

Wendy M. Martin

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Education

Ph.D., Science Education, University of Oklahoma, 2016

Dissertation: The Innovation Evaluation Process of Undergraduate Biology Instructors Who Actively Use Case Studies in Their Introductory Biology Courses.

M.A., Administrative Leadership, University of Oklahoma, 2011

Thesis: Understanding the Leadership Styles of Principal Investigators in Science: A Look at the Management Challenges PIs Face.

M.S., Botany, University of Oklahoma, 1997

Thesis: Photosynthate as the Limiting Factor Regulating Ureide Production in Soybean.

B.S., Biological Science, Southwestern Oklahoma State University, 1991

Major: Biology, Minor: Chemistry

Courses Taught

Principles of Biology Lab (Biology Majors)

Principles of Biology Lab (Core Gen-Ed Course)

Genetics Lecture

Introductory Botany Lecture/Lab

General Science Lecture/Lab

Introductory Zoology Lab

Biotechnology Applications

Medical Terminology

Foundations of Life Science Lecture/Lab

Experiences in Biology Lab (Non-Biology Majors)

Experiences in Biology Lab (Online)

General Botany Lecture/Lab

Genetics Lab

Professional Experience

Lecturer, 06/2018 – present

University of Oklahoma, Department of Biology

Teach Genetics lecture (BIOL 3333) and Genetics Lab (BIOL 3342)

Visiting Assistant Professor, 08/2017 – 05/2018

Fort Hays State University, Department of Biological Sciences

Teach Principles of Biology of Biology Lab (BIOL 180L for Biology Majors); teach Experiences in Biology Lab (BIOL 102L for Non-Biology Majors); teach Experiences in Biology Lab (BIOL 102L-V Online for Non-Biology Majors); teach Genetics lecture (BIOL 325); teach Medical Terminology (BIOL 245); serve as supervising faculty for TA's teaching both Principles of Biology Lab and Experiences in Biology Lab; coordinate the setup for Principles of Biology Lab.

Research Associate, 10/2013 – 08/2017

University of Oklahoma, Department of Microbiology & Plant Biology

Grind frozen switch grass plant samples for RNA extraction; extract RNA from ground frozen switch grass plant samples; development and maintenance of lab Web site using Dreamweaver software; assist in any other capacity necessary in the lab.

Teaching Postdoctoral Fellow, 01/2017 – 05/2-2017

University of Oklahoma, Department of Microbiology & Plant Biology

Assist the primary professor with the teaching of Biotechnology Applications (MBIO 4313) by prepping experiments and setting up the lab; instruct students through the lab techniques; curriculum design input; student assessment.

Teaching Postdoctoral Fellow, 01/2017 – 05/2017

University of Oklahoma, Department of Biology

Taught Introductory Zoology Lab (BIO 1121) by instructing students through the lab investigations and writing lab reports; student assessment.

Graduate Assistant, 01/2015 – 08/2015

University of Oklahoma, Instructional Leadership & Academic Curriculum

Assist the School Science Mathematics Association (SSMA) convention co-chairs with the 2015 Annual Convention by organizing convention activities, monitoring program submissions, and coordinating events at the convention site, the Skirvin Hilton Hotel in Downtown Oklahoma City, OK.

Adjunct Professor, 08/2012 – 12/2013

University of Science and Arts of Oklahoma, Division of Science and Physical Education

Taught (IDS 2023) Foundations of Life Science lecture and (IDS 2011) Foundations of Science laboratory; General Botany lecture (BIOL 1013) and General Botany laboratory (BIOL 1011); and General Science (NSCI 0123) which included preparing and giving lectures, instructing students through lab work, and preparing and grading exams; assist and mentor students.

Research Assistant, 09/2012 – 02/2014

University of Oklahoma, Department of Education

Conducted literature research in metacognitive thinking in mathematics.

Research Assistant, 03/2012 – 11/2012

University of Oklahoma, Institute for Environmental Genomics

Assisted doctoral fellows with DNA quantity analysis, DNA quality analysis, purification and amplification; microarray plate grid alignment; and literature research.

Academic Graduate Assistant, 03/2011 – 01/2012

University of Oklahoma, College of Liberal Studies

Managed and prepared budget reports for the Assessment of Disproportionate Minority Contact (DMC) grant and project; coordinated interviews between Juvenile Justice System (JJS) professionals and student interviewers, conducted interviews with JJS professionals; served as liaison for the research team and the post-award team at the OU Outreach Sponsored Program.

Research Associate/Lab Manager, 03/2010 – 09/2010

University of Oklahoma, Department of Botany and Microbiology

Managed and prepared budget reports for seven grants; editorial assistance for science manuscripts; managed the lab Web site using Dreamweaver software; coordinated with program managers of scientific meetings; assisted members of a large lab including undergraduates, graduate students, postdoctoral fellows, senior scientists, and the principal investigator (PI) with general administrative issues; served as liaison for international students and postdoctoral fellows with other university personnel and departments.

