

ANNE FIRLIT WEERDA

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A science-trained institutional leader specializing in translating biological research into public education, museum practice, and community engagement.

EDUCATION

University of Wisconsin, Madison Madison, WI (2022-2024)

PhD Study in Integrative Biology - Developmental Neuroscience

Completed two years of doctoral coursework; not currently enrolled; eligible to resume

Research focus: *neuroethology and early ontogeny of teleost fishes, with emphasis on ecological context and organism-environment interactions.*

Advised under Dr. David Ehrlich

Northwestern University, Evanston, IL

MS.Ed.: Masters of Science in Education and Social Policy (2007)

Thesis Title: *Female Aggression in Schools: Understanding and improving the female discipline system in inner-city schools through the use of gender-specific services*

Advised under Dr. Sophie Haroutunian-Gordon

National Louis University, Chicago, IL

M Ed.: Masters of Education in Leadership and Supervision (2009)

Northwestern University, Evanston, IL (2001)

B.S.: Molecular & Cellular Biology

Media: Radio, Television and Film

EMPLOYMENT

Executive Director of Natural History Museum

June 2017 - Present

Burpee Museum of Natural History: Rockford, IL

Serves as chief executive and scientific steward of a public natural history museum integrating research collection care, education, and community engagement. Provides strategic leadership across exhibitions, scientific programming, live animal initiatives, field research, and institutional operations while maintaining the museum's role as both a regional educational resource and an active participant in paleontology discovery. Guides the development of programs that translate current research into accessible public experiences. Co-planned annual research lectures with international scientists from leading universities and institutions. Collected data and implemented programs designed to change the financial and public relation direction of the museum including: redefining museum financial structure, staffing and programming to create a more financial viable institution, redefining relationships with like minded organizations and educational institutions to broaden the reach and effective mission of the museum, developing a more integrated relationship with the community through outreach and marketing, and creating a more viable grant and foundation pool for funding opportunities through writing grants and foundation requests.

Graduate Research Assistant

September 2022 - June 2024

Dr. David Ehrlich Lab, University of Wisconsin, Madison

Researcher on projects: a. Behavioral and Physiological divergence of 3 ecotypes of Threespine Stickleback Larvae (in collaboration with the Weber Lab) b. Predator-Prey interactions: Evasion and Avoidance of *Danio rerio* in the presence of Libellulidae nymphs (*Pachydiplax lonipennis*, *Erythemis simplicicollis* *Plathemis lydia*), and c. Swimming kinematics of *Salmo trutta* and *Salvelinus fontinalis* larvae through local DNR hatcheries. Collaboratively maintained all fish lines, aquariums, and necessary equipment. Mentor to four undergraduate researchers collaborating with me on projects including i. Avoidance behaviors of *Danio rerio* in the presence of an ambush predator nymph with sensory perturbation at different developmental stages, and ii. Impact of temperature perturbation on larval *Danio rerio* larva on somatic and neurological growth.

Graduate Teaching Assistant

Teaching assistant for Biology 152: Organismal Biology and Zoology 555 Neuroscience Laboratory in Developmental Biology training students with in situ hybridization, microinjection, genetic control of cranial morphogenesis, neuroethology.

**Founder, President, and Principal Consultant
2013-2017**

Kids At The Core LLC

Professional development company focused on assisting teachers and administrators improve curriculum, evaluate quality assessments, instructional responsiveness, and quality measures of learning. Employed 10+ individuals. Through writing, speaking and consultation activities, I directed in-district facilitation as well as employed and managed staff to consult in school districts. The company worked in multiple states, and with hundreds of districts to improve classroom practices.

**School District Central Office: Director of Curriculum and Assessment
2009-2014**

Winnebago Public School District CUSD #323: Winnebago, IL

Managed the curriculum alignment and development process. in conjunction with the assessment implementation and analysis. Coordinated and monitored all district assessments, both state mandated and district mandated, analyzed, and presented assessment results to teachers, administrators, School Board members and other major stakeholders. Wrote and/or participated in the implementation of federal and state grants from the district operational budget to special initiatives including Race to the Top, ARRA, Title I, Carol White, and EETT.

**Teacher, Administrator, Regional Assessment Specialist
2001-2009**

Edison Learning, Region 5: IL, WI, MN, and IA CICS Longwood Grades K-12 Campus, Chicago IL

Teacher. Science Department Chair. Director of Charter Recruiting. Science Teacher: Biology, Zoology, Chemistry, Physics, Physical Science, Environmental Sciences.

Regional Assessment: Guided schools and districts toward improving their Annual Yearly Progress (AYP): federal and state status, and in increasing overall student achievement.

Alliance Schools (Chicago): Participated in dramatic turn-around efforts in low performing schools targeted for school closure. Completed full audit including data collection and analysis of all programs, learning environment and instruction. Developed protocol for improvement and provided professional development and coaching to teachers and administrators. Led multi-leveled support to instructional staff and administrators to boost student achievement and school safety.

Managed Schools (Milwaukee, Peoria, Duluth, Chicago): Provided professional development for curriculum alignment and assessment implementation. Provided principal guidance and professional growth assistance. Worked with all staff to implement protocols in collecting and responding to students' data. Assisted in the school management process with the larger public district.

**Research Intern Assistant Zoology Department
1999-2001**

The Chicago Field Museum, Chicago IL

Assisted in research efforts in the Zoology department under the leadership of Dr. L. Heaney and the Philippine Research Project. Managed the development of two on-line community education exhibits for the Department of Mammals designed to pair with full-scale exhibitions at the museum. Developed the first searchable Fieldiana for online research and educational use. The database included clickable maps (redrawn from multiple authors), clickable families and genus, and individual species information including skin and skull photographs of every animal, identification information, distribution information, habitat and ecology information, and details on publications from that species. The database is still in active use today, updated with current research http://archive.fieldmuseum.org/philippine_mammals/

**Various Teaching Assistant Positions
2000-2001**

Northwestern University, Evanston, IL

Teaching Assistant for 3 quarters of Biology BIOL_SCI 200 level series including lecture TA and lab TA. Oversaw undergraduate labs, provided tutorial office hours, graded student reports, and graded exams. Reported to different professors for each quarter. Teaching Assistant to elective undergraduate biology course in conservation. Advanced slides during lectures, provided tutoring office hours for students.

ADDITIONAL RESEARCH EXPERIENCE

Burpee Museum of Natural History

2017-2025: Paleontology

Hanksville, Utah Carter County, Montana & Rockford, Illinois

Field work & lab work. Worked under Joshua Mathews in the field and in the lab. Fieldwork consisted of: assisting with prospecting for new sites, excavation of current sites, gathering of data on specimens being excavated, maintenance of equipment, working and coordinating with volunteers, and digitizing areas of the site. **Lab work** was conducted in the Brost PaleoResearch Lab and consisted of assisting sorting and identification of collected microfossils for several different localities. Fossils include parts of mammals, amphibians, reptiles, fish, and dinosaur fragments.

Verauga Foundation & Burpee Museum of Natural History

February 2020: Conservation Science

Limon, Costa Rica

Observation of Field Work with multiple researchers. Costa Rica Veragua Rainforest Park (VRP; 9°55'30"N, 83°11'28"E) covers 3,212 acres, and is located 1 hour inland of the Port of Limon near the Talamanca Mountain Range in the La Amistad International Park, the greatest area of virgin forest. This private reserve, open for 11 years, ranges from 200-420 m above sea level and consists of mature forest, secondary vegetation at different stages of regeneration, open areas, and dirt roads. Fieldwork consisted of surveys in bats, butterflies, amphibians, reptiles, and watersheds at multiple locations.

Fred W. Turek Lab

1998-1999: Molecular Biology--Gene Regulation & Hormone Production

Northwestern University, Illinois

Intern undergraduate researcher and assistant. Worked under Dr. T. Horton on the project: *regulating luteinizing hormone and follicle-stimulating hormone in Siberian male hamsters*. Sampled hamster tissue and blood from subjects, cared for hamsters, participated in quantifying behavioral patterns and recorded data in an annotated catalog, documented observations, and performed general lab cleaning.

Mote Marine Laboratories

Summer 1999: Conservation Science

Sarasota, Florida

Volunteer field researcher. Worked under Sheri Barton monitoring manatee populations of the Sarasota Bay area. Field research consisted of monitoring several waterways for the presence of manatees by boat, collecting and recording environmental data and photo samples when specimens were located, and working with GPS locators placed on select individuals.

AWARDS, FELLOWSHIPS

Graduate Student Teaching Excellence Award Finalist (2024) University of Wisconsin, Madison

People to Watch: *Rockford Register Star* (2019)

Stateline 25 People You Should Know (2018) *Northwest Quarterly*

Stateline 75 People You Should Know (2018) *Rockford Register Star*

40 Leaders Under 40: City Award Program (2016)

Selected based on criteria including innovation, community philanthropy, leadership and growth potential in the Rock River Valley.

