Jason P. Berninger
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Education

Baylor University, PhD August 2011, Institute of Biomedical Studies; Waco, Texas
Affiliations: Department of Environmental Science, Center for Reservoir and Aquatic Systems Research; Deans Scholarship Recipient**;**
Dissertation Title: Leveraging available data for contaminants of emerging concern to develop an understanding of environmental hazard potential.

University of Houston – Clear Lake - Master of Science, December 2002 - Environmental Science-Biology, Houston, Texas
Master's Project: Linking Genetic Variation with Changes in Metal Concentration in Two Fish Species from the Rio Negro Basin, Amazonas, Brazil.

Miami University, Oxford, Ohio, Zoology Graduate Program.

Saint Louis University Bachelor of Science, May 1997 – Biology, St. Louis, Missouri

Publications

Berninger JP & Brooks BW. 2010 Leveraging Mammalian Pharmaceutical Toxicology and Pharmacology Data to Predict Chronic Fish Responses to Pharmaceuticals. *Toxicology Letters.* 193: 69-78

Brooks BW, James SV, Valenti Jr. TW, Urena-Boeck F, Serrano C, **Berninger JP**, Schwierzke L, Mydlarz LD, Grover JP, & DL Roelke. 2010, Comparative Toxicity of *Prymnesium parvum* in Inland Waters. *Journal of American Water Resources Association.* 46: 45-62

Berninger JP, Williams ES, Brooks BW. 2011 An initial probabilistic hazard assessment of oil dispersants approved by the United States National Contingency. *Environmental Toxicology and Chemistry*. 30: 1704 - 1708

Williams ES, **Berninger JP**, Brooks BW. 2011 Application of Chemical Toxicity Distributions to Ecotoxicology Data Requirements under REACH. *Environmental Toxicology and Chemistry*. In Press (currently available online: ETC Early View)

Berninger JP, Du B, Connors KA, Eytcheson SA, Prosser KN, Valenti TW, Chambliss CK, Brooks BW. 2011. Effects of the Antihistamine Diphenhydramine to Select Aquatic Organisms. *Environmental Toxicology and Chemistry*. In Press (available online: Early View)

Current Research Experience

Baylor University, (8/07 to present) PhD Candidate Institute of Biomedical Studies
Dissertation Title: Leveraging available data for contaminants of emerging concern to develop an understanding of environmental hazard potential.
Dissertation Research: assessing effects of human pharmaceuticals on fish, development of probabilistic risk assessment methods to understand potential risk and prioritization of pharmaceuticals in the aquatic environment, development and testing of ecologically relevant alternative endpoints for chronic toxicity testing.,

Baylor University Research Assistant Center for Reservoir and Aquatic Systems Research

Project: Development of site specific BSAFs for a Superfund site – utilizing stable isotope analysis and forensic chemistry toxicity to understand trophic transfer, testing of contaminated sediments. Analysis of pathway and degradation of pharmaceuticals moving through a constructed wetland. Toxicity testing of surface waters associated with harmful algae blooms. Artificial stream study of impact of nutrients and triclosan, maintaining organisms for culture and testing under current Baylor IUCUC policies.

Baylor University Teaching Assistant Department of Environmental Science

Courses: An Introduction to Environmental Analysis, Fundamentals of Ecotoxicology Laboratory, Introduction to Environmental Health (selected lectures), Seminar on Environmental Topics (selected lectures)

Presentations

PRIMO – Long Beach CA. 2011. *Poster Presentation:* Examining the importance of model organism and endpoint selection during environmental assessments of pharmaceuticals with multiple MOAs.

SOT National Meeting – Washington DC 2011; *Poster Presentation:* Comparative Responses to Diphenhydramine in Two Fish Models

SETAC North America Meeting, Portland, OR 2010 *Platform Presentation:* The Development of Probabilistic Based Data-Derived Uncertainty Factors for Ecotoxicology; *Poster Presentation:* Assessment of Diphenhydramine Effects on Aquatic Organisms; *Poster Presentation:* An Initial Probabilistic Ecological Hazard Assessment of Oil Spill Dispersants and Surface Cleaning Agents Approved for Use by the US EPA.

