

JONE CORRALES, Ph.D.

CONTACT INFORMATION

Baylor University – Baylor Sciences Building
Department of Environmental Science
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Waco, TX 76706
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EDUCATION

Postgraduate

Postdoctoral Fellow, BAYLOR UNIVERSITY, Waco, TX

Department of Environmental Science

Adviser: Prof. Bryan W. Brooks

Time of appointment: Dec 2013 – Jan 2016

Comparative aquatic toxicology studies towards in vitro to in vivo extrapolation and green chemistry: Elucidation of sustainable molecular design guidelines for next-generation molecules with reduced hazard of oxidative stress responses in fish models

Postdoctoral Fellow, UNIVERSITY OF MISSISSIPPI, University, MS

Department of Pharmacology – Environmental Toxicology Research Program

Adviser: Prof. Kristine Willett

Time of employment: Jan 2012 – Oct 2013

Fish toxicity studies: Multigenerational epigenetic, transcriptomic, reproductive, and developmental effects of benzo(a)pyrene in zebrafish

Postdoctoral Fellow, UNIVERSITY OF MISSISSIPPI, University, MS

National Institute of Undersea Science and Technology

Advisers: Profs. Kristine Willett and Marc Slattery

Time of employment: Jun 2010 – Jan 2012

Marine toxicology: Shotgun proteomics to study the effects of environmental stressors such as the Deepwater Horizon oil spill in marine organisms such as oysters and seagrass

Ph.D.

NORTH CAROLINA STATE UNIVERSITY, Raleigh, NC

College of Veterinary Medicine

Doctor of Philosophy, Comparative Biomedical Sciences, Infectious Disease

May 2008, Overall GPA: 3.9

Doctoral Dissertation Title: Antimicrobial Polypeptides, Piscidins and Histone-Like Proteins, in Important Aquacultured Fish and the Effect of Nutrition on their Expression and Susceptibility to Infection in Hybrid Striped (Sunshine) Bass (*Morone saxatilis* ♂ x *M. chrysops* ♀)

B.S.

UNIVERSITY OF MIAMI, Coral Gables, FL
 Bachelor of Science, Marine Science & Biology, Minor: Chemistry
 December 1997, Overall GPA: 3.4
 University of Miami General Honors
 Departmental Honors in Marine Science

PROFESSIONAL EXPERIENCE

- Jan 2016 BAYLOR UNIVERSITY, Department of Environmental Science
 Present **Research Scientist**
 Manage research laboratory in a leadership position; assist advising graduate and undergraduate students; conduct comparative aquatic toxicology studies using fish models towards the design of safer chemicals and the advancement of green chemistry; elucidate perturbations of contaminants of emerging concern (CEC) on aquatic ecosystems at various levels of biological organization.
Reference: Prof. Bryan Brooks, Bryan_Brooks@baylor.edu
 One Bear Place #97266, Waco, TX 76798-7266; (254) 710-6553
- June 2009 GROVE FARM FISH & POI LLC DBA HUKILAU FOODS
 June 2010 **Aquatic Animal Health Consultant**
 Provided aquaculture health screen services to ensure the highest quality of healthy moi, Pacific threadfin, production for Hukilau Foods, the first open ocean farm in the U.S. currently producing 900,000 pounds of fish per year; performed biopsies including gill clips, fin clips, skin scrapes, internal organ tissue squashes; prepared as needed bacterial cultures, tissues for histology, histopathological evaluations of tissues prepared by the University of Hawai'i; advised on best management practices to enhance optimal fish health.
Reference: Ryan Murashige, Hatchery Manager, rmurashige@hukilaufoods.com
 P.O. Box 662069, Lihue, HI 96766; (808) 841-4956
- May 2009 HAWAII PACIFIC UNIVERSITY, Hawai'i Loa Campus
 June 2009 **Adjunct Faculty**
 Taught university level introductory biology; lectured in the core principles of biology; offered students intending to major in a field related to biological science a basic primer of modern biology pertaining to the structure and function of cells and organisms; covered major topics such as biochemistry and molecular biology, anatomy and physiology of cells, cell-membrane structure and function, the

descriptive biophysics of diffusion and osmosis, the redox processes of cellular respiration and photosynthesis, and the organismic biology of animals and plants.

Reference: Brenda A. Jensen, bjensen@hpu.edu

45-045 Kamehameha Highway, Kaneohe, HI, 96744-5297; 808-236-5853

Apr 2009 UNIVERSITY OF HAWAII, Hawai'i Institute of Marine Biology

Sep 2009 **Volunteer**

Participated in studies of the neuroendocrine system which regulates development and physiology in fish and coordinates their interactions with their environment. These studies are based on the idea that reproduction, development, immune function and environmental adaptation are regulated through the orderly release of hormones by the neuroendocrine system, which integrates information from genes and the environment.

Reference: E. Gordon Grau, grau@hawaii.edu

2525 Correa Road, HIG 238, Honolulu, HI 96822; 808-956-7031

Jan 2003 NORTH CAROLINA STATE UNIVERSITY, College of Veterinary Medicine

Jan 2008 **Manager of Fish Facilities**

Managed fish facilities for Professor Edward J. Noga; maintained fish facilities for scientific research focused on studying stress and immunity of fish especially aquacultured species; transported fish from farms to university facilities; duties included interviewing, hiring, training, and supervising fish technicians; oversaw husbandry duties such feeding fish, water quality testing, tank cleaning, observing changes in behavior; made diagnoses and treated fish.

Reference: Edward J. Noga, ed_noga@ncsu.edu

Current address: South Eastern Aquatechnologies, Inc., 250 N.E. 20th Street, #523, Boca Raton, FL 33431; 561-392-1945

Jun 2001 MIAMI-DADE COUNTY DEPARTMENT OF ENVIRONMENTAL

May 2002 RESOURCES MANAGEMENT (DERM)

Biologist I, Coastal Resources Section, Natural Resources Division

Enforced provisions of the Miami-Dade County Environmental Protection Ordinance, specifically Chapter 24-58.1, which estates that a Class I permit is required for any kind of work (dredging, filling, seawall repair, dock construction, installation of boatlifts, etc.) in, on, over, or upon any tidal waters, bay bottom lands or in wetlands supporting halophytic vegetation; enforced and issued Class I permits for the trimming, cutting, and alteration of mangrove trees.

Reference: Lee Hefty, hefty@miamidade.gov

701 NW 1st CT, Miami, FL 33136; 305-372-6575 or 305-372-6789

Oct 1998 MIAMI-DADE COUNTY DEPARTMENT OF ENVIRONMENTAL

Jun 2001 RESOURCES MANAGEMENT (DERM)

Pollution Control Inspector I, Compliance Section, Enforcement Division

Investigated public complaints impacting the environment and infringing Chapter 24, Miami-Dade County Environmental Protection Ordinance; inspected, tested, and evaluated facilities and activities potentially violating the Ordinance.

Reference: John Farina, farini@miamidade.gov

701 NW 1st CT, Miami, FL 33136; 305-372-6979 or 305-372-6789

Feb 1998 UNIVERSITY OF MIAMI, University of Miami Experimental Hatchery
Sep 1998 **Hatchery Assistant**

Reared juvenile red drum, *Sciaenops ocellatus*, as part of the Red Drum Project directed by the Florida Department of Environmental Protection (FDEP) to be released into Biscayne Bay, Florida; conducted daily water quality analysis, cleaned tanks to minimize poor water quality and optimize conditions to prevent infection, fed fish, graded fish according to size, and tagged fish prior to release; monitored percentage of viable egg production of sea trout; assisted in the aplysia (sea hare) lab rearing and preparing animals for shipment across the country and overseas for neurological research; assisted with morphological measurements of billfish larvae.

