Andrew W. Woodward
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Education and professional experience

Professor of Biology, University of Mary Hardin-Baylor, 2020-present.
Associate Professor of Biology, University of Mary Hardin-Baylor, 2015-present.
Assistant Professor of Biology, University of Mary Hardin-Baylor, 2011-2015.
Visiting Assistant Professor/Academic Visitor, Rice University, summers 2012-2019.
Visiting Assistant Professor of Biological Sciences, St. Edward's University, 2010-2011.
Visiting Assistant Professor of Biology, Southwestern University, 2008-2010.
Research Scientist, Rice University, summers 2009-2011, 2016-present.
Howard Hughes Medical Institute Lecturer and Research Scientist, Rice University, 2007-2008.
Postdoctoral Fellow, University of Texas at Austin, 2006-2007.
Postdoctoral Research Associate, Rice University, 2005-2006.
Ph.D., Biochemistry & Cell Biology, Rice University, 2005.
B.A., Biochemistry and Biology double major, Rice University, 2002, *magna cum laude*.

Teaching experience

Plant Molecular Biology, University of Mary Hardin-Baylor, 2017-present.
Biomolecules, Genes, & Cells (General Biology I with lab), University of Mary Hardin-Baylor, 2015-present.
Survey of Biological Research, University of Mary Hardin-Baylor, 2015-2016.
Eukaryotic Development (Developmental Biology with lab), University of Mary Hardin-Baylor, 2012-present.
Biological Research Methods (with lab), University of Mary Hardin-Baylor, 2012-present.
Freshman Seminar, University of Mary Hardin-Baylor, 2012-present.
Human Anatomy & Physiology I (with lab), University of Mary Hardin-Baylor, 2011-2019.
Medicinal Botany, University of Mary Hardin-Baylor, 2014-2015.
General Biology I Laboratory, University of Mary Hardin-Baylor, 2013.
Human Anatomy & Physiology II (with lab), University of Mary Hardin-Baylor, 2012.
Research mentor for 22 UMHB undergraduate student independent projects, University of Mary Hardin-Baylor, 2011-present.
General Biology: Organisms and Populations, St. Edward's University, 2011.
Microbiology Lab, St. Edward's University, 2010-2011.
General Biology: Cells, Genetics, and Organ Systems, St. Edward's University, 2010.
Research mentor for an undergraduate student conducting independent microbiology research projects using *Salmonella*, St. Edward's University, 2010.
Molecular Mechanisms in Biology (with lab), Southwestern University, 2010.
Plant Physiology (with lab), Southwestern University, 2009.
Cell Biology, Southwestern University, 2008-2009.
Microbiology (with lab), Southwestern University, 2009.
Genes and Molecules, Southwestern University, 2009.
Cellular Physiology (with lab), Southwestern University, 2008.
Research mentor, 2 undergraduate students conducting independent molecular genetics research projects using *Arabidopsis thaliana*, Southwestern University, 2009-2010.
Instructor, Howard Hughes Medical Institute (HHMI) Seminar in Local Biology, Rice University, 2007-2008 (topic – current Houston-area microbiology research projects).
Guest lecturer, Biology for Non-majors, Rice University, 2008 (topics – plant diversity and agriculture).
Writing mentor, graduate-level Grant Writing course, Rice University, 2008.

Teaching experience (continued)

Research mentor, 3 undergraduate students conducting *Arabidopsis* research, Rice University HHMI *From Reading to Research* Program, 2007-2009.

Guest speaker, HHMI Seminar in Local Biology, Rice University, 2007.

Research mentor, 2 undergraduate students conducting cotton research, University of Texas, 2006-2007.

Genomics guest lecturer, The University of Texas at Austin, 2007 (topic – emerging technologies in whole-genome expression profiling).

Research mentor, 8 undergraduate students conducting *Arabidopsis* research, Rice University, 2002-present.

Guest lecturer, Genetics, Harding University, Searcy, AR, 2005 (topic – plant hormone signal transduction).

Guest lecturer, Cell Biology, Harding University, Searcy, AR, 2005 (topic – peroxisome function and biogenesis).

Guest lecturer, graduate-level Plant Molecular Biology, Rice University, 2005 (topic – plant hormone signal transduction).

Guest lecturer, Biology for Non-majors, Rice University, 2004 and 2005 (topics – plant diversity and agriculture).

Bioscience writing mentor, Cain Project for Writing in Science and Engineering, 2000 and 2001.

Published articles (undergraduate authors underlined)

Andrew W. Woodward and Bonnie Bartel. Biology in bloom: A primer on the *Arabidopsis thaliana* model system. (2018) *Genetics* **208**(4): 1337-1349.

Andrew W. Woodward*, Wendell A. Fleming*, Sarah E. Burkhart, Sarah E. Ratzel, Marta Bjornson, and Bonnie Bartel. A viable *Arabidopsis pex13* missense allele confers severe peroxisomal defects and decreases PEX5 association with peroxisomes. (2014) *Plant Molecular Biology* **86**(1-2):201-214. **These authors contributed equally to this article.*

Sarah E. Ratzel, Matthew J. Lingard, Andrew W. Woodward, and Bonnie Bartel. Reducing *PEX13* expression ameliorates physiological defects of late-acting peroxin mutants. (2011) *Traffic* **12**(1):121-134.

Doug J. Hinchliffe, William R. Meredith, Kathleen M. Yeater, Hee Jin Kim, Andrew W. Woodward, Z. Jeffrey Chen, and Barbara A. Triplett. Near-isogenic cotton germplasm lines that differ in fiber-bundle strength have temporal differences in fiber gene expression patterns as revealed by comparative high-throughput profiling. (2010) *Theoretical and Applied Genetics* **120**(7):1347-1366.

Mingxiong Pang, Andrew W. Woodward, Vikram Agarwal, Xueying Guan, Misook Ha, Vanithrani Ramachandran, Xuemei Chen, Barbara A. Triplett, David M. Stelly, and Z. Jeffrey Chen. Genome-wide analysis reveals rapid and dynamic changes in miRNA and siRNA sequence and expression during ovule and fiber development in allotetraploid cotton (*Gossypium hirsutum* L.). (2009) *Genome Biology* **10**(11):R122.

Jinsuk J. Lee, Andrew W. Woodward, and Z. Jeffrey Chen. Gene expression changes and early events in cotton fibre development. (2007) *Annals of Botany* **100**(7):1391-1401. (review)

Andrew W. Woodward, Sarah E. Ratzel, Erin E. Woodward, Yousif Shamoo, and Bonnie Bartel. Mutation of *E1-CONJUGATING ENZYME-RELATED1* decreases RELATED TO UBIQUITIN conjugation and alters auxin response and development. (2007) *Plant Physiology* **144**:976-987.

Joshua A. Udall, Lex E. Flagel, Foo Cheung, Andrew W. Woodward, Ran Hovav, Ryan A. Rapp, Jordan M. Swanson, Jinsuk J. Lee, Alan R. Gingle, Dan Nettleton, Christopher D. Town, Z. Jeffrey Chen, and Jonathan F. Wendel. Spotted cotton oligonucleotide microarrays for gene expression analysis. (2007) *BMC Genomics* **8**:81.

Published articles (continued)

Rebekah A. Rampey*, Andrew W. Woodward*, Brianne Hobbs, and Bonnie Bartel. An Arabidopsis basic helix-loop-helix leucine zipper protein modulates metal homeostasis and auxin conjugate responsiveness. (2006) *Genetics* **174**(4):1841-1857. **These authors contributed equally to this article.*

Andrew W. Woodward and Bonnie Bartel. Auxin: Regulation, action, and interaction. (2005) *Annals of Botany* **95**:707-735. (review)

Andrew W. Woodward and Bonnie Bartel. A receptor for auxin. (2005) *Plant Cell* **17**(9):2425-2429. (current perspectives essay)

Andrew W. Woodward and Bonnie Bartel. The *Arabidopsis* peroxisomal targeting signal type 2 receptor PEX7 is necessary for peroxisome function and dependent on PEX5. (2005) *Molecular Biology of the Cell* **16**:573-583.

Invited lectures

"Screening for *Arabidopsis* mutants requiring exogenous fixed carbon and displaying indole-3-butyric acid resistance reveals novel alleles of peroxisome function genes" International Conference on Plant Peroxisome Research, Minneapolis, MN, August 2011.

"Mechanisms and effects of polyploidy in plants" Molecular Cell and Developmental Biology departmental retreat, Smithville, TX, April 2007.

"RUB modification of SCF complexes regulates plant hormone signaling" Annual meeting of the Texas Genetics Society, Galveston, TX, April 2006.

"E1 conjugating enzyme-related1 is necessary for many aspects of plant development" Ubiquitin, Ubiquitin-like Proteins, and Cancer conference, Houston, TX, February 2006.

"Plant development is regulated by the hormone auxin" Harding University, Searcy, AR, October 2005.

"Genetic hypersensitivity to the plant hormone auxin" Beckman Symposium, Irvine, CA, July 2001.

Poster presentations (undergraduate authors underlined)

"Structured Discovery: Learning about Gene Structure and Function through Analysis of *Arabidopsis* Genes" Andrew W. Woodward. The Allied Genetics Conference, Online, April 2020.

"Plant Molecular Biology: Design and Implementation of an Undergraduate Course" Andrew W. Woodward. American Society of Plant Biologists, Montreal, Canada, July 2018.

