

Naomi S. Rowland

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Education

- **Master of Science:** University of Tennessee 2005
- **Bachelor of Science:** Western Kentucky University 2003

Teaching Experience

- **Western Kentucky University, Department of Biology**
 - **Genome Discovery and Exploration, BIOL 275** (face to face research class Fall 2014 to present)
 - Initiative from Howard Hughes Medical Institute
 - Students each isolate a bacteriophage from a soil sample
 - Students purify and characterize genome of the phage
 - **Introduction to Research, BIOL 199** (Taught 12 sections since spring 2010)
 - Hands-on laboratory techniques course (prior to 2012, course offered as post credit, BIOL 275)
 - Redesigned entire course in 2010 to update techniques relevant for current research
 - Teach students reagent preparation, experimental design, other general laboratory techniques
 - **Plant Pathology, BIOL 317** (Taught online every summer since 2013)
 - Completely designed course from ground up with no premade materials
 - Focus on plant/pathogen interactions and genetic mechanisms of disease
- **Western Kentucky University, Department of Agriculture**
 - **Agricultural Biotechnology, AGRI 475** (Taught online spring semesters since 2013)
 - Totally new class to the department
 - Explained the technology behind familiar ag products such as GMOs, Roundup Ready and Bt crops, cloned animals and biofuels.
 - Lead students to examine controversies behind many of these products and guide them to determine their own educated conclusions
 - **Plant Pathology, AGRO 317** (Taught online fall semesters since 2011)
 - Completely designed course from ground up with no premade materials
 - Incorporated examples of diseases affecting turf, landscape plants, crops, and forests
 - Update each semester to include newly discovered diseases in US
 - Would love to offer in face to face format with a lab component
 - **Other Classroom Teaching Experience**
 - **Contemporary Ag Issues, AGRI 494:** Invited 5 semesters to teach 2-3 day section on biotechnology (Fall 2007 to Fall 2009)

- **Science of Agriculture AGRI 101:** Invited 5 semesters to teach 1 day on biotechnology (various semesters Fall 2007 to Spring 2013)
- **Entomology and Plant Pathology AGRO 475:** Team taught with T. Willian, Fall 2008. Taught first 8 weeks on Plant Pathology.
- **Agriculture Genetics AGRO 475:** Team taught with E. Gray, Fall 2008. Taught last 7 weeks on modern applications of traditional genetics.

- ***Midcontinent University, General Science Education***

- **Environmental Science, SCI 1003**
 - Taught face to face and in accelerated 5 week format (July 2012)
 - Most students in classes are nontraditional students
 - Focused material on current environmental issues
 - Guided students to relate all issues to their daily life
 - Also taught once in online, 10 week format (July 2013)
- **General Biology, SCI 1103**
 - Taught face to face in accelerated 5 week format (June 2013)
 - Modified course material for nontraditional, older adult students
 - Assisted students in relating biological concepts to their everyday life and jobs
 - Successfully encouraged students to trade fear of science for a positive, relevant perception

Other Career Experience

- ***Biotechnology Center Coordinator, Ogden College of Science, Western Kentucky University***
October 2009-present
 - Train numerous undergraduate and graduate students on lab techniques, use of scientific equipment and lab safety
 - Design and troubleshoot experiments, analyze data, assist with scientific writing
- ***Research Assistant, Department of Agriculture, Western Kentucky University***
May 2007- October 2009
 - Managed USDA laboratory on WKU campus as well as barn and field plots
 - Supervised and trained 9 undergraduate students in general laboratory techniques
- ***Research Assistant, Department of Biology, Western Kentucky University***
May 2005- April 2007
 - Responsible for all aspects of laboratory management
 - Supervised and trained 11 undergrad, 2 graduate students in individual research projects

Publications

- Maples, J, Brault, J, Shewchuk, B, Witczak, C, Zou, K, **Rowland, N**, Hubal, M, Weber, T and Houmard, J. 2015. Lipid exposure elicits differential responses in gene expression and DNA methylation in primary human skeletal muscle cells from severely obese women. *Phys Genom.* (Accepted 02/15).

- Sharma, BV, **Rowland, NS**, Clouse, MM and Rice, NA. 2014. An improved assay for measuring low levels of nitric oxide in cultured pulmonary myofibroblasts. *Adv Biol Chem.* 4.
- Mefford, AM, Ayers, CC, **Rowland, NS** and Rice, NA. 2013. The *phka1* deficient I/LnJ mouse exhibits endurance exercise deficiency with no compensatory changes in glycolytic gene expression. *Op J Mol and Int Physiol.* 3: 87-94.
- Netthisinghe, AMP, Gilfillen, B, Willian, WT, **Rowland, NS** and Sistani, KR. 2011. Inorganic fertilizers after broiler litter amendment reduce surplus nutrients in orchardgrass soils. *Agronomy J.* 103: 536-543.
- Gilfillen, RA, **Rowland, NS**, Willian, WT, Sleugh, BB, Tekeste, MZ and Sistani, KR. 2010. Effects of broiler litter application on nutrient accumulation in soil. *Forage and Grazinglands.* 1105-01-RS.
- Winchester, JS, Rouchka, EC, **Rowland, NS** and Rice, NA. 2007. *In Silico* characterization of phosphorylase kinase: evidence for an alternate intronic polyadenylation site in PHKG1. *Mol Genet and Metab.* 92(3): 234-242.
- **Smith, NR**, Trigiano, RN, Windham, MT, Lamour, KH, Finley, LS, Wang, X and Rinehart, TA. 2007. AFLP markers identify *Cornus florida* cultivars and lines. *J Amer Soc Hort Sci.* 132(1): 90-96.
- Habera, L, Lamour, KH, **Smith, NR** and Donahoo, R. 2004. A single primer strategy to fluorescently label selective AFLP reactions. *Biotechniques.* 37(6): 902-904.

Professional Research Presentations

- *No recent professional research presentations due to current position restrictions*
- **Rowland, N.S.**, Gilfillen, R.A, Sleugh, B.B, Willian, W.T. and Futrell, M.L. 2007. Nutrient accumulation in sorghum-sudangrass with a winter rye covercrop after poultry litter application. ASA-CSSA-SSSA National Meeting.
- **Rowland, N.S.** and Rice, N.A. 2006. Nitric oxide suppresses pulmonary myofibroblast phenotypes. American Society of Biochemistry and Molecular Biology, FASEB J:20(4) A510.
- **Smith, N.R.** and Trigiano, R.N. 2005. AFLP markers identify *Cornus florida* cultivars and lines. American Society of Horticultural Science Research Conference.
- **Smith, N.R.**, Trigiano, R.N., Lamour, K.H., Habera, S.L. and Windham, M.T. 2005. AFLP markers identify flowering dogwood cultivars and lines. Southern Nursery Association Research Conference Proceedings. 50: 676-678.

- **Smith, N.R.**, Trigiano, R.N., Lamour, K.H. and Windham, M.T. 2004. DNA fingerprinting of Flowering Dogwood Cultivars. Southern Nursery Association Research Conference Proceedings. 49: 595-596.