

curriculum vitae

TIMOTHY A. RINEHART

USDA, ARS, Southern Horticultural Laboratory
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University Education

- 2001 Ph.D. (Botany) University of Idaho, Moscow, Idaho
Title: Transposable Elements and Genome (dis)Organization in Higher Eukaryotes.
- 1994 B.S. (Biology) Case Western Reserve University, Cleveland, Ohio

Employment

- 2003 – present Research Molecular Geneticist (Plants)
USDA, ARS, Southern Horticultural Laboratory, Poplarville, MS 39470
- 2003 – 2003 Application Scientist
Turner Biosystems Inc., Sunnyvale, CA 94085
- 2000 – 2003 Project Manager and DNA Analyst
Sequetech Corporation, Mountain View, CA 94043
- 1995 – 2000 Graduate Research Assistant
University of Idaho, Department of Biological Sciences, Moscow, ID 83843
- 1994 – 1995 Custom Sequencing Laboratory Technician
United States Biochemical, Cleveland, OH 44128
- 1994 – 1995 Staff Research Assistant, Type I
Case Western Reserve University, Dept. of Biol. Sci., Cleveland, OH 44106
- 1990 – 1995 Undergraduate Research Assistant under Dr. Chris Cullis
Case Western Reserve University, Dept. of Biol. Sci., Cleveland, OH 44106

Research Interests

My objective is to develop strategies for breeding new and improved woody ornamental germplasm adapted to the southeastern United States. I focus on understanding the genetic basis of host-plant resistance and integrating that knowledge *via* molecular-based breeding programs, typically developing SSR markers for ornamental crops. My work encompasses everything from classical genetics to molecular genetics including marker-assisted breeding, map-based cloning, and bioinformatics. I am particularly interested in the genes responsible for remontant flowering in *Hydrangea*. I also serve as a technology resource and have developed molecular tools for soil-borne pathogen detection, insect parasitoid identification, and DNA-based gut content analyses.

Refereed Publications

- Rinehart, T. (2004) AFLP analysis using GeneMapper software and an Excel macro that aligns and converts output to binary. *Biotechniques*, Vol. 37, Issue 2, pp 186-188.
- Rinehart, T., R. Grahn, and H. Wichman (2005) SINE extinction preceded LINE extinction in Sigmodontine rodents: Implications for retrotranspositional dynamics and mechanisms. *Cytogenetics and Genome Research* (in press).
- Grahn, R., T. Rinehart, M. Cantrell, and H. Wichman (2005) Extinction of LINE-1 activity coincident with a major mammalian radiation in rodents. *Cytogenetics and Genome Research* (in press).
- Rinehart, T., C. Dean and C. Weil (1997) Comparative Analysis of non-random DNA repair following *Ac* transposon excision in maize and *Arabidopsis*. *The Plant Journal*, Vol. 12, pp 1419-1427.

Current Service

Woody Landscape Plant Crop Germplasm Committee (WLPCGC) ex-officio member
University of Tennessee, Knoxville, TN, adjunct faculty, Dept. of Entomology and Plant Pathology
Graduate Student Committee Member, Renea DeVries, University of Tennessee, Knoxville, TN
Institutional Biosafety Committee, Southern Horticultural Laboratory
Safety Committee, Southern Horticultural Laboratory
Webmaster, Southern Horticultural Laboratory
Genomics Laboratory Liaison Group, ARS, Mid South Area

Scientific Community

American Society for Horticultural Science (ASHS) and Southern region member, 2003 – present
International Society of Horticultural Science (ISHS), 2003 - present
Mississippi Nursery and Landscape Association Affiliate member (MNLA), 2003 - present
The American Hydrangea Society (AHS) 2003 - present
American association for the advancement of Science (AAAS), 1999 - present
Genetics Society of America (GSA), 1997 – present

Scientific Presentations

- 2004 Invited Speaker, Fall 2004 Seminar Series, University of Tennessee, Department of Entomology and Plant Pathology, Knoxville, TN
“DNA-based Tools for Rhizoctonia Detection and Identification”
- 2001 Invited speaker, Colloquium Series, University of Idaho, Dept. of Biol. Sci., Moscow, ID.
“Transposable Elements and Genome (dis)Organization in Higher Eukaryotes.”
- 1999 Meetings of the Society for the Study of Evolution, American Society of Naturalists and Society of Systematic Biologists, University of Wisconsin, Madison, WI.
“Similar, Coordinated LINE and SINE activity in South American rodents.”
- 1999 Fall Seminar Series, University of Idaho, Dept. of Biological Sciences, Moscow, ID.
“Looking for SINEs of Activity: Profiling Retrotransposition in South American Rodents.”
- 1997 39th Annual Maize Genetics Conference, Sheraton Sand Key Resort, Clearwater Beach, FL.
“Comparative analysis of non-random DNA double-strand break repair following *Ac/Ds* excision in maize and *Arabidopsis*.”

