

Curriculum Vitae – Joshua P. Kilborn, Ph.D.

Research Assistant Professor

University of South Florida
College of Marine Science
140 7th Avenue South, MSL 200-A
Saint Petersburg, FL 33701

Email: jpk@mail.usf.edu

Phone: (727) 553-3358

Fax: (727) 553-1189

EDUCATIONAL BACKGROUND

Ph.D. Marine Science – Concentration in Marine Resource Assessment, University of South Florida, College of Marine Science (2017)

B.S. Mathematics. Jacksonville University (2002)

Research: Differential equation models of HIV dynamics via CD4+ T cells (2001)

Thesis Project: Minimizing airline expenses for relocation of assets faced with natural disaster – A modeling projecting using the SIMPLEX method (2002)

Ph.D. DISSERTATION

Kilborn, J. P. 2017. Investigating the Marine Resources in the Gulf of Mexico at Multiple Spatial and Temporal Scales of Inquiry. *Graduate Theses and Dissertations*, University of South Florida, College of Marine Science. <http://scholarcommons.usf.edu/etd/7046>.

Summary: This work contained four substantive original research studies exploring: (1) A data simulation approach to testing a new multivariate clustering method for ecological datasets; (2) Using the Southeast Area Monitoring and Assessment Program (SEAMAP) fisheries-independent groundfish trawl-survey dataset to estimate groundfish community dynamics, and to assess the effects of dynamic habitat and environmental forcing on their organization (this topic was examined at multiple temporal and spatial scales and produced two studies); and (3) Developing a statistical framework to quantify the impacts of human pressures and climate variability on the structure and function of marine fisheries resources and ecosystem services in the greater Gulf of Mexico large marine ecosystem.

PEER-REVIEWED MANUSCRIPTS

- **Kilborn, J. P.**, M. Drexler, and D. L. Jones. 2018. Fluctuating fishing intensities and climate dynamics reorganize the Gulf of Mexico's fisheries resources. *Ecosphere* 9(11):e02487.10.1002/ecs2.2487
- **Kilborn, J. P.**, D. L. Jones, E. B. Peebles, and D. F. Naar. 2017. Resemblance profiles as clustering decision criteria: Estimating statistical power, error, and correspondence for a hypothesis test for multivariate structure. *Ecology and Evolution*; 7:2039-2057. <https://doi:10.1002/ece3.2760>.
- Tzadik, O. E., **J. P. Kilborn**, and R. S. Appeldoorn. 2017. Differential habitat use of reef fishes on a shelf-edge off La Parguera, Puerto Rico. *Bulletin of Marine Science*; 93(3):893-914.

SECURED FUNDING – REFERREED RESEARCH GRANTS

- National Oceanographic and Atmospheric Administration, Marine Fisheries Initiative (NOAA, MARFIN). Investigating multivariate ecological time-series models to improve our understanding and assessment of the Gulf of Mexico Large Marine Ecosystem (2017-2020). **Kilborn, J. P.** (PI, USF), M. Drexler (Co-PI, Ocean Conservancy). **\$524,106**

SECURED FUNDING – GRADUATE STUDENT SUPPORT

- National Oceanographic and Atmospheric Administration, National Marine Fisheries Service (NOAA, NMFS) Marine Resource Assessment Endowed Fellowship (2011-2018). **\$189,000**
- University of South Florida – College of Marine Science, Anne and Werner Von Rosenstiel Endowed Fellowship (2010-2011). **\$16,000**
- USF – College of Marine Science, Graduate Research Assistantship (2010-2011). **\$16,000**

TRAVEL GRANTS AWARDED

- University of South Florida. Student Government Conference Presentation Grant (2014-2016)
 - **\$750** for travel to ICES Annual Science Conference in Riga, Latvia (2016)
 - **\$750** for travel to GCFI 68th Conference in Panama City, Panama (2015)
 - **\$750** for travel to ICES Annual Science Conference in A Coruña, Spain (2014)
- Woods Hole Oceanographic Institute ICES Annual Science Conference Travel Award (2013)
 - **\$3,400** for travel to ICES Annual Science Conference in Reykjavik, Iceland
- USF – College of Marine Science, Dean Dixon Travel Award (2012)
 - **\$2,000** for travel to ICES Annual Science Conference in Bergen, Norway

INDEPENDENT CONTRACTING & CONSULTATIONS

- Ocean Conservancy, **Statistical Contractor** (2016)
 - Develop a multivariate statistical model for the Gulf of Mexico fisheries ecosystem
 - Document and present work in written publications and at international conferences
- Hawaii International Environmental Services (HIES), **Statistical Consultant** (2015)
 - Evaluate HIES's statistical power analysis of a long-term ecological monitoring (LTEM) program's ability to detect changes as defined in the LTEM program goals
 - Evaluate HIES's critical analysis of a LTEM program's sampling design and statistical methods with particular emphasis on the non-parametric and multivariate nature of the LTEM dataset
- University of South Florida – College of Marine Science. Dr. Gary Mitchum's Physical Oceanography Lab, **Research Assistant** (2014)
 - Project regarding the using sea surface height data from tide-gauges to estimate satellite altimeter drift and error
 - Theoretical statistical model verification
 - Model algorithm optimization and testing in MATLAB

TEACHING EXPERIENCE

- USF – College of Marine Science. *Special Topics in Biometry*, **Instructor** (Fall 2018, 2019); **Teaching Assistant** (Fall 2014: Dr. D. Jones, Instructor).
 - Graduate level course covering core concepts of univariate statistical analysis with an emphasis on ecological and biological datasets
 - Focus on students' development of experimental design, methods application, and interpretation of results
 - Additional focus on MATLAB software use and general coding practices
- USF – College of Marine Science. *Applied Multivariate Statistics*, **Instructor** (Spring 2018, 2019); **Teaching Assistant** (Fall 2013, Spring 2015: Dr. D. Jones, Instructor)
 - Graduate level course emphasizing hands-on analysis of large, high-dimensional marine ecological and environmental datasets using distribution-free methodologies
 - Focus on non-normal, highly skewed, and zero-inflated data and relevant analyses
 - Exploratory analysis, hypothesis testing (canonical analysis), detection of species-environmental relationships (direct gradient analysis), and spatial analysis are emphasized throughout the course
 - Extensive MATLAB software use throughout the course
- Fall Creek Elementary School – Ithaca, NY. **Title-I Mathematics Teaching Assistant** (1999)
 - Instructed individual special needs students (ages 5 to 7 years) in mathematics to achieve the high standards set by the Ithaca City School District and the State of NY
 - Developed and implemented new visual and hands-on methods of teaching the students introductory mathematical concepts
 - Maintained quarterly progress reports for each student in the program

BUSINESS EXPERIENCE

- *The Garden Produce Company*, Jacksonville, FL
Vice President of Administration (2007-2010)
 - Oversee Accounts Receivables, Accounts Payables, Human Resources, and Reception
 - Development of governance and logistical structures, and employee responsibilities
 - Research and purchase companywide insurance policies for all aspects of operations
 - Special emphasis on financial aspects of company operation and accounts reconciliation**Information Systems Manager** (September 2006-2010)
 - Responsible for all aspects of in-house computer systems
 - Maintenance and development of 2000+ customer database for companywide usage
 - Regulation of customer pricing structures and distribution
 - Manