

MICHAEL R. WIERDA, Ph.D.
3926 N Euclid - Tucson, AZ 85719
Phone 520-374-6212 e-mail mwierda@email.arizona.edu

SUMMARY

Highly adaptable, quality-oriented professional with 13 years of research experience. Including design, implementation, execution, and dissemination of scientific methods and results to stakeholders, government agencies, and laypeople. Experienced and knowledge in multiple computer productivity suites, toxicology (environmental and wildlife), chemistry, ecology, parasitology, histology, genetics, and safe tree climbing techniques. Additionally skilled and experienced in technical and report writing (scientific and white papers), professional communications, public speaking, literature review, and analytical reasoning. Teaching experiences gained over the past 6 years and interactions with students and teaching professionals have helped develop a personal pedagogy for organization and presentation of topics. Desire to work with motivated and multifaceted teams on challenging questions, innovative research, and important management issues.

Experienced in managing and leading cooperative teams involving government, academic, and private sectors and mentoring individual graduate and undergraduate students. Previously responsible for coordinating research efforts with the United States Forest, and Fish and Wildlife Services, Michigan Departments of Natural Resources, and Environmental Quality (DEQ), and Clemson, Michigan State and Lake Superior State Universities while managing the Michigan Bald Eagle Biosentinel Program. Knowledgeable in quality control/quality assurance and validation of methods of individuals and facilities for government approved protocols.

CURRENT POSITIONS

- University of Arizona Pesticide Safety Education, Assistant in Extension at the Arizona Pest Management Center based at the Maricopa Agriculture Center.

OBJECTIVE

Cooperative position in environmental science organization where my experiences can benefit stakeholders, research, management, agriculture, wildlife, public and private sectors. Primarily in search of an opportunity to continue to grow, develop, and be challenged as a scientist. Focused on being a valued member of a highly motivated, ethical and collaboratively team, ideally, working throughout an organization, across disciplines, and with public and private groups.

EDUCATION

B.S. Zoology (Avian Haemoparasites)	2001
<i>Northern Michigan University, Marquette, Michigan</i>	
M.S. Biology (Avian Foraging Ecology)	2008
<i>Northern Michigan University, Marquette, Michigan</i>	
Ph.D. Fisheries & Wildlife Biology (Environmental/Wildlife Toxicology)	2009
<i>Clemson University, Clemson, South Carolina</i>	

QUALIFICATIONS SUMMARY

Expert knowledge of multiple computer productivity suites, operating systems and mobile platforms with a broad skill set including biological, chemical, molecular, toxicological, and ecological techniques.

- Proficient with Microsoft, Linux, Ubuntu, and Mac operating systems.
Experience with Microsoft Office Suite (including Access), Open Office, Google Docs, Sequencher, Genotyper, Gene Marker, SAS, SPSS, and R.
- Extensive knowledge and experience in Analytical Chemistry techniques associated with organo-chemical pollutant extraction and quantification.
In short pollutants were: extracted with dichloromethane; dried with Na₂SO₄ columns; concentrated with cold finger rotary evaporation; and cleaned with silica and alumina column chromatography. Extracts were then evaporated down with a hot water bath and nitrogen finger evaporation. Concentrations were then quantified with dual column capillary gas chromatography with an electron capture detector.
- Proficient with DNA extractions from multiple sources and via multiple methods (from Qiagen column kits to phenol-chloroform extractions), polymerase chain reaction (PCR), microsatellite optimization, fluorescent microsatellite labeling including M13 and pigtail labeling, post PCR multiplex, gel electrophoresis, and fragment analysis
- Experience with fluorimeters, nanodrop, enzyme-linked immunosorbent assays, single-nucleotide polymorphism, restriction fragment length polymorphism, sequencing, base calling, ligations, broth and plate inoculation, pre-PCR multiplex, protein extraction, northern and western blot, and gel purification
- Experienced in public speaking in both scientific and public forums and particularly proficient at communicating complex topics in a not belittling way that is informative and simple to understand.