"Action and Interaction in Introductory Biology" Andrew W. Woodward. Transforming STEM Pedagogy Through Active Learning, Georgetown, TX, June 2016.

"Action and Interaction in Introductory Biology" Andrew W. Woodward. American Society of Plant Biologists, Austin, TX, July 2016.

"Development of a Course, Medicinal Botany, Integrating Plant and Animal Biology" Andrew W. Woodward. American Society of Plant Biologists, Minneapolis, MN, July 2015.

"An Undergraduate Medicinal Botany Course That Explores Plant Biology, Pharmaceutical Development, and Primary Literature" Andrew W. Woodward. American Society of Plant Biologists, Portland, OR, July 2014.

"A Challenge to be Met with Energy: Undergraduates Learning Bioenergetics" Andrew W. Woodward. American Society of Plant Biologists, Providence, RI, July 2013.

"Combinatorial mutant analyses suggest that balanced PEROXIN5 localization is necessary for *Arabidopsis* peroxisome function" Andrew W. Woodward, Sarah E. Ratzel, Wendell A. Fleming, Marta L. Bjornson, and Bonnie Bartel. American Society of Plant Biologists, Austin, TX, July 2012.

Poster presentations (continued)

"Screening for *Arabidopsis* mutants requiring exogenous fixed carbon and displaying indole-3-butyric acid resistance reveals novel alleles of peroxisome function genes" Andrew W. Woodward, Sarah E. Ratzel, Matthew J. Lingard, Marta Bjornson, Abbie Ornelas, Violetta Vasquez, Monique Gill, Lucia C. Strader, and Bonnie Bartel. American Society of Plant Biologists, Minneapolis, MN, August 2011.

"From reading to research: Vertically integrating undergraduate research from the freshman through senior years" Andrew W. Woodward, Dereth R. Phillips, and Bonnie Bartel. American Society of Plant Biologists, Minneapolis, MN, August 2011.

"Peroxisome-defective mutants in *Arabidopsis thaliana*" Abbie Ornelas, Bonnie Bartel, and Andrew W. Woodward. Texas Academy of Science, Austin, TX, March 2011 (Honorable Mention Undergraduate Poster Award Winner).

"Characterization and mapping of *Arabidopsis thaliana* mutants defective in peroxisome function" Violetta Vasquez, Marta Bjornson, Bonnie Bartel, and Andrew W. Woodward. Texas Academy of Science, Austin, TX, March 2011.

"Characterization and mapping of *Arabidopsis* peroxisome mutants" Marta Bjornson, Andrew W. Woodward, Monique Gill, and Bonnie Bartel. American Society of Plant Biologists Southern Section Meeting, Austin, TX, March 2009.

"Isolation of *Arabidopsis thaliana* mutants that are auxin resistant when ethylene signaling is blocked" James Liu, Andrew W. Woodward, and Bonnie Bartel. American Society of Plant Biologists Southern Section Meeting, Austin, TX, March 2009.

"Expression, cloning, and characterization of small RNAs from cotton" Andrew W. Woodward and Z. Jeffrey Chen. Annual meeting of the American Society of Plant Biologists, Chicago, IL, July 2007.

"Functional genomic analysis of early events in cotton fiber development" Andrew W. Woodward, Zhiguo Han, Jinsuk J. Lee, S. Samuel Yang, Foo Cheung, Barbara Triplett, David M. Stelly, Peggy Thaxton, Sing-Hoi Sze, Christopher D. Town, and Z. Jeffrey Chen. Plant and Animal Genome conference, San Diego, CA, January 2007.

"RUB modification of SCF complexes regulates plant hormone signaling" Andrew W. Woodward, Erin E. Woodward, and Bonnie Bartel. Post Transcriptional Regulation of Plant Gene Expression conference, Austin, TX, June 2005.

"RUB modification of SCF complexes regulates plant hormone signaling" Andrew W. Woodward, Erin E. Woodward, and Bonnie Bartel. Ubiquitin and Signaling conference, Taos, NM, February 2005.

"Mutations in peroxisomal targeting signal type 1 and 2 receptors cause deficient PTS2 import and peroxisomal defective phenotypes" Andrew W. Woodward and Bonnie Bartel. 15th International Conference on Arabidopsis Research, Berlin, Germany, July 2004.

"Genetic analysis of peroxisome biogenesis and function in Arabidopsis" Andrew W. Woodward, Bethany K. Zolman, and Bonnie Bartel. Annual meeting of the American Society of Plant Biologists, Honolulu, HI, July 2003.

"Genetic analysis of peroxisome biogenesis and function in the model plant Arabidopsis" Andrew W. Woodward, Bethany K. Zolman, and Bonnie Bartel. Annual meeting of the Texas Genetics Society, Austin, TX, March 2003.