Grower Presentations

- 2004 32nd Annual Horticultural Field Day, Mississippi State University (MSU), Coastal Research and Extension Center, South Mississippi Branch Experiment Station, Mississippi Agricultural and Forestry Experiment Station (MAFES), Poplarville, MS
“USDA Crapemyrtle Breeding Program in Poplarville, MS.”
- 2004 32nd Annual Horticultural Field Day, MSU, Coastal Research and Extension Center, South Mississippi Branch Experiment Station, MAFES, Poplarville, MS
“Genetic diversity and molecular detection of *Rhizoctonia* species in a nursery environment.”
- 2004 Ornamental Group Liaison Committee, Gulf States Horticultural Expo, Mobile, AL
“Ornamental Plant Molecular Genetics Research Overview.”
- 2004 32nd Annual Horticultural Field Day, MSU, Coastal Research and Extension Center, South Mississippi Branch Experiment Station, MAFES, Poplarville, MS
“Pollinator Gardening: The Bees”
- 2003 31st Annual Horticultural Field Day, MSU, Coastal Research and Extension Center, South

Mississippi Branch Experiment Station, MAFES, Poplarville, MS
"What can molecular genetics do for ornamental plant research?"

2003 31st Annual Horticultural Field Day, MSU, Coastal Research and Extension Center, South Mississippi Branch Experiment Station, MAFES, Poplarville, MS
"Genetic diversity in *Hydrangea*."

Teaching

2000 Instructor, Biology 352, Experimental Genetics, University of Idaho (UI), Moscow, ID
1999 Graduate Teaching Assistant, Botany 425/525, Developmental Plant Anatomy, UI, Moscow, ID
1998 Graduate Teaching Assistant, Biology 203, General Botany, UI, Moscow, ID
1995 Graduate Teaching Assistant, Biology 100, Introduction to Biology for non-majors, UI, Moscow, ID

Scholarships, Fellowships, Awards

1999 Travel Grant, Graduate Student Association, \$500
1998 Graduate Student Exhibition Outstanding Division Participant, GSA, \$200
1997 Travel Grant, Graduate Student Association, \$500
1990 Presidential Scholarship, CWRU, \$10,000

Published Abstracts and Proceedings

Rinehart, T. and S. Reed (2005, submitted) *Hydrangea* microsatellite markers for cultivar identification and hybrid verification. Plant and Animal Genome XIII (PAG), San Diego, CA.

Rinehart, T. and C. Pounders (2005, submitted) Linkage mapping SSR markers in *Lagerstroemia* species. American Society for Horticultural Science (ASHS) Southern region conference. Mobile, AL.

Pounders, C. and T. Rinehart (2004) USDA Crapehyrtle Breeding Program in Poplarville, MS.
Proceedings of the 32nd Annual Horticultural Field Day, MSU, Vol 32, pp 22-23.

Rinehart, T. and W. Copes (2004) Genetic diversity and molecular detection of *Rhizoctonia* species in a nursery environment. MSU, Proceedings of the 32nd Annual Horticultural Field Day, Vol 32, pp 19-20.

Rinehart, T. and B. Sampson (2004) Pollinator Gardening: The Bees. Proceedings of the 32nd Annual Horticultural Field Day, MSU, Vol 32, pp 32.

Rinehart, T. (2003) What can molecular genetics do for ornamental plant research? Proceedings of the 31st Annual Horticultural Field Day, MSU, Vol 31, pp 15.

Rinehart, T. and S. Reed (2003) Genetic diversity in *Hydrangea*. Proceedings of the 31st Annual Horticultural Field Day, MSU, Vol 31, pp 13.

Rinehart, T. and C. Weil (1998) Comparative analysis of non-random *Ac/Ds* footprint formation in maize and *Arabidopsis*. Graduate Student Exhibition, GSA, University of Idaho, Moscow, ID.

Weil, C., J. Eissis, T. Rinehart and P. Page (1997) Unusual host control of *Ds* transposition in maize. Keystone Symposium on Transposition and Site-specific Recombination, Santa Fe, NM.

Rinehart, T., K. Poppleton, N. Daigle and C. Weil (1997) Non-random double-strand break repair accompanies *Ac/Ds* transposon excision in maize and *Arabidopsis*. Keystone Symposium on Transposition and Site-specific Recombination, Santa Fe, NM.

Rinehart, T., C. Dean, K. Poppleton, N. Daigle and C. Weil (1997) Comparative analysis of non-random DNA double-strand break repair following *Ac/Ds* excision in maize and *Arabidopsis*. 39th Annual

Maize Genetics Conference, Sheraton Sand Key Resort, Clearwater Beach, FL.

Rinehart, T. (1996) *Ac/Ds* transposable elements: Analysis of insertion sites and excision products. Computational Molecular Biology, Visualization Analysis and Design in the Molecular Science (VADMS) Department, Washington State University, Pullman, WA.

Rinehart, T. and C. Weil (1996) Non-random DNA repair following *Ac/Ds* excision in *Arabidopsis*. 38th Annual Maize Genetics Conference, Pheasant Run Resort, St. Charles, IL.