Golden Apple Scholar: Fellowship for Education (2007)

Selected based on teaching practices and academic promise for participation in multi-year rigorous post-graduate professional development. Fellowship for funded masters program work at Northwestern University School of Education in conjunction with the Golden Apple Foundation.

Field Museum Intern Fellowship (2001)

Funded work in Dr. L. Heaney's lab at the Field Museum to assist with his research and special projects.

Studio 22 Grant Recipient and Director (1999)

Principal recipient, director and producer of Virtual Biology Labs: an electronic classroom for high school students lacking resources for in-person hands-on labs: with interactive instruction and lab simulations including genetic experimentation with *Drosophila melanogaster*. Intended for increasing student exposure to college level lab activities.

CERTIFICATIONS

Illinois K-12 Administrator Certification: K-12 Education (awarded 2010)

Illinois Teacher Middle School & High School Science Certification (updated 2007)

GRANTS AWARDED & IMPLEMENTED: SELECTED HIGHLIGHTS

Capitol Grant: Illinois Department of Natural Resources IDNR: *Quality Air Systems*

State Competitive Grant: \$667,600

Wrote Proposal, Awarded November, 2020

Capitol Grant: Illinois Department of Natural Resources IDNR: *Redesigning Ordovician, Carboniferous, Mazon Creek, Jurassic, Pleistocene, and Geology Exhibits*

State Competitive Grant: IDNR: \$300,000

Implemented, Collected Data and Writing Final Reports. Leading implementation of grant at Burpee Museum to redesign and create six new and updated exhibits with the focus on current scientific content, current educational trends in exhibit design, and American Disabilities Act compliance.

Community Foundation of Northern Illinois (CFNIL): *Enhance Burpee's Impact: Website Technical Development*

(Regional Competitive Grant: CFNIL Humanities) \$30,000

Wrote Proposal, Implemented, Collected Data and Wrote Final Reports

Wrote application and lead implementation of competitive grant at Burpee Museum to redesign Burpee Website and subsequent user portals including improving Search Engine Optimization (SEO), Virtual Reality (VR) portals, user authentication, new branding, and website speeds. Collected data on implementation and wrote all compliance reports.

Century 21 Grant: *Enhancing Education* (Federal Competitive Grant: US Department of Education, Illinois State Board of Education, Rockford Public Schools) **\$60,000**

Annual Grant to provide science educational opportunities to underserved populations

81Thrive Grant: *Operational Support: \$50,000*

Support operational funding for nonprofits as they redefine how their organization will overcome the financial challenges of the pandemic

Association of Science and Technology Centers (ASTC) & Voya: *Emergent Technologies for Learning: Virtual Reality* (National Competitive Grant: ASTC)

Wrote Proposal, Implemented, Collected Data and Wrote Final Reports

Kjelstrom Foundation: *PaleoFest for All: Bringing underprivileged students to paleontological research* (Regional Competitive Grant)

Wrote Proposal, Implemented, Collected Data and Wrote Final Reports

Bureau of Land Management (BLM): *Jurassic Research at the Hanksville Burpee Dinosaur Quarry* (Federal

Competitive Grant: BLM) 2017-2019 \$120,000+over two years

Co-Implemented, Collected Data and assisted with financial elements of Final Reports

E2T2: Enhancing Education through Technology (*Federal Competitive Grant: US Department of Education: Ed-Tech*)
Co-wrote application and lead implementation of a \$600,000 competitive federal grant at Winnebago School District 323 to implement new educational technology with proven efficacy on student achievement measures, lead staff in professional development to implement technology updates into integrated curriculum and instruction, co-managed grant reporting to feds, collected results, reported results.

Race to the Top: USA (*Federal Competitive Grant: US Department of Education and Illinois State Board of Education*)
Wrote application and led implementation of federal grant at Winnebago School District 323 to provide data to Illinois about assessment techniques to measure and monitor student achievement and growth as well as associating teacher evaluation with student growth measures. Lead all assessment professional development and writing of assessments district wide, collected, analyzed and reported data through grant reporting requirements. Our success with this program was a model for future district implementation in Illinois and nationally. Data obtained from this grant led to state-wide presentations, talks, and articles I authored at the request of the Illinois State Board of Education.

ARRA, Title I, Title III (*Non-Competitive Grant: Illinois State Board of Education*)
Wrote all applications and implemented grant requirements. Lead all reporting requirements for the grant to keep the district in compliance and secure future funding.