Reference: Thomas Capo, tcapo@rsmas.miami.edu

4600 Rickenbacker Cswy, Virginia Key, FL 33149

305-361-4946 or 305-361-4000

Oct 1995 UNIVERSITY OF MIAMI, Rosentiel School of Marine and Atmospheric Science
Sep 1998 (RSMAS)

Research Student

Measured microscopic features of fish tissues such as scales and spleen melomacrophage aggregates in pinfish, *Lagodon rhomboides*, gray snapper, *Lutjanus griseus*, sea bream, *Archosargus rhomboidalis*, white grunt, *Haemulon plumieri*, and bluestriped grunt, *Haemulon sciurus*; used data as bioindicators of various sites in Biscayne Bay, FL; assisted maneuvering boats; collected and identified fish in the field; extracted blood and dissected fish; prepared samples for histology; conducted total protein and serum lysozyme assays and protein electrophoresis; studied abnormal scale growth (most prevalent morphological abnormality in Biscayne Bay); collaborated in experimental designs and data analysis and interpretation; published (Corrales, J., L.B. Nye, S. Baribeau, N.J. Gassman & M.C. Schmale. 2000. Characterization of scale abnormalities in pinfish, *Lagodon rhomboides*, from Biscayne Bay, Florida. *Env. Biol. Fish.* 57: 205-220).

Reference: Michael C. Schmale, mschmale@rsmas.miami.edu

4600 Rickenbacker Cswy, Virginia Key, FL 33149

305-361-4147

PUBLICATIONS

Peer-Reviewed Articles

1. **Corrales J**, Kristofco LA, Steele WB, Saari GN, Kostal J, Williams ES, Mills M, Gallagher EP, Kavanagh TJ, Simcox N, Shen LQ, Melnikov F, Zimmerman JB, Voutchkova-Kostal AM, Anastas PT, and Brooks BW (2016) Towards the design of less hazardous chemicals: Exploring comparative oxidative stress in two common animal models. *Chemical Research in Toxicology* (In Review)
2. Alharthy KM, Albaqami FF, Thornton C, **Corrales J**, and Willett KL (2016) Mechanistic evaluation of benzo[a]pyrene's developmental toxicities mediated by Cyp19a1b inhibition. *Toxicological Sciences* (Accepted)
3. **Corrales J**, Kristofco LA, Steele WB, Yates BS, Williams ES, and Brooks BW (2015) Global assessment of bisphenol a in the environment: review and analysis of its occurrence and bioaccumulation. *Dose-Response: An International Journal*. DOI: 10.1177/1559325815598308)
4. Fang X*, **Corrales J***, Thornton C, Clerk T, Scheffler BE, and Willett KL (2015) Transcriptomic changes in zebrafish embryos and larvae following benzo(a)pyrene exposure. *Toxicological Sciences*; doi: 10.1093/toxsci/kfv105. *Authors contributed equally.
5. **Corrales J**, Fang X, Thornton C, Mei W, Barbazuk WB, Duke M, Scheffler BE, and Willett KL (2014) Effects on specific promoter DNA methylation in zebrafish embryos and larvae following benzo[a]pyrene exposure. *Comparative Biochemistry and Physiology, Part C* 163: 37–46
6. **Corrales J**, Thornton C, White M, and Willett KL (2014) Multigenerational effects of benzo[a]pyrene exposure on survival and developmental deformities in zebrafish larvae. *Aquatic Toxicology* **148**: 16-26.
7. Fang X, **Corrales J**, Thornton C, Scheffler BE, and Willett KL (2013) Global and gene specific DNA methylation changes during zebrafish development. *Comparative Biochemistry and Physiology, Part B* **166**: 99–108
8. Slattery M, Ankisetty S, **Corrales J**, Marsh-Hunkin KE, Gochfeld DJ, Willett KL, and Rimoldi JM (2012) Marine Proteomics: A critical assessment of an emerging technology. *Journal of Natural Products* **75**: 1833-1877
9. **Corrales J** and Noga EJ (2011) Effects of feeding rate on the expression of antimicrobial polypeptides and on susceptibility to *Ichthyophthirius multifiliis* in hybrid striped bass (*Morone saxatilis* ♂ x *M. chrysops* ♀). *Aquaculture* **318**: 109-121
10. Noga EJ, Ullal AJ, **Corrales J**, and Fernandes JMO (2011) Antimicrobial polypeptide host defense to aquaculture: Exploitation of downregulation and upregulation responses. *Comparative Biochemistry and Physiology, Part D* **6**: 44-54