TEACHING

Teaching experience in lecture hall, laboratory, and field settings. Invited to the University of Cape Town in South Africa to teach analytical chemistry techniques used to extract pollutants from biosentinel tissues and invited to teach in association with a Superfund site owned by the Department of Energy, for the Savannah River Environmental Science Field Station, in 2010 and 2011. Enjoys the opportunity to work with people of varying backgrounds and craves that “ahh haa!” moment when colleagues/students truly understand the topic at hand.

University of Arizona

Undergraduate Student Mentor

- Cassandra Freely, Senior Honors Thesis. A Comparison Study of Methods for Extracting DNA from Naturally Shed Feathers, 2012-2013 School of Natural Resources and the Environment, University of Arizona, AZ

Pima Community College

Course Instructor

- BIO 156 Human Biology for Allied Health, 2011-present

Savannah River Environmental Sciences Field Station, South Carolina State University

Course Instructor

- ENV 490 Principles of Pollution Control, 2010
- ENV 300 Introduction to Environmental Science, 2011

Tri County Technical College

Course Instructor

- BIO 100 Introductory Biology, 2010
- BIO 101 Biological Sciences I, 2010-2011

Clemson University

Course Instructor

- FNR 470 Creative Inquiry, Bald Eagle Molecular Ecology Research, 2008
- WFB 499 Natural Resources Seminar, 2009

International

- University of Cape Town, South Africa, Sue Peall Lead Chemist, 2008, Training: Extraction and quantification of PCBs and pesticides in avian plasma.

Analytical Laboratory Techniques

- Dr. Wierda has trained undergraduate and graduate students in analytical chemistry techniques required to extract persistent organo pollutants from avian plasma. Dr. Wierda also supervised several undergraduate students in the analytical chemistry laboratory and molecular biology research.

Graduate Student Committee

- Jennifer Garrison, M.S., Analysis of Egg-lay Dates of Bald Eagles as a Potential Indicator of Global Climate Change, 2009-2010 Wildlife and Fisheries Biology, Clemson University, SC

Northern Michigan University

Lab Instructor

- BI 112 Biological Diversity, 2003
- BI 203 Medical Microbiology, 2004
- BI 210 Principles of Ecology, 2002 - 2004
- BI 218 Introduction to Cell and Molecular Biology, 2004
- BI 324 Invertebrate Zoology, 2002, 2003
- BI 398 Woodcock Ecology, 2000, 2001

RESEARCH INTERESTS

Trained as a biologist, wildlife ecologist, environmental toxicologist, haemoparasitologist, and molecular biologist. Previous research has included: parasitology, ecology, wildlife population genetics, and using wildlife as bioindicators for environmental toxicology. Over the past six years, my opportunities to work with people in the allied health fields have nurtured my interest and awareness of how exciting current research in the biomedical fields is.

PREVIOUS EXPERIENCE

University of Arizona

- Postdoctoral Fellow at University of Arizona, School of Natural Resources and the Environment, United States Geological Survey (USGS) Coop, investigating population genetics of the Arizona Bald Eagle population. 2011-present

Working in cooperation with the Arizona Game and Fish Department, USGS, and the University of Arizona Genetics Core. Establishing baseline data on population genetic diversity to facilitate further investigation into the “uniqueness” and possible “significance” of AZ Bald Eagle population to the Bald Eagle population as a whole. If the AZ population is shown to be both “unique” and “significant,” habitat protection could be implemented under the Endangered Species Act.

South Carolina State University

- Adjunct Assistant Professor, Savannah River Science Environmental Field Station, 2010-2011

Tri County Technical College

- Adjunct Assistant Professor, Department of Biology, 2010-2011

Clemson University

- Adjunct Assistant Professor, Department of Forestry and Natural Resources, 2009-2014
- Postdoctoral Research Fellow, Department of Forestry and Natural Resources, 2009-2010
- Doctoral Research Assistant, Department of Forestry and Natural Resources, 2006-2009
- Doctoral Research Assistant, Department of Environmental Toxicology, 2005-2006
- Assistant Consultant on environmental toxicology topics, 2006-2007

Northern Michigan University

- Adjunct Faculty, Department of Biology, 2005-2006
- Graduate Teaching Assistant, Department of Biology, 2002-2004
- Instructor, American Woodcock Ecology, 2001-2002

Central Michigan University

- Field Research Technician, 2004-2005

Grand Rapids Community College

- Study Lab Tutor for Biology, Botany, Ecology, Zoology, Anatomy and Physiology and Chemistry, 1996-1998.

HONORS AND AWARDS

- Ducks Unlimited Student Award, Marquette Michigan Chapter, 2000
- Charles C. Spooner Grant, Northern Michigan University, 2003, 2004
- Development Fund, Northern Michigan University, 2003
- Excellent in Education Award, Northern Michigan University, 2004
- Sigma Xi, 2006
- 1st Place, Student Presentations, Clemson University, Forestry and Natural Resources Graduate Student Seminar, 2007
- Marion Bailey Assistantship, Clemson University, 2007
- Association of Field Ornithologist Travel Award, 2009

TRAINING COURSES

- Biosafety and Biosecurity Training: Basic Biosafety Protection Course, 2013
Daniel Silvain, University of Arizona
- Bald Eagle Field Research Training: Handling and Sample Collection, 2005
James Sikarskie, Michigan State University
- Medical Surveillance Program, 2005
Sue Pedrick, Clemson University
- Chemical Safety, 2005-2010
- Biological Safety, 2005-2010
- Hazardous Waste Management, 2005-2010
Environmental Health Services, Clemson University
- Motivating and Teaching Your Students to Take Good Lecture Notes, 2009
- Learning Styles: Multiple Models, Multiple Teaching Methods, 2009
Linda B. Nilson, Clemson University
- Google @ School: A Step by Step Guide to Google Docs for Higher Ed, 2009
- Advanced Google Sites
Cindy Lane, Clemson University
- Finding Research and Project Funding Opportunities Tailored to Your Needs, 2009
Karen Pless, Clemson University
- Safe Zone Introduction to LGBT Issues Workshop, 2009
Safe Zone Staff, Clemson University
- Teaching Sustainability Across the Disciplines, 2009
Shelie Miller, Clemson University
- United States Forest Service Safe Tree Climbing Techniques, Trainee, 2007, Upgraded to Tree Climber, 2008
Teryl Grubb, United States Forest Service
- Blood Born Pathogens, 2005
- Chemical Hygiene, 2005
- Material Safety Data Sheets, 2005

SERVICE

Academic Service

University of Arizona

- School of Natural Resources and the Environment, USGS Coop, Sonora National Parks, Bio Blitz 2012

Clemson University

- Natural Resources Graduate Student Association, Member, 2005-2009
- Graduate Student Senate, Forestry and Natural Resources Senator 2006-2007
- Grievance Review Board, Graduate Student Member, 2008-2009
- Wildlife and Fisheries Biology Department Senior Presentation Judge, 2009, 2010

Public Service

Pima County

- Tucson Disc Golf Club, Treasurer, 2012-present
- National Highway Traffic Safety Administration, assisted in training law enforcement in the Standardized Field Sobriety Test
- Arizona Sonora Desert Museum, Volunteer for Raptor Free Flight, 2012-present

Oconee County

- Greater Oconee Disc Golf Club, President, 2007-2010
- Upstate Juniors Championship, Assistant, 2008
- City of Seneca Design Board, Championship Caliber Disc Golf Course at Shaver Recreation Center, Seneca, SC, 2009-2011
- Chattooga Belle Farms Disc Golf Course Design 2010

RESEARCH

PUBLICATIONS:

Theses and Dissertation

Wierda, M. 2009, Using bald eagles to track spatial and temporal trends of contaminants in Michigan's aquatic systems. Ph.D. Dissertations, Clemson University, 91 p. [Major Professor: Dr. William Bowerman]

Wierda, M. 2008, Foraging ecology of pileated woodpeckers in Dukes Experimental Forest in the upper peninsula of Michigan. M.S. Thesis, Northern Michigan University, 69 p. [Major Professor Dr. Jacqueline Bird]

Journal Articles—In Press

Venier, M., M. Wierda, W. Bowerman, R. Hites. 2010 Flame retardants and organo chlorine pollutants in bald eagle plasma from the Great Lakes region. *Chemosphere* 80(10), 1234-1240

Leith, K., W. Bowerman, M. Wierda, D. Best, T. Grubb, J. Sikarskie. 2010. A comparison of techniques for assessing central tendency in left-censored data using PCB and p,p'-DDE contaminant concentrations from Michigan's bald eagle biosentinel program. *Chemosphere* 80(1), 7-12.