Advising Office Staff, 12/2009 – 03/2010

University of Oklahoma, Department of Zoology

Received students' advising forms after meeting with their academic advisors; entered the information into OU's advising software (Ozone – The Book); filed student advising forms; answered questions from students and academic advisors regarding students' progress in the advising process; answered the phone for the advising office.

Research Associate/Lab Manager, 03/2006 – 03/2010

University of Oklahoma, Department of Zoology

Conducted molecular biology research including PCR, cloning, and *in situ*; morpholino microinjection into lamprey embryos; lamprey rearing; drosophila rearing for protein studies; zebrafish rearing and manipulation for genetic mutation studies; microscopy including dissecting microscopes, stereomicroscopes, compound microscopes, and confocal microscopes; designed and managed the lab Web site using Dreamweaver software; prepared a lab manual for incoming undergraduate students for molecular biology research and techniques; assisted and mentored students; ordered supplies, shipping and receiving, record keeping and general lab management including maintenance.

Research Associate/Lab Manager, 05/2000 – 03/2006

Oklahoma Medical Research Foundation, Genetic Models of Disease Research Program

Carried out various cloning experiments, cell culture, RNA interference (RNAi) and transfection; maintained cell lines and nematode stocks for genetic studies; confocal microscopy; assisted and mentored students; organized lab experiments for Jr. Scientists Day in coordination with Putnam City schools; ordered supplies, shipping and receiving, record keeping, and general lab management including maintenance.

Research Associate, 01/2000 – 03/2000

USDA, Agricultural Research Service

Extracted carotenoids from eleven different watermelon cultivars using organic solvents; loaded extracts onto HPLC for analysis; produced a cDNA library from Buffalo Gourd.

Research Associate/Supervisor, 08/1997 – 05/1999

University of Oklahoma, Advanced Center for Genome Technology

Conducted DNA sequencing research on the Human Genome Project (chromosomes 11 and 22); responsible for taking researchers' prepared DNA through the sequencing process to data analysis; kept track of all of the data for a 70 person lab; trained students, research technicians, and postdoctoral fellows to use the ABI377 DNA sequencers; prepared a training manual and guide for using the ABI377 DNA sequencers.

Teaching Assistant, 05/1994 – 08/1997

University of Oklahoma, Department of Botany and Microbiology

Prepared material and set up demonstrations for the following courses: Introductory Botany, Plant Morphology, Plant Anatomy, and Nematology; assisted with grading for Nematology and Cell Biology.

Botany Instructor, 05/1996 – 08/1996 and 05/1997 – 08/1997

University of Oklahoma, Department of Botany and Microbiology

Taught (BOT 1114) Introductory Botany which included preparing and giving lectures, instructing students through lab work, and preparing and grading exams; supervised the lab prep person who set up each lab.

Laboratory Prep Person, 05/1995 – 08/1995

University of Oklahoma, Department of Botany and Microbiology

Prepped the classroom/lab for (BOT 1114) Introductory Botany which included setting out items necessary for each class; setting up and breaking down whole-lab experiments; preparing any solutions necessary for lab experiments; pouring plates for experiments; keeping the prep room organized.

Research Assistant, 01/1994 – 05/1994

University of Oklahoma, Department of Botany and Microbiology

Conducted general maintenance of the cooling system and automatic watering tables for the bio-containment greenhouse on campus; watered and fertilized all of the research plants.

Research Skills

Mini, Midi and Maxi DNA prep	RNA techniques
Polymerase Chain Reaction (PCR)	UV-Vis Spectrophotometer
Plasmid construction and purification	Gel electrophoresis
DNA sequencing techniques	cDNA library preparation
Cell culture and transfection techniques	<i>in vitro</i> and <i>in situ</i> transcription
Microscope experience including confocal	Restriction enzyme digestion
Preparing media/ plates for bacterial growth	Bacterial transformation
Coordination and design of experiments	Training development

Scholarship / Presentations

Martin, W. M. (2015). Leadership and management challenges of principal investigators in science. 8th Annual UNM Mentoring Institute Mentoring Conference. Albuquerque, New Mexico.

Martin, W. M., & Miller-DeBoer, C. J. (2015). The steps of the scientific method: If only it were that simple. Association for Science Teacher Education (ASTE) Conference. Portland, Oregon.

Martin, W. M. (2014). Using case studies to teach introductory botany. 15th Annual Conference on Case Study Teaching in Science. Buffalo, New York.

Miller-DeBoer, C. J., & Martin, W. M. (2013). Do teachers have good taste? Oklahoma Science Teachers Association Professional Development Symposium. Edmond, Oklahoma.