SETAC Europe Meeting Seville, Spain, 2010 *Platform Presentation:* Towards Prioritization of Pharmaceutical Hazards to Fish; *Poster Presentation:* Chemical Toxicity Distributions and the Threshold of Ecotoxicological Concern In The Context Of REACH

SOT National Meeting Salt Lake City, 2010. *Poster Presentation:* Leveraging Mammalian Pharmaceutical Data to Predict Chronic Fish Responses to Pharmaceuticals

SETAC North American Meeting New Orleans, LA 2009 *Platform Presentation*: Probabilistic Assessment of Mammalian Pharmacological Data to Estimate Potential Ecological Risk of Pharmaceuticals in Fish; *Poster Presentation*: Mammalian Pharmacological Data as a Screening Tool to Prioritize Compounds for Studies of Alternative Chronic Endpoints in Fish

SOT – Gulf Coast Regional Meeting, Austin, TX 2009 *Poster Presentation:* Using Mammalian Pharmacological Data as a Screening Tool to Prioritize Compounds for Ecotoxicological Studies in Fish

ACS National Meeting, Chemical Toxicity Division Special Session - Advances in Aquatic Toxicology: Alternative Non-traditional Endpoints. Washington, DC 2009 *Invited Platform Presentation:* Using probabilistic approaches to examine alternative endpoints in fish: application to human pharmaceuticals

SETAC South Central Regional Meeting, San Marcos, TX 2009 *Platform Presentation:* Probabilistic Assessment of Mammalian Pharmacological Data to Estimate Potential Ecological Risk of Pharmaceuticals in Fish

SETAC North America Meeting, Tampa, FL 2008 *Poster Presentation:* Comparative Ecotoxicology of Pharmaceuticals: A Screening Approach for Performing Chemical Mode-of-Action Studies in Fish.

SETAC North America Meeting, Montréal, Quebec, Canada 2006 *Poster Presentation:* A Sediment Toxicity Evaluation of Three Large River Systems.

SETAC National Meeting, Baltimore, Maryland 2001 *Poster Presentation*:
SETAC South Central Regional Meeting Stillwater, Oklahoma 2001 *Poster Presentation*:
SETAC National Meeting, Nashville, Tennessee 2000, *Poster Presentation:*

Honors and Grants

National Research Council (NRC) of the National Academies Post Doctoral Fellowship Award: US Environmental Protection Agency, Duluth, Minnesota.
SETAC Pharmaceutical Advisory Group Technical Workshop "20 question exercise on pharmaceuticals and personal care Products in the environment" Invited Participant; North American Student Representative
Pollutant Responses in Marine Organisms (PRIMO) International Meeting: Student Travel Award – $1250
Society of Toxicology (SOT) Student Travel Award Grant - $1000
TCEQ-TEHI Grant: Defining Biota-Sediment Accumulation Factors for the San Jacinto River Waste Pits, Texas, 2009 - $249,890
Environmental Laboratory Teaching Award 2008-2009, Baylor University Department of Environmental Science
ACS – TOXI Student Travel Award, 2009 - $750
SETAC South Central Regional Meeting 2009, First Place Platform Presentation - $600
SETAC South Central Regional Meeting 2001, Second Place Poster Presentation - $100
SETAC 2001 Student Travel Award Winner $375
UHCL TQM-AAA program 1999, "Ruggedized computer and communications support for environmental biology teaching and research in the field" $9688
Miami University Graduate Travel workshop 1998, "Investigations of genetic effects of pollution on fish from the Amazon" $4500
Inducted into βββ Biological Honor Society 1996
βββ Biological Honor Society Undergraduate Research Award 1997, "Evaluation of Sockeye Salmon, Oncorhynchus nerka, from the Wood River System, Alaska, using restriction length fragment polymorphism (RFLP) DNA analysis." $900

Relevant Coursework

Baylor University: Ecological Risk Assessment, Advanced Ecosystem Data Analysis, Toxicology, Advanced Environmental Chemistry, Advanced Cell Biology, Human Health Risk Assessment, Immunology, Molecular Genetics, Isotope Geochemistry.

Graduate Courses: Ecological Toxicology, Pollution Biology, Environmental Remediation and Biotechnology, Environmental Geology, Geochemistry of the Sediment/Surface Water Interface, Conservation Biology, Population Ecology, Tropical Rainforest Ecology, Genetics of Populations and Ecosystems, Animal Physiological Ecology, Evolution and Biosystematics, Research Methods in Environmental Science, Applied Statistical Methods,

Undergraduate Courses: Ichthyology, Natural History of Vertebrates, Field Vertebrate Biology, Ornithology, Evolution, Biochemistry, Cell Biology, Genetics, Animal Physiology, Organic Chemistry

Past Employment and Research Experience

United States Environmental Protection Agency Biological Services Contractor
The McConnell Group, Inc., UES Services Inc., SoBran Inc. (6/03-8/07)
Toxicologist / Culturist of Testing Organisms

Duties as a Toxicologist: Conduct toxicity tests on field-collected water and sediment samples, conduct exposure and toxicity tests using various species and chemicals, necropsy fish for specific tissues including liver, brain, gallbladder, and gonads, develop and standardize new and novel toxicity testing methods, manage and update 100 different lab standard operating procedures as well as write new SOPs as necessary, conduct QA/QC audits on equipment, culture animals, and various water supplies used in testing, conduct molecular biomarker tests, including COMET assay, prepare reports upon completion of each project, write scientific journal articles based on research conducted, novel testing methods, method adaptation or innovation, write and prepare presentations for national and regional meetings, including data analysis and production of charts and graphics.

Specific Projects and Testing: EDC exposure, CAFO exposure, experimental stream mesocosm exposure, nanopowder exposure, EMAP-GRE sediment, environmental estrogen exposure, zebrafish strain genetic variability exposure, Hyalella azteca strain variability, Western Corn Rootworm (WCR) resistance to genetically modified crops, Field sediment and remeadiated sediment exposure and bioaccumulation, Chlorophyll a analysis, fish embryo-larval tests.

Duties as Culturist: Maintain cultures of freshwater fish Zebrafish (*Danio rerio),* Fathead Minnows (*Pimephales promelas*), Bluegill Sunfish, *Lepomis macrochirus,* White Sucker, *Catostomus commersonii,* and Rainbow Trout, *Oncorhynchus mykiss*, various freshwater aquatic invertebrates, including *Hyalella azteca, Daphnia magna, Daphnia pulex, Ceriodaphnia dubia, Lumbriculus variegates, and Chironomus tentans*, marine mollusks, *Mercenaria mercenari* and *Mytilus edulis*, and the terrestrial western corn rootworm, *Diabrotica virgifera,* including feeding, including feeding, cleaning, water changes, and husbandry, and processing through various life stages.

Field Crew Chief / Field Biologist / Ichthyologist

Projects: Environmental Monitoring and Assessment Program (EMAP) - Great Rivers Ecosystems, Temporally-Integrated Monitoring of Ecosystems, Landscape Genetics of the Great and Little Miami Watersheds, Little Miami River Assessment

Duties as Ichthyologist: Identify all fish species collected in the field or from voucher specimens, collect fish using various methodologies including: backpack and boat based electroshocking equipment

Duties as Crew Chief: Manage day to day activities of field crew (3-6 people), equip and train crews for various projects, site logistics and trip planning, purchase equipment and supplies for field sampling, onsite QA/QC to ensure correct methods are followed in the field, maintain crew safety, security, health, and morale, assess meteorological and limnological conditions, communicate with landowners and general public about crew activities, maintain communication with supervisors and principle investigators.