Grubb, T., D. Delaney, W. Bowerman, M. Wierda. 2010. Golden eagle indifference to heliskiing and military helicopters in northern Utah. *Journal of Wildlife Management* 74(4).

Journal Article—in revisions

Wierda, M., W. Bowerman, K. Leith, A. Roe, K. Parmentier, W. Bridges, J. Sikarskie, D. Best, T. Grubb, and D. Bush. Using Nestling Bald Eagles to Track Spatial and Temporal Trends of PCBs and Pesticides in Aquatic Ecosystems of Michigan, For *Environmental Science and Technology*.

Invited Presentations

Bowerman, W., J. Garrison, M. Wierda, K. Leith, B. Helander, D. Best, S. Postupalsky, W. Bridges, T. Grubb, L. Grim, J. Sikarskie. 2009. Potential effects of climate change on *Haliaeetus* Eagles: A Risk Assessment Approach. Raptor Research Foundation Annual Meeting, Pitlochry, Scotland.

Bowerman, W., M. Wierda. 2008. Michigan Bald Eagle Biosentinel Project. Workshop: Mercury in the Great Lakes Region, Great Lakes Atmospheric Deposition Network. La Crosse, Wisconsin.

General Presentations

Wierda, M., K. Leith, W. Bowerman, A. Roe, K. Parmentier, W. Bridges, J. Sikarskie, D. Best, D. Bush. 2009. Michigan Bald Eagle Biosentinel Program Monitoring Trends of Persistent Organic Pollutants in Michigan's Aquatic Ecosystems. Annual Meeting of the Society for Environmental Toxicology and Chemistry, New Orleans, LA.

Leith, K., M. Wierda, W. Bowerman, S. Raimondo. 2009. Modeling Bald Eagles in Michigan's Great Lakes Basin. Annual Meeting of the Society for Environmental Toxicology and Chemistry, New Orleans, LA.

Fuentes, L., M. Wierda, W. Bowerman, W. Bridges, J. Sikarskie, T. Grubb, D. Bush. 2009. Using Bald Eagle Sentinel Data to Determine Status and Recovery of Wildlife Related Beneficial Use Impairments in Michigan Areas of Concern. Annual Meeting of the Society for Environmental Toxicology and Chemistry, New Orleans, LA.

Venier, M., M. Wierda, W. Bowerman, R. Hites. 2009. Flame Retardants in Plasma Samples from Bald Eagles from the Great Lakes Region. Annual Meeting of the Society for Environmental Toxicology and Chemistry, New Orleans, LA.

Grubb, T., D. Delaney, W. Bowerman, M. Wierda. 2009. Unexpected indifference of golden eagles (*Aquila chrysaetos*) to heli-skiing and military helicopters in northern Utah, U.S.A. Annual meeting of the Raptor Research Foundation, Pitlochry, Scotland.

Wierda, M., W. Bowerman, W. Bridges, K. Leith, J. Sikarskie, D. Best, T. Grubb, and D. Bush. 2009. Using bald eagles to track Hg concentrations in Michigan. Joint meeting of the Association of Field Ornithologists and Wilson Society of Ornithology, Pittsburgh, PA.

Venier, M., M. Wierda, W. Bowerman, and R. Hites. 2009. Flame Retardants in Plasma Samples from Bald Eagles from the Great Lakes Region. 52nd Annual Conference, International Association of Great Lakes Research, Toledo, OH.

Wierda, M., J. Bird, A. Lindsay, A. Rebertus. 2009. Foraging Ecology of Pileated Woodpeckers. Wilson Ornithological Society & Association of Field Ornithologist Joint Meeting, Pittsburgh, PA.

Grubb, T., D. Delaney, W. Bowerman, M. Wierda. 2008. Investigating effects of heli-skiing on golden eagles in the Wasatch Mountains, Utah. The Wildlife Society Annual Meeting, Miami, Florida.

Leith, K., M. Wierda, W. Bowerman, J. Sikarskie, D. Best, and T. Grubb. 2008. Using factor analysis as a tool for the improvement of field sampling strategies. Joint meeting of the Association of Field Ornithologists and Wilson Society of Ornithology, Mobile, Alabama.

Wierda, M., W. Bowerman, A. Roe, K. Parmentier, W. Bridges, K. Leith, J. Sikarskie, D. Best, T. Grubb, and D. Bush. 2008. Michigan bald eagle biosentinel program, monitoring trends of persistent organic pollutants in Great Lakes ecosystems. Joint meeting of the Association of Field Ornithologists and Wilson Society of Ornithology, Mobile, Alabama.

Isanhart, J., K. Heath, M. Hooper, M. Wierda, J. Sikarskie, D. Best, T. Grubb, L. Grim, W. Bowerman. 2007. Monitoring exposure of nestling bald eagles to lead in the Great Lakes Basin. Annual Meeting of the Society for Environmental Toxicology and Chemistry, Milwaukee, Wisconsin.

Wierda, M., W. Bowerman, A. Roe, K. Parmentier, D. Best, T. Grubb, J. Sikarskie, K. Leith, J. Thomsen. 2007. Michigan bald eagle biosentinel program: Monitoring trends of persistent organic pollutants in great lakes ecosystems. Annual Meeting of The Wildlife Society, Tucson, Arizona.

Bowerman, W., A. Roe, K. Parmentier, W. Bridges, K. Leith, M. Wierda, J. Sikarskie, D. Best, and D. Bush. 2006. Using bald eagles to track temporal trends in environmental toxicants and effects at multiple scales. Annual meeting Society of Environmental Toxicology and Chemistry, Montreal, Quebec, Canada.

Wierda, M., W. Bowerman, A. Roe, K. Parmentier, W. Bridges, K. Leith, J. Sikarskie, D. Best, T. Grubb, D. Bush, G. Kohlhep. 2006. Michigan bald eagle biosentinel program, monitoring trends of persistent organic pollutants in Great Lakes ecosystems. Annual meeting Society of Environmental Toxicology and Chemistry, Montreal, Quebec, Canada.

Wierda, M., J. Bird, A. Lindsay, A. Rebertus. 2006. Foraging Ecology of Pileated Woodpeckers. Clemson University Natural Resources Graduate Student Government Symposium, Marquette, MI.

Wierda, M., 2006. Foraging Ecology of Pileated Woodpeckers. Northern Michigan University Biology Department Master's Presentation, Marquette, MI.

Wierda, M., J. Bird, 2001. Theorized Haemoparasites of American Woodcock a two year survey. 10th International Congress of Parasitology, Vancouver, BC.

Wierda, M., J. Bird, 2001. Theorized Haemoparasites of American Woodcock a two year survey. Northern Michigan University Seminar Series, Marquette, MI.

Wierda, M., J. Bird. 2000. Theorized Haemoparasites of the American Woodcock a preliminary study. Argonne National Laboratories Symposium for Undergraduates, Argonne, IL.

Wierda, M., J. Bird. 2000. Theorized Haemoparasites of the American Woodcock a preliminary study. Northern Michigan University Seminar Series, Marquette, MI.

Extramural Research

South Africa, Using African Fish Eagles as biosentinels to track trends of PCBs, pesticides and mercury in the Val, Orange, and Breede Rivers, 2008.

Utah, A management study investigating the perceived effects of heli-skiing on productivity of golden eagles in the Tri Canyon Area of the Wasatch Cache. 2007.

Michigan, Longitudinal isotope analysis of stream periphyton in Michigan's Upper Peninsula, 2002-2003.

Michigan, Theorized Haemoparasites of the American Woodcock, 2000-2001