "Henry David Thoreau, Forest Succession, and the Nature of Science: A Method for Curriculum Development", *The American Biology Teacher* 71(7).
- Rudge, D.W. & Howe, E.M. (2009), "An Explicit and Reflective Approach to the Use of History to Promote Understanding of the Nature of Science", *Science & Education* 18(5).
- Howe, E.M. (October, 2007), "Addressing Nature of Science Core Tenets with the History of Science: An Example with Sickle-cell Anemia and Malaria", *The American Biology Teacher* 69(8).
- Howe, E.M. (2007), "Untangling Sickle-cell Anemia and the Teaching of Heterozygote Protection", *Science & Education* 16(1), pp. 1-19.
- Howe, E.M. & Rudge, D.W. (2005), "Recapitulating the History of Sickle-Cell Anemia Research: Improving Students' NOS Views Explicitly and Reflectively", *Science & Education* 14(3-5), pp 423-41.
- Rudge, D.W. & Howe, E.M. (October, 2004), "How to Use History of Science to Promote Student Understanding of Nature of Science", *The Science Teacher* 71(9), 51-57.
  - *Note: The preceding article was also selected for a special anthology on Science Teaching in Greece, published in 2008. I find this particularly amusing, as I can now say of my work that it is "all Greek to me."*

## CONFERENCE PROCEEDINGS

- Rudge, D. W., Cassidy, D.P., Fulford, J.M & Howe, E.M. "Assessing the Impact of the Explicit Reflective Approach to Teaching Nature of Science", *Ninth International Conference for the History of Science in Science Education: Enabling Scientific Understanding through Historical Instruments and Experiments in Formal and Non-Formal Learning Environments*, Flensburg University, Flensburg, Germany on July 30, 2012

- Rudge, D.W. & Howe, E.M. (2009). "A Study on Using the History of Industrial Melanism to Teach the Nature of Science", Proceedings of the 10th International History, Philosophy Science Teaching Group Meeting, University of Notre Dame, South Bend, Indiana.
- Howe, E.M. (2007). "Henry David Thoreau, Forest Succession, and the Nature of Science: A Method for Curriculum Development", (16pp.), Proceedings of the 9th International History, Philosophy Science Teaching Group Meeting, (Calgary, Alberta).
- Howe, E.M. (2006). "Using Explicit and Reflective Pedagogy and the History of Science to Affect Students' Nature of Science Conceptions: Results of an Empirical Study", (39pp.), Proceedings of the Annual Meeting of the National Association for Research in Science Teaching, San Francisco, CA.
- Howe, E.M. (2005). "Untangling Sickle-cell Anemia and the Teaching of Heterozygote Protection", (25pp.), Proceedings of the 8th International History, Philosophy Science Teaching Group Meeting, (Leeds, England).
- Howe, E.M. (2003, August). "Recapitulating the history of sickle-cell anemia research: Improving students' NOS views explicitly and reflectively", (21 pp.), In D. Metz (ed.) Proceedings of the 7th International History, Philosophy Science Teaching Group Meeting, (Winnipeg, Canada).

## CONFERENCE PRESENTATIONS

- Invited participant to NSF-funded conference: Teaching Science through the History and Philosophy of Science. Boston University Interdisciplinary Conference, Boston, MA, December 2012.
- "Sickle-Cell Anemia Through History," National Association of Biology Teachers International Conference, Minneapolis, MN, November, 2010.
- "Henry David Thoreau, Forest Succession, and the Nature of Science: A Method for Curriculum Development", 9<sup>th</sup> International History, Philosophy and Science Teaching Conference, Calgary, June 24, 2007.
- "Using Explicit and Reflective Pedagogy and the History of Science to Affect Students' Nature of Science Conceptions: Results of an Empirical Study", Annual Meeting of the National Association for Research in Science Teaching, San Francisco, CA, April 4th, 2006.

- "Untangling Sickle-cell Anemia and the Discovery of Heterozygote Protection", [8<sup>th</sup> International History, Philosophy and Science Teaching Conference](#), Leeds, England on July 16, 2005.
- "Recapitulating the History of Sickle-Cell Anemia Research: Improving Students' NOS Views Explicitly and Reflectively" 7<sup>th</sup> International History, Philosophy and Science Teaching Conference, Winnipeg, Manitoba, July 31, 2003.
- "Using the History of Research on Sickle-Cell Anemia to Affect Preservice Teachers' Conceptions of the Nature of Science" International Conference of The Association for the Education of Teachers in Science, St. Louis, MO, February 1, 2003.

## **OTHER PRESENTATIONS:**

### **At Assumption:**

- "Henry David Thoreau, Forest Succession, and the Nature of Science: A Method for Curriculum Development", Given as a part of the Department of Natural Sciences Colloquium Series, Assumption College, March, 2007.
- "Untangling Sickle-cell Anemia and the Discovery of Heterozygote Protection to Address Students' Misconceptions in Genetics", Given as a part of the Department of Natural Sciences Colloquium Series, Assumption College, February, 2005.

### **Community:**

- "The Electrical Fire: A Re-enactment of the Theoretical Work of Ebenezer Kinnersley (1750)," Given as a Guest Speaker to the Holden Senior Center, Holden, MA, February 2015.
- "Holtz View of the Heavens – The Intersection of History, Science and Philosophy," Given as a Guest Speaker to the Paxton Richards Memorial Library, January 2013.
- "Electrostatic Toys of the 18<sup>th</sup> Century – Sparks and Shocks," Given as a Guest Speaker to the Paxton Senior Center, Paxton, MA, June 2009.
- "The Electrical Fire: A Re-enactment of the Theoretical Work of Ebenezer Kinnersley (1750)," Given as a Guest Speaker to the Holden Senior Center, Holden, MA, May 2009.
- "Historical Explanations of the Aurora Borealis," Given as a Guest Speaker to the Paxton Senior Center, Paxton, MA, September 2008.
- "Lessons from the History of Science," Given as a Guest Speaker to the Paxton Senior Center, Paxton, MA, May 2008.
- "Shocking Discoveries in 18<sup>th</sup> Century Electricity," Given as a Guest Speaker to the Paxton Senior Center, Paxton, MA, April 2008.

## PROFESSIONAL/DEPARTMENTAL SERVICE

- Ad hoc manuscript reviewer for *The American Biology Teacher*
- Ad hoc manuscript reviewer for *The Journal of Research in Science Teaching*, NOS strand.
- Ad hoc Reviewer of Book Manuscripts and Proposals for *Pearson Allyn & Bacon* (Science Teacher Education Strand)

## PROFESSIONAL SERVICE/AFFILIATIONS

- International History & Philosophy of Science Teaching Group (IHPST)
- National Association of Biology Teachers
- National Association for the Research in Science Teaching
- Association for Science Teacher Education

## INDUSTRY EXPERIENCE

DHD Healthcare, Inc.	Product Manager, New York	1995-1998
Marquest Medical Products	Marketing Product Manager, Denver	1992-1995
Pfizer Pharmaceuticals	Sales/Marketing, New York	1989-1991