11. Park NG, Silphaduang U, Moon HS, Seo JK, **Corrales J**, and Noga EJ (2011) Structure-activity relationships of piscidin 4, a piscine antimicrobial peptide. *Biochemistry* **50**: 3288-3299
12. **Corrales J**, Mulero I, Mulero V, and Noga EJ (2010) Detection and quantification of antimicrobial peptides related to piscidin 4 in important aquacultured fish. *Developmental and Comparative Immunology* **34**: 331-343
13. **Corrales J**, Gordon WL, and Noga EJ (2009) Development of an ELISA for quantification of the antimicrobial peptide piscidin 4. *Fish and Shellfish Immunology* **27**: 154-163
14. **Corrales J**, Ullal A, and Noga EJ (2009) Lateral line depigmentation (LLD) in channel catfish, *Ictalurus punctatus* (Rafinesque). *Journal of Fish Diseases* **32**: 705-712
15. **Corrales J**, Nye LB, Baribeau S, Gassman NJ, and Schmale MC (2000) Characterization of scale abnormalities in pinfish, *Lagodon rhomboides*, from Biscayne Bay, Florida. *Environmental Biology of Fishes* **57**: 205-220

Manuscripts in Preparation

1. **Corrales J** and Brooks BW. Examining fish immune adverse outcome pathways and alternative endpoints of relevance to aquatic toxicology. (In preparation)
2. McRae N, **Corrales J**, Kristofco LA, Saari GN, Burket SR, Glover C, Gaw S, and Brooks BW. Effects of the nonsteroidal anti-inflammatory drug, diclofenac, in zebrafish and fathead minnow: oxidative stress and behavior. (In preparation)
3. Saari G, Haddad SP, Chambliss CK, **Corrales J**, and Brooks BW. Acute and chronic effects of diltiazem in fathead minnow (*Pimephales promelas*) across gradients of dissolved oxygen. (In preparation)
4. Steele WB, Kristofco LA, **Corrales J**, and Brooks BW. Comparative behavioral toxicology of two fish models. (In preparation)
5. **Corrales J**, Dailey M, Willett KL. Differences in the proteome of seagrasses from the Mississippi-Alabama coast during and after the Deepwater Horizon oil spill. (In preparation)
6. **Corrales J**, Thornton C, White M, Willett KL. Multigenerational effects of benzo(a)pyrene exposure on reproduction and gonad development in zebrafish larvae. (In preparation)

Invited Talks

1. **Bayou Preservation Association Symposium, Houston, TX, October 2016.** "Emerging water quality issues – challenges on the horizon we have not addressed yet".
2. **Environmental Health Science Program, Baylor University, Waco, TX, March 2015.** "Evaluating stressor responses in aquatic organisms."
3. **Department of Biological Sciences, California State University Long Beach, Long Beach, CA, February 2015.** "Evaluating stressor responses in aquatic organisms."

4. **Department of Environmental Science, Baylor University, Waco, TX, October 2013.**
“Evaluating stressor responses in aquatic organisms.”
5. **Department of Pharmacology, University of Mississippi, Oxford, MS, November 2011.**
“Discovery proteomics in marine organisms: A tool to monitor the effect of environmental stressors on biological function and fitness.”

Conferences (most recent)