Martin, W. M. (2010). Case studies in toxic leadership - Toxic leadership of a scientific principal investigator: A wolf in sheep's clothing. 12th Annual International Leadership Conference. Boston, Massachusetts

Publications

Martin, W. M. (2016). *The innovation evaluation process of undergraduate biology instructors who actively use case studies in their introductory biology courses* (PhD dissertation). Jeannine Rainbolt College of Education, Department of Instructional Leadership & Academic Curriculum, University of Oklahoma, Norman, OK

Martin, W. M. (2015). Leadership and management challenges of principal investigators in science. In N. Dominguez, & Y. Gandert (Eds.), *8th Annual Mentoring Conference Proceedings: New Perspectives in Mentoring: A Quest for Leadership Excellence & Innovation*. Albuquerque, NM: University of New Mexico

Martin, W. M. (2015). Understanding inquiry in science education. In S. Latourelle (Ed.), *Innovations in College Science Teaching*. Arlington, VA: Society for College Science Teaching

Martin, W. M. (2012). Evidence of plant respiration – Part 1. In T. A. Laubach (Ed.), *Research and Development of Science Curricula, Vol. 1*. University of Oklahoma, Norman, OK

Martin, W. M. (2012). Evidence of plant respiration – Part 2. In T. A. Laubach (Ed.), *Research and Development of Science Curricula, Vol. 2*. University of Oklahoma, Norman, OK

Martin, W. M. (2011). *Understanding the leadership styles of principal investigators in science: A look at the management challenges PIs face* (Master's thesis). College of Liberal Studies, Administrative Leadership Program, University of Oklahoma, Norman, OK

Moulder, G.L., Cremona, G.H., Duerr, J., Stirman, J. N., **Martin, W.**, Qadota, H., Benian, G.M., Lu, H., & Barstead, R.J. (2010). α -actinin is required for the proper assembly of Z-disk/focal-adhesion-like structures and for efficient locomotion in *Caenorhabditis elegans*. *Journal of Molecular Biology*, 403(4), 516-528.

Martin, W. M., Bumm, L. A., & McCauley, D. W. (2009). Development of the Viscerocranial Skeleton During Embryogenesis of the Sea Lamprey, *Petromyzon marinus*. *Developmental Dynamics*, 238, 3126-3138.

Martin, W. M. (1997). *Photosynthate as the limiting factor regulating ureide production in soybean* (Master's thesis). Department of Botany and Microbiology, University of Oklahoma, Norman, OK

Kirkland, Jr. H., Dill, J. M., & **Selfridge (Martin), W. M.** (1991). Some Late Pleistocene Vertebrates from Western Oklahoma. *Proceedings of the Oklahoma Academy of Science*, 71, 55.

Professional Service

Committee member for the National Association of Biology Teachers, Four Year College and University Section, Professional Development Symposium Committee, 2015-2016, 2016-2017

Proposal reviewer for the School Science and Mathematics Association 2015 Convention

Event Supervisor for the 2015 Oklahoma Science Olympiad's Cell Biology Event, 2015

Served as a Judging Official for the regional and state competitions for Odyssey of the Mind 2010-2011, 2011-12, 2012-13, 2013-14, and 2014-15 school years

Workshop instructor for Women in Technology & Science: A Career Workshop for Young Women. Conducted a workshop for 5th grade girls titled "Why do the leaves turn colors in the fall?" Fall 2012

Graduate Student Representative for the Executive Committee in the College of Liberal Studies, 2010-2011

Honors and Awards

Graduate Student Scholarship to the 2015 Case Study Teaching in Science Conference
Instructional Leadership & Academic Curriculum Travel Grant, 2014 and 2015
Jeannine Rainbolt College of Education Travel/Research Grant 2014 and 2015
Robberson Research and Creative Endeavors Grant, 2014
Cum Laude, Southwestern Oklahoma State University, 1991

Memberships

National Association of Biology Teachers (NABT)
Association of College and University Biology Educators (ACUBE)
Association for the Study of Higher Education (ASHE)
Beta Beta Beta, National Honor Society in Biological Sciences
International Leadership Association (ILA)
National Science Teacher Association (NSTA) and Oklahoma Science Teacher Association (OSTA)
Kappa Delta Pi, International Honor Society in Education, Gamma Chapter

Training Certificates

Laboratory Safety, Personal Protection Equipment, Regulated Medical Waste Shipping, and Security Awareness, 2006-18
Hazardous Communication / General Safety, 2006-18
Gender Discrimination / Harassment Training for Faculty/Staff, 2006-18

References

Dr. Timothy Laubach, Associate Professor of Science Education
Instructional Leadership and Academic Curriculum
Jeannine Rainbolt College of Education, University of Oklahoma
820 Van Vleet Oval, Rm 114, Norman, OK 73019
(405) 325-1979 laubach@ou.edu

Dr. David McCauley, Associate Professor of Biology
Department of Biology, College of Arts & Sciences, University of Oklahoma
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Dr. Carrie J. Miller-DeBoer, Teacher Researcher, Middle School Science Teacher
Longfellow Middle School / NPS
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Dr. Jeannette Loutsch, Associate Professor of Biology
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