Duties as Field Biologist: Operate and maintain boats and other vehicles used in field collection, collect various environmental samples, including: sediment, water chemistry, stream flow characteristics, rapid habitat bioassessments, riparian habitat assessment, collect biological samples, including: fish and benthic macroinvertebrates

Molecular Biologist

Duties: gel electrophoresis, DNA identification and sequencing, and using and maintaining various computers and equipment used in these processes.

Benthic Macroinvertebrate Biologist

Duties: sorting and general identification of benthic macroinvertebrates from previously collected field samples.

University of Houston – Clear Lake, (9/99 – 12/02).

Master's Research: Use of allozyme starch gel electrophoresis to analyze genetic variation in two species of fish, *Cichla temensis* and *Serrasalmus rhombeus,* from the Rio Negro, Amazonas, Brazil, analysis of field collected tissues, water, and sediment for metal concentrations via ICP-MS, comparison of metal concentrations and genetic variation in fish,

Research Project: Analysis of metal binding proteins using gel filtration chromatography, silver saturation assay, and polyacrylamide gel analysis for grass shrimp exposed to various combinations of four metals (Cd, Cu, Hg, Pb).

Research Duties: planning of field research in extreme remote location, site logistics and travel planning, collection of sediment, water, and tissue samples and live organisms from the field, water quality testing, rapid habitat bioassessment maintain and use laboratory equipment, manage research data, data entry and analysis

Teaching Assistant/Instructor of Record - Comparative Animal Morphology, Field Biology and Methods of Environmental Toxicology Duties: lecture and instruction of students, preparation for field and lab studies, instruction of students on proper methods and techniques, instruction on water chemistry, seining for fish and invertebrates, identification of animal and plant species, and mark/recapture methods, learning, teaching, and then performing several EPA method toxicity tests for effluent and receiving waters toxicity test (fresh and salt water) and sediment toxicity tests.

Miami University (8/97- 5/99)

Teaching Assistant - Introductory Biology Laboratory, Principles of Human Physiology, Animal Physiological Ecology Duties: preparation of lab and instruction of students.

Field and Laboratory Equipment Experience

Hach Hydrolab, Hach turbidity meter, Smith Root 5.0 GPP boat based electroshocker unit, backpack based electroshocking units, Inductively Coupled Mass Spectrometer, Cold vapor mercury analysis, Gel Filtration Chromatography, pH meters, DO meters, Conductivity meter, Ammonia meter, Hardness, alkalinity titration units, Starch and acrylamide gel electrophoresis for genetic analysis, DNA sequencer, PCR thermocycler and PCR Cleanup Robot, Flow-through aquarium setups, Dosing pumps, Super-Q ultra pure water unit, Environmental chambers, KOMET program for DNA damage analysis, Spectrophotometers, C-18 Columns for TIE testing (toxicity identification evaluation), Various lab computers, Frigid Unit living streams for rearing, breeding, and growing fish

Professional Membership:

Society of Environmental Toxicology and Chemistry (SETAC) (1999-Present)

American Fisheries Society (2006-Present)

American Chemical Society (2009) Chemical Toxicity Division

Society of Toxicology (SOT) (2010)

Computer Experience

MS Office: Word, Excel, PowerPoint, Access, FrontPage. Minitab Statistical Software. Reference Manager. Quicken, General Internet applications, ArcView (GIS software – through two day-long seminars)

Committees and Volunteering

Baylor University – Invitation to Excellence (I2E) Science Program – Mock National Security Emergency Response. Risk Assessment; Human and Ecological Health group leader and evaluator of potential undergraduates interested in Environmental Science

University of Houston – Clear Lake Society of Environmental Toxicology and Chemistry Student Chapter: (UHCL-SETAC), President, student government representative, events and fundraising coordinator (1999 to 2002), Duties included organizing and attending meetings and functions as well as community involvement and fund raising.

University of Houston - Clear Lake Facilities and Resource Committee (University budget and funding)– student representative (8/01-8/02) and SACS (Southern Association of Colleges and Schools) accreditation steering committee - graduate student representative (8/00 to 5/02). Duties for both committees involved attending and participating in meeting, as well as the dissemination of information about committee business to the students, as a voting member of the committee