1. Steele WB, Kristofco LA, **Corrales J**, Brooks BW. Comparative behavioral toxicology of two fish models. Annual Meeting of the Society of Environmental Toxicology and Chemistry – Europe, 22-26 May 2016, Nantes, France.
2. **Corrales J**, Kristofco LA, Steele WB, Williams ES, Mills M, Gallagher EP, Kavanagh TJ, Shen LQ, Melnikov F, Kostal J, Voutchkova-Kostal A, Anastas P, Brooks BW. Does a fish model matter? Comparative toxicology of oxidative stress toxicity in zebrafish and fathead minnows. Annual Meeting of the Society of Toxicology, 13-17 March 2016, New Orleans, LA.
3. Steele WB, Kristofco LA, **Corrales J**, Mills M, Williams ES, Shen LQ, Kostal J, Voutchkova-Kostal A, Anastas P, Kavanagh TJ, Gallagher EP, Brooks BW. Towards less hazardous industrial chemicals: Comparative behavioral toxicology of two common fish models. Annual Meeting of the Society of Toxicology, 13-17 March 2016, New Orleans, LA.
4. Alharthy K, Thornton C, **Corrales J**, Willett KL. Estradiol co-exposure rescues CERTAIN benzo[a]pyrene- and CYP19a1b knockdown- mediated developmental phenotypes in zebrafish. Annual Meeting of the Society of Toxicology, 13-17 March 2016, New Orleans, LA.
5. **Corrales J**, Kristofco LA, Steele WB, Williams ES, Mills M, Gallagher EP, Kavanagh TJ, Simcox N, Shen LQ, Beach E, Melnikov F, Kostal J, Zimmerman JB, Voutchkova-Kostal A, Anastas P, Brooks BW. Comparative toxicology of the zebrafish and fathead minnow models: Understanding oxidative stress toxicity to design less hazardous chemicals. Society of Environmental Toxicology and Chemistry – North America, 1-5 Nov 2015, Salt Lake City, UT.
6. Steele WB, Kristofco LA, **Corrales J**, Mills M, Williams ES, Shen LQ, Kostal J, Voutchkova-Kostal A, Anastas P, Kavanagh TJ, Gallagher EP, Brooks BW. Towards less hazardous industrial chemicals: Comparative behavioral toxicology of two fish models. Society of Environmental Toxicology and Chemistry – North America, 1-5 Nov 2015, Salt Lake City, UT.
7. Saari GN, Haddad SP, Chambliss K, **Corrales J**, Brooks BW. Acute and chronic effects of diltiazem in the fathead minnow (*Pimephales promelas*) across dissolved oxygen gradients. Society of Environmental Toxicology and Chemistry – North America, 1-5 Nov 2015, Salt Lake City, UT.
8. **Corrales J**, Kristofco LA, Steele WB, Williams ES, Mills M, Gallagher EP, Kavanagh TJ, Simcox N, Shen LQ, Beach E, Melnikov F, Kostal J, Voutchkova-Kostal A, Zimmerman JB, Anastas P, Brooks BW. Oxidative stress toxicity in zebrafish and

- fathead minnow: towards the design of safer chemicals. Society of Environmental Toxicology and Chemistry – Latin America, 7-10 Sep 2015, Buenos Aires, Argentina.
9. **Corrales J**, Kristofco LA, Steele WB, Yates BS, Williams ES, Brooks BW. Global assessment of bisphenol A in the environment: a review of sources, fate and bioaccumulation. Society of Environmental Toxicology and Chemistry – Latin America, 7-10 Sep 2015, Buenos Aires, Argentina.
 10. Saari G, Haddad S, Chambliss C, **Corrales J**, Brooks BW. Acute and Chronic effects of Diltiazem in Fathead Minnow (*Pimephales promelas*) under Gradients of Dissolved Oxygen. Presentation. Annual Meeting of the Society of Environmental Toxicology and Chemistry – South Central Regional Chapter, 28-30 May 2015, Lafayette, LA.
 11. **Corrales J**, Kristofco LA, Steele WB, Yates BS, Williams ES, Mills M, Gallagher EP, Kavanagh TJ, Simcox N, Shen LQ, Beach E, Melnikov F, Kostal J, Voutchkova-Kostal A, Zimmerman JB, Anastas P, Brooks BW. Oxidative stress toxicity a gateway for the design of safer chemicals using two model fish species: zebrafish and fathead minnow. Society of Environmental Toxicology and Chemistry – Europe, 3-7 May 2015, Barcelona, Spain.
 12. **Corrales J**, Brooks BW. Examining Immune Adverse Outcome Pathways and Alternative Endpoints of Relevance to Aquatic Toxicology and Ecological Risk Assessment. Society of Environmental Toxicology and Chemistry – North America, 9-13 Nov 2014, Vancouver, CA.
 13. Kristofco LA, **Corrales J**, Williams ES, Mills M, Gallagher EP, Kavanagh TJ, Simcox N, Shen LQ, Anastas P, Brooks BW. Environmental probabilistic hazard assessments of ToxCast Phase I and II data related to oxidative stress assays. EPA ToxCast Summit 29-30 Sep 2014, Research Triangle Park, NC.
 14. **Corrales J**, Dailey M, Ankisetty S, Slattery M, Willett KL. Seasonal proteomic profile in seagrass from the Gulf Islands National Seashore at the time of the Deepwater Horizon oil spill. Society of Environmental Toxicology and Chemistry – North America, 17-21 Nov 2013, Nashville, TN.
 15. Thornton C, **Corrales J**, Fang X, Whilte MB, Ballard L, Clerk T, Scheffler BE, Willett KL. Adverse outcomes in zebrafish following a parental benzo[a]pyrene exposure. Society of Environmental Toxicology and Chemistry – North America, 17-21 Nov 2013, Nashville, TN.
 16. Willett KL, Fang X, **Corrales J**, Thornton C, Wu W, Ballard L, Scheffer BE. Constitutive and benzo[a]pyrene-mediated changes in DNA methylation in zebrafish. Society of Environmental Toxicology and Chemistry – North America, 17-21 Nov 2013, Nashville, TN.
 17. Willett KL, Fang X, **Corrales J**, Thornton C, Clerk T, Ballard L, Scheffer BE. Epigenome and transcriptome analysis of zebrafish embryos and larvae following BaP exposure. The 2013 Aquatic Animal Models for Human Disease, 30 June – 3 July 2013, Milwaukee, MI.
 18. Willett KL, Thornton C, **Corrales J**, Fang X, White M, Mislán K. Benzo(a)pyrene exposure effects on reproductive success, development and transcriptome in zebrafish. Society of Toxicology, 10-14 March 2013, San Antonio, TX.

19. **Corrales** J, Dailey M, Willett KL. Differences in the proteome of seagrasses from the Mississippi-Alabama coast during and after the Deepwater Horizon oil spill. Society of Environmental Toxicology and Chemistry – North America, 11-15 Nov 2012, Long Beach, CA.
20. Thornton C, **Corrales** J, White M, Mislán K, Willett KL. Benzo(a)pyrene dietary exposure effects on reproductive success, sexual development, gene expression and DNMT enzyme activity in zebrafish. Society of Environmental Toxicology and Chemistry – North America, 11-15 Nov 2012, Long Beach, CA.

RESEARCH-RELATED SPECIALIZED COURSES

- Sep 14 – 19, 2012 Killifish Genome Annotation Workshop and Meeting, Mount Desert Island Biological Laboratory, ME – *coordinated by Andrew Whitehead*
The aim is to manually annotate the killifish genome. This workshop will provide excellent training in the analytical tools and approaches that lie at the forefront of bioinformatics and comparative genomics research while promoting cross-disciplinary collaborations.
- June 3 – Aug 3, 2006 Aquatic Animal Health and Disease, Hawai'i Institute of Marine Biology, HI – *coordinated by Teresa Lewis*
The objective was to understand the pathological processes and health management techniques relating to the etiology, diagnosis, and treatment of important aquatic animal diseases and to conduct individual student projects. Species found locally in Hawai'i were emphasized.
- June 7 – 18, 2004 Diseases of Warm Water Fish, University of Florida, FL
coordinated by Ruth Francis-Floyd
This two-week course focused on diagnosis and treatment of parasitic, bacterial, viral, nutritional and environmental diseases of warm water fish.
- July 23 – 25, 2003 Fish Health Management, North Carolina State University, NC
coordinated by Greg Lewbart
The course focused on principles of ornamental fish management.

PROFESSIONAL DEVELOPMENT COURSES AND SEMINARS

- Oct 13, 2014 Professional development webinar: Diseases of barramundi (Asian seabass) - developing good disease management strategies, *coordinated by The World Aquatic Veterinary Medical Association (WAVMA)*
Dr. Susan Gibson-Kueh discussed the economic significance of barramundi in the aquaculture industry, described pathogens that cause high mortalities to larvae, fry and adults, and identified good practice management strategies to prevent infection and disease.

