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Gerald A. Berry, Ph.D. – CV

Education

Florida Gulf Coast University – Fort Myers, Florida
BA in Biology, Minor in Chemistry June 2005
Graduated Cum Laude with GPA of 3.53 on a 4.0 scale

Florida International University – Miami, Florida
Ph.D. in Biology, July 2014
GPA of 3.67 on a 4.0 scale

Dissertation co-advisors

Fernando G. Noriega, Ph.D.
Professor
Department of Biological Sciences
Florida International University
Phone: 305-348 6632
E-mail: noriegaf@fiu.edu

John P. Berry, Ph.D.
Professor
Department of Chemistry and Biochemistry
Florida International University
Phone: 305-919 4569
E-mail: John.Berry@fiu.edu

Special training

- Sediment core extractions, employers. 10 hrs (2003)
- Geochemical analyses and stratigraphy, employers. 10 hrs (2003)
- Nutrient analyses (glycogen), laboratory professionals. 10 hrs (2003-2004)
- Boat field collections and water quality monitoring, field professionals. 15 hrs (2003-2004)
- Project design in ecology, teachers and assistants. 10 hrs (2004)
- Flow cytometry, laboratory professionals. 10 hrs (2007)
- Research vessel field collections, CTD operations, and sample treatments, field professionals. 15 hrs (2007)
- Mosquito rearing and invertebrate bioassays, laboratory professionals. 25 hrs (2009)
- Mosquito field collection and species identification (larval and adults),

- laboratory professionals. 10 hrs (2009)
- Water sample purification and method design (TLC, solid phase extraction, biotage, high pressure liquid chromatography), laboratory professionals. 20 hrs (2009-2010)
- Instrumentation design, troubleshooting, and repair (desiccators, aspirators, filtration apparatuses, biotage units, HPLC, mass spec), laboratory professionals. 30 hrs (2010-2012).
- Spectroscopic techniques (mass spec, IR, NMR), laboratory professionals. 20 hrs (2010-2013)
- Stable isotopes (metabolic pathway determination), laboratory professionals and advisors. 15 hours (2011-2014)
- DNA extraction/purification and PCR amplification for DNA sequencing, laboratory professionals. 15 hrs (2013)
- Statistical analyses (SPSS, SAS, Prism, Excel etc.), teachers and laboratory professionals. 20 hrs (2008-2014)
- Laboratory management (laboratory safety, waste processing, ordering, inventory, student training and supervising). 20 hrs (2012-2013)
- Teaching biology, teachers and assistants. 25 hrs (2007-2013)

**Professional
experience**

Research Assistant (2003-2004) – FGCU

Performed geochemical research including coring sediment samples in the Estero Bay area. Interpreted core facies to determine the coastal geomorphology of several sites in Southwest Florida using stratigraphy. Refined sediment samples to document the presence of calcium carbonate which offers a unique bivalve history of each stratigraphic layer. Conducted marine science research including oyster parasitism, artificial oyster reef/oyster in vitro propagation, and water quality monitoring. This data was instrumental in the Everglades restoration programs. Much of the data collected from the geochemical and marine science groups were later printed in the 2006 South Florida Environmental Report Appendix 12-5 in which I am acknowledged on page 7.

Research Assistant (2003-2004) – FGCU

Performed biochemical assays with glycogen derived from oysters collected in Estero Bay. Assays were refined and resulting data were later used to evaluate seasonal variations in glycogen levels and general ecosystem health.

Research Assistant (2004) – FGCU

Performed research in an ecological study that compared recovery rates, subsequent to fire disturbances, of native and exotic species. The effects of biological control agents after fire disturbance on invasive species, such as *Melaleuca*, was monitored and found to be more productive and less damaging than chemical and mechanical techniques.

Research Assistant (2004) – FGCU

Invented a technique for capturing marsh crabs outside of their migratory season without disturbing their unique burrow communities. Conducted a controlled biochemical experiment on the diets of several marsh crabs to track the nutrient flow of a detritus system. The findings concluded a different detritus input than mangrove leaf litter, contrasting to current literature, because of the excessiveness of nitrogen present. A bacterial source of nitrogen is thought to be responsible.

Research Assistant (2006) – FIU

Collaborated in a nutrient gradient study in the Atlantic on the research vessel Suncoaster. Tasks included collecting water samples, trolling, CTD operations, and sample preparation for subsequent laboratory analyses. Examined the abundances of cyanobacteria, *Synechococcus* and *Prochlorococcus*, as well as non-photosynthetic bacteria with flow cytometry. Calculated phosphate, ammonium, and nitrite concentrations from water samples using spectrophotometry. *Synechococcus* abundance was found to decrease as opposed to *Prochlorococcus* in lower nutrient waters due to the larger size of this cyanobacterium having less surface area relative to volume hindering the efficiency of nutrient uptake.

Research Assistant (2011-2012) – FIU

Collected field samples of mosquito larvae to determine species present at several breeding sites. *Aedes albopictus* was found to be the dominant species at all sites. An experiment to rear these in the laboratory has commenced but interestingly blood feeding has proven to be an issue.

Research Assistant (2007-2014) – FIU

A new assay was developed which allowed for the screening of 131 strains of cyanobacteria for mosquito larvicidal properties. A non-polar compound from *Leptolyngbya* was purified and completely characterized. This resulted in the discovery of a compound which houses the most pronounced mosquito larvicidal activity of any compound derived from algae to date. This discovery has potential use in environmentally friendly mosquito control strategies worldwide.

Teaching Assistant (2007–2013) – FIU

Teacher of Human Biology Laboratory and General Biology I & II Laboratory. Sections were taught at both MMC and BBC campuses.

Laboratory Manager (2011 – 2013) – FIU

Laboratory of Dr. John Berry (dissertation co-advisor) MSB 332

Adjunct Faculty (2015-2017) – Lone Star College System

Teacher of Anatomy and Physiology I & II and General Biology, lectures and laboratories.

AWARDS

Bright Future Scholarship (1999)

Teaching Assistantship (2007-2013)

Adjunct Teacher Award (2016)

PUBLICATIONS AND PRESENTATIONS

Gerald A. Berry, John P. Berry, and Fernando G. Noriega. Mosquito Larvicides from Cyanobacteria. (Poster). 79th Annual Meeting, American Mosquito Control Association. Atlantic City, N.J., February 24-28, 2013.

Gerald A. Berry, John P. Berry, and Fernando G. Noriega. Mosquito Larvicides from Cyanobacteria. (Oral Presentation) 14th Annual Biology Research Symposium. Miami, FL, January 28, 2012.

Gerald A. Berry, John P. Berry, and Fernando G. Noriega. Mosquito Larvicides from Cyanobacteria. (Oral Presentation) 33rd Annual Southeastern Phycological Colloquy. Miami, FL, October 15, 2011.

Gerald A. Berry, John P. Berry, and Fernando G. Noriega. Cyanobacteria Toxins: Novel Insecticides for Disease Vector control. (Poster). Joint Annual Meeting of the American Society of Pharmacognosy & the Phytochemical Society of North America. St. Petersburg, FL, July 10-14, 2010.

John P. Berry, Miroslav Gantar, Mario H. Perez, Gerald Berry, and Fernando G. Noriega. (2008) Cyanobacterial Toxins as Allelochemicals with Potential Applications as Algaecides, Herbicides, and Insecticides. *Marine Drugs*. Vol.6, 117-146.