"Cloning and characterization of Arabidopsis *peroxin* (*pex*) mutants" Andrew W. Woodward, Bethany K. Zolman, and Bonnie Bartel. Annual meeting of the American Society of Plant Biologists, Denver, CO, August 2002.

"Genetic studies of auxin homeostasis: IAA conjugate resistance and auxin supersensitivity" Mónica Magidin, Andrew W. Woodward, and Bonnie Bartel. 12th International Conference on Arabidopsis Research, Madison, WI, June 2001.

"Auxin homeostasis" Mónica Magidin, Andrew W. Woodward, and Bonnie Bartel. 11th International Conference on Arabidopsis Research, Madison, WI, June 2000.

Poster presentations (continued)

"Comparative incidence of fibrosis in irradiated colorectum of murine strains" Andrew W. Woodward, Wendy Fang, Jeff Russell, and Elizabeth Travis. King Foundation conference, Houston, TX, August 1998.

University service

Director of Research Search Committee Chairperson, University of Mary Hardin-Baylor, 2020.
College of Humanities & Sciences Dean Search Committee, University of Mary Hardin-Baylor, 2019-2020.
Honors Committee, University of Mary Hardin-Baylor, 2013-present.
Information Technology Committee, 2019-present.
Chairperson, Human Anatomy & Physiology Curriculum Committee, University of Mary Hardin-Baylor, 2015-May 2017 & August 2018-present.
Student Success Collaborative (SSC) Workflow Development Committee and SSC Liaison to STEM Faculty, University of Mary Hardin-Baylor, 2018-present.
First Faculty, University of Mary Hardin-Baylor, 2012-present.
Co-Chairperson, Human Anatomy & Physiology Curriculum Committee, University of Mary Hardin-Baylor, 2011-2015.
Environmental Concerns, University of Mary Hardin-Baylor, 2016-2019.
Diversity Committee, University of Mary Hardin-Baylor, 2013-2016.
Learning Covenant Task Force, University of Mary Hardin-Baylor, Fall 2012.

Awards and activities

Faculty Development Grant, University of Mary Hardin-Baylor, 2018-2019.
Faculty Summer Development Grants, University of Mary Hardin-Baylor, 2014 & 2019.
Excellence in Scholarship Award, University of Mary Hardin-Baylor, 2016.
Faculty Development Grant, University of Mary Hardin-Baylor, 2015-2016.
Faculty Development Grant, University of Mary Hardin-Baylor, 2012-2013.
Participant, Lab Leadership Workshop, American Society of Plant Biologists, July 2007.
Outstanding Postdoctoral Platform Presentation Award, Texas Genetics Society Conference, 2006.
Schroepfer Award for Outstanding Published Research in Biochemistry and Cell Biology, Rice University, 2005.
Travel Award, 15th International Conference on Arabidopsis Research, 2004.
Houston Livestock Show & Rodeo Scholarship, 2003.
Honorable Mention, National Science Foundation Predoctoral Fellowship, 2001 and 2002.
Outstanding Senior in Cell Biology Award, Department of Biochemistry & Cell Biology, 2002.
Phi Beta Kappa, 2002.
Beckman Scholar, 2000-2001.
Rice Undergraduate Scholar, 2000-2001.
President's Honor Roll, six semesters.
Lower Colorado River Authority scholarship and internship in environmental sciences, 1999.
Robert A. Welch Foundation undergraduate biochemistry scholarship, 1998-2002.
King Foundation internship in biomedical research, M. D. Anderson Cancer Center, 1998.

Community outreach and involvement

Finance Committee Chairperson, Lexington United Methodist Church, 2019-present.
UIL Academic Meet Judge, Lexington Elementary School, Lexington, TX, 2009, 2010, & 2019.
Lay Leader, Lexington United Methodist Church, 2013-2018.
Academic Director, Texas Academy of Science, 2013-2015.
Chairperson of the Board of Trustees, Lexington United Methodist Church, 2010-2012.

Community outreach and involvement (continued)

Chairperson of the Staff/Parish Relations Committee, Lexington United Methodist Church, 2008-2009.

Elementary Science Fair Judge, Lexington ISD, Lexington, TX, 2011-2013.

Chairperson, Staff-Parish Relations Committee, Lexington United Methodist Church, 2009.

Volunteer, Texas Book Festival, 2007 & 2010.

"The environmental impacts of plants" Lexington Garden Club, Lexington, TX, June 2009.

"Working as a biology professor and researcher" Lexington Elementary School, Lexington, TX, October 2009.

Outreach seminar panelist, NSF Cotton Genomics Molecular Biology project, Hollandale Middle School, Arcola, Mississippi, 2006.