- Sep 17, 2014 Professional development webinar: Environmental Extremes and In vitro-In vivo Scaling of Trifluralin Bioconcentration in Sheepshead Minnows (*C. variegatus*), *coordinated by The Health and Environmental Sciences Institute (HESI)*
Irv Schultz presented data on the bioaccumulation and clearance of trifluralin in sheepshead minnows.
- Sep 24, 2013 Faculty development workshop: Writing more effective grant proposals – *coordinated by the Office of Research and Sponsored Programs, University of Mississippi*
Mr. Jason Hale discussed strategies to write clear, crisp, to-the-point proposals.
- Sep 24, 2013 Faculty development workshop: Locating funding opportunities for grants – *coordinated by the Office of Research and Sponsored Programs, University of Mississippi*
Mrs. Helen Kiss presented internal and external sources for funding announcements including Pivot-COS.
- Sep 19, 2013 Faculty development workshop: Overview of budgeting for grant proposals – *coordinated by the Office of Research and Sponsored Programs, University of Mississippi*
Mrs. Lesha Agnew-Hampton discussed federal regulations, how to prepare a budget and what direct costs, indirect costs, indirect rate, cost share, fringe benefits, and participant support costs consist of.
- Oct 31, 2012 Faculty development seminar: Current trends in instructional technology – *coordinated by the Center for Excellence in Teaching and Learning, University of Mississippi*
Mr. Jimmy Ball, Deputy Chief Information Officer for Academic Computing, presented current instructional technology support services across universities.
- Oct 2, 2012 Faculty development seminar: Developing teaching portfolios for instructional improvements and career advancement – *coordinated by the Center for Excellence in Teaching and Learning, University of Mississippi*
The seminar was presented by Dr. Paul Quick, Coordinator of Faculty and TA Development/Adjunct Professor of English. Center for Teaching and Learning, University of Georgia.
- Sep 11, 2012 Webinar: 137th Meeting of the National Advisory Environmental Health Sciences Council – *coordinated by NIEHS*

The importance of using zebrafish to advance environmental health sciences will be discussed.

- Aug 13 – 15, 2012 Instructor Workshops, University of Mississippi, MS – *coordinated by the Graduate School and the Center for Excellence in Teaching and Learning*
The workshops discussed Bloom’s revised taxonomy of teaching and focused on teaching techniques such as team learning exercises (think-pair-share, role play, wikis), how to build an effective lecture, and using case studies & discussions. Rubrics and evaluation techniques were also discussed.
- Feb 17-18, 2012 Science Meeting, University of Mississippi – Making sense of the omics data deluge. Midsouth Computational Biology & Bioinformatics Society.
- Nov 29, 2011 Webinar: NIH Pathway to Independence Award (K99/R00) – *coordinated by NIH*
The panelists described in detail all aspects leading to grant submission from who is eligible, explaining the two parts (K99 and R00) of the award, duration of the award, administrative forms (budget), to scientific research strategy including significance, innovation, and approach.
- Spring, 2011 Campus Resources in Bioinformatics Series, University of Mississippi, MS
coordinated by John Bentley
The faculty discussed type of current resources to do statistical analysis on campus, the necessary transparency in the availability of bioinformatics resources, and the need to address the increasing demand of courses for students at both undergraduate and graduate levels.

RESEARCH AND PRACTICE EXPERTISE

Molecular biology and histopathology

Epigenetics: DNA methylation

Gene expression: transcriptomics (RNASeq), qRT-PCR

Protein quantification: Label-free LC-MS/MS proteomics, ELISA development, immunoblotting

Bioinformatics: omics data analysis, pathways analysis

Bactericidal assays and pathogenic challenges

Enzyme assays

Histology: Tissue preparation, microscopical morphometrics

Standard laboratory procedures

Common EPA and OECD protocols for regulatory applications

Mentoring and training of lab technician and undergraduate and graduate students

Protocol development for future general lab use

Aquaculture

Fish Disease Diagnosis and Treatment
 Management of fish facilities for research & stock enhancement program

Teaching

University level lectures – primary lecturer
 Veterinary medicine school lab lectures and exercises – assistant