Research Skills

Neuroscience: Photomicrography of morphometry, in vivo anesthetized, and post mortem. Neuroethology data collection including three dimensional and 2D high speed videography data collection of behavior. Writing custom code for analysis including creating artificial neural networks (python, and guided user interface (gui) of deep lab cut and SLEP) to analyze large video datasets and convert to (x, y, z) coordinates to analyze movement. Behavioral analysis using throughput data at high frame rates (ex: 1000hz) via matlab, mathworks. Frame by frame video analysis (ex: ImageJ). Aquarium maintenance and upkeep. Microinjection of eggs for genetic manipulation, spawning and breeding fish.

Biology Field Work: Collecting data and collaboration with local hatcheries, high speed videography of swimming kinematics of different species of trout. Design and implementation of biological field surveys classifying plants, animals and other organisms, Conducting surveys to identify, record, and monitor species and their habitats, Communicating and consulting with landowners regarding access for surveys, Identification and cataloging specimens collected, Working with Local, State and Federal government agencies, Foundations/trusts, Conservation charities, and Research institutes.

Education Research Field Work: Surveying multiple populations to determine targets, Working with NGOs and Public entities to obtain research permissions, Design and implementation of interview-based and survey based sociological field surveys, Statistical data analysis.

Museum Biology Laboratory Work: Identification and cataloging collected specimens (ie: microfossils, modern mammals, insects) Taxidermy work (ie: wet taxidermy and isolation of skins/skulls), Caliper measurement of bones, Strong microscopy skills, Database Management

Molecular Biology Work: Microinjection (*Danio rerio* *0dpf* eggs), in situ hybridization, PCR amplification, DNA and protein manipulation, strong analytical and laboratory skills

Technology & Software Skills:

Artificial Neural Networks for Behavior Analysis: SLEAP, Deep Lab Cut (both Python based GUI)

Coding Languages: Terminal, Python, Matlab

Statistical Software: Matlab, SPSS, Excel

Database: Matlab, *.h5, Excel, MS Access,

Financial: Quickbooks, Excel

Web: HTML, Wordpress, Drupal

Graphic Design: Adobe Illustrator, Adobe In-Design, Adobe Photoshop

Video Editing: ffmpeg, Camtasia, Adobe Premiere, Avid Software

3D Photogrammetry and Virtual Reality Scanning: Matterport software, CAD software 3D Builder

Grant Writing & Fund Development Skills:

Wrote and was successfully awarded over 3.2 million for Burpee Museum via foundations and grants between 2017-2025 for research, education, and science collections.

Federal Database Experience: National Science Foundation, Grants.gov, Institute of Library and Museum Sciences, Bureau of Land Management, US Department of Education.

State Database & Application Experience: Illinois Department of Natural Resources, Illinois State Board of Education, Community Foundation of Northern Illinois

Private Grant and Foundation Experience: Kjelstrom Foundation, VOYA Foundation, Woodward Governor, Greenlee Corporate Foundation, Zilla Corporation Foundation, Chicago Blackhawks Foundation, Brubaker Trust, Anderson Foundation

SELECT Conference Presentations

Presentations include select talks where speaker fee was paid by sponsoring organization

Weerda, A. F., 2017. Keynote Speaker *Growth Mindset: Using Data to Drive Change*. EduCLIMBER Annual Conference. (August 3, 2017)

Weerda, A. F., 2016. Keynote Speaker: *Rigorous Growth Goals and Effective Data Use*. Regional Office of Education Administrator Academies ROE Area 40 (Nov 10, 2016)

Weerda, A. F., Mullikin, J., 2017. Keynote: *Assessment Design and Validity*. Breakout: *Measuring and monitoring learning*. Southern Wisconsin District Professional Development Event. Elkhorn, WI (Sept 30, 2016)

Weerda, A. F., Mullikin, J., Atlee D.M., 2017. Breakout Sessions: *Assessment Design and Validity*. EduCLIMBER Annual Conference. (Aug, 1 2016)

Weerda, A. F., 2016. 3-Keynote Talk Series: *Assessments to measure and monitor performance based education*. WILCO Career Education Seminar (June 8-10, 2016)

Weerda, A. F., 2016. Breakout Session Speaker: *Quality Assessment Design*. Illinois Association of Curriculum and Development (April 21, 2016)

Weerda, A. F., 2016. Keynote Speaker: *Rigorous Growth Goals and Effective Data Use*. Regional Office of Education Administrator Academies ROE Area 1 & Area 35 (Feb 2, Feb 4, 2016)

- Weerda, A. F.**, 2016. Keynote Speaker: *Rigorous Growth Goals and Effective Data Use*. Regional Office of Education Administrator Academies Illinois Region Area 1, Area 35, Area 12, Area 26, & Area 53 (Feb 2, Feb 4, March, 6, March 23 2016)
- Weerda, A. F.**, 2015. Keynote Speaker: *Quality Assessment for Growth*. Illinois Leadership Academy, Bellville, IL (November 19, 2015)
- Weerda, A. F.**, Monge, D.A. 2015 Featured Speaker: *Quality Assessment for Growth*. Illinois Association of School Administrators, Springfield, IL (October 18, 2015)
- Weerda, A. F.**, 2015 Featured Speaker: *Measuring Student Growth with Valid Assessment*. Elmhurst Community School, Elmhurst IL (August 4, 2015)
- Weerda, A. F.**, 2015 Featured Speaker: *Effective Implementation of Student Growth Measures in K-12 Education*. Rock Island County Regional Office Education, Moline, IL & Quincy, IL (Jan 9, & 22, 2015)
- Weerda, A. F.**, 2014 Administrator Academy Keynote: *Effective Implementation of Student Growth Measures in K-12 Education*. Regional Educational Conference R.A.C, St. Charles, IL (Dec 8, 2014)
- Weerda, A. F.**, 2014. Keynote: *Effective Implementation of Student Growth Measures in Special Education*. Niles Township Special Education Association (Dec 3, 2014)
- Weerda, A. F.**, 2014. Keynote: Common Formative Assessments for Progress Monitoring Student Learning in Special Education. School Association for Special Education (SASE). Dupage County, IL
- Weerda, A. F.**, 2014. Breakout Session Talk: Measuring Growth for Student Learning Targets. Speech and Language Pathologists of the State of Louisiana. Abstract. (October 2, 2014)
- Weerda, A. F.**, 2014. Breakout Session: Common Assessments to Measure Student Growth Keynote Lecture. Association of Curriculum Development of Illinois (ASCD IL) (October 27, 2014)
- Weerda, A. F.**, Summers, B. 2013. Breakout Session: Common Assessments: Understanding Implementation and Efficacy. Illinois Association of School Administrators: School Boards of Illinois Conference BreakOut Session. (unpaid presentation)

Published Written Work

- Weerda, A. F.**, Monge, D. A., 2016. *Formative Assessment to Measure Learning and Growth*. Accepted 2016: Illinois Teacher Academy: Illinois State Board of Education Teacher Certification Professional Development Database.
- Weerda, A. F.**, Monge, D. A., 2016. *Success with Student Growth: PERA Law Implementation*. Accepted 2016: Illinois Teacher Academy: Illinois State Board of Education Teacher Certification Professional Development Database.
- Weerda, A. F.**, 2015. *Rigorous Growth Goals and Effective Data Use*. Accepted 2015: Illinois Administrator Academy #1611: Illinois State Board of Education Administrator Certification Professional Development Database.
- Weerda, A. F.**, 2015. *Successful Implementation of Student Growth: District Decisions and Assessment Tools*. Accepted 2015: Illinois Administrator Academy #1680: Illinois State Board of Education Administrator Certification Professional Development Database & Illinois Principal Association.
- Weerda, A. F.**, 2015. The SLO Toolkit: *Making Student Learning Objectives (SLOs) Work*. Accepted 2015: Illinois Administrator Academy #1736: Illinois State Board of Education Administrator Certification Professional Development Database & Illinois Principal Association.

Weerda, A. F., 2014. *Quality Assessment Design*. Accepted 2014: Illinois Administrator Academy #1608: Illinois State Board of Education Administrator Certification Professional Development Database.

Weerda, A. F., Summers, B. 2013. *Effective Implementation of Student Growth Measures*. Accepted 2013: Illinois Administrator Academy #1515: Illinois State Board of Education Administrator Certification Professional Development Database.

Heaney, L.R., Dolar, M.L., Balet, D.S., Esselstyn, J.A., Rickard, E.A., Sedlock, J.L. 2007, 2010 *Synopsis of Philippine Mammals*. *Fieldiana: Field Museum of Natural History* <http://archive.fieldmuseum.org/philippine_mammals/> 2007 Site Planning, Development, and Design: **Firlit, A. (Weerda)**, Heaney, L.R., R. Banasiak

Heaney, Lawrence R. & Regalado, Jacinto C. Jr., 2007 *Vanishing Treasures of the Philippine Rainforest: Online Edition*. Field Museum of Natural History <http://archive.fieldmuseum.org/vanishing_treasures/> Site Development: **Firlit, A. (Weerda)**, Heaney, L.R., Bober, S. Site Design: **Firlit, A. (Weerda)**