Diving

Open Water, May 1995
 Advanced Diving, August 1996

Languages

Fluent in English, Spanish, and Basque

TEACHING EXPERIENCEBaylor University

Spring & Fall 2016	ENV 4344 Fundamentals of Toxicology (Immunotoxicology)
Summer 2016	Green Chemistry/Aquatic Toxicology Teacher Workshop, Phase II
Spring 2016	BIC 2447 Natural World II (Green Chemistry and Ecotoxicology)
Summer 2015	Green Chemistry/Aquatic Toxicology Teacher Workshop, Phase I

Hawai'i Pacific University*Department of Natural Sciences*

2009	BIOL 2050	General Biology I
2009	BIOL 2052	General Biology II

College of Veterinary Medicine, North Carolina State University

2007	VMC 953	Special Species Medicine
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MENTORSHIP EXPERIENCEGraduate Student Research Contribution

2014 –	Baylor University, Department of Environmental Science: Assisted in
Present	advising Lauren Kristofco, Ph.D. student; Gavin Saari, Ph.D. student; Baylor Steele, Ph.D. Student; Casan Scott, Ph.D. Student; Bridget Hill, Master Student.

- 2010 – 2013 University of Mississippi, Department of Pharmacology and Environmental Toxicology Research Program: Meghan Dailey, M.S.; Frank Booc, M.S.; Adam Hawkins, Ph.D.; and Khalid Alharty, Ph.D. student.

Undergraduate Student Research Supervision

- 2014 Baylor University, Department of Environmental Science: Nicholas Adams And Leah Botkin Baylor University Summer Science Research Program students; formulated a project for students and taught them all phases of scientific research from experimental design to laboratory experiments, molecular work, statistical analyses, and platform presentation preparation.
- 2012 Kathryn Mislán, School of Pharmacy Summer Fellowship Program
- 2011 – 2013 Mallory White, Honors College Thesis
- 2005 – 2007 Ashley Rawls, Undergraduate Research. Graduated with B.S. continued with Nurse Practitioner studies.
- 2004 – 2006 Sarah Miller, Undergraduate Research. Obtained B.S. and D.V.M.

SERVICE

Peer-Review

Journals: *Aquatic Toxicology, Critical Reviews in Toxicology, Ecotoxicology, Environmental Research, Environmental Science & Technology, Environmental Science and Pollution Research, Environmental Toxicology and Chemistry, Toxicological Sciences*

Professional Societies

- 2016 **Member**, Society of Environmental Toxicology and Chemistry (SETAC) Career Development Committee, Leadership Subcommittee; a committee responsible for developing and supporting efforts of career networking, leadership workshops, including special events focused on early career scientists, women in science, and senior scientist resources.

Institutional and Intramural Service

- Spring & Fall 2015 **Evaluator**, Invitation to Excellence, Baylor University; a special program designed for high-achieving high school seniors who are interested in fields of study such as Environmental Science. I served as an evaluator/moderator during an exercise that the students had to formulate a response plan to a hypothetical environmental disaster.
- 2014 **Member** and **Mentor**, FabFems.org, directory of the national database of women in science, technology, engineering and mathematics (STEM) professions who serve as role models for young women. The FabFems Project is led by the National Girls Collaborative Project.
- 2014 **Guest Speaker**, SciGirls Club “DreamBoards” at La Vega Intermediate School HP Miles Campus. Educational program led by Melissa Mullins, Environmental Education Specialist at Baylor University.
- 2011 **Participant**, Center for Ocean Sciences Education Excellence, Central Gulf of Mexico, Deepwater Horizon Oil Spill Research Forum
- 2011 – 2013 **Judge**, Mississippi Region VII Science Fair

Media

- 2016 **Guest**, National Public Radio KWBU Station of Waco, TX, Story on “At Baylor, High School Teachers Are Learning About Green Chemistry”, <http://kwbu.org/post/baylor-high-school-teachers-are-learning-about-green-chemistry>

International Service

- 2013 **Discussion Panel Member**, Lauro Ikastola – High School, Basque Country, Spain, Science Week, Session on ‘Day to Day Job Duties of a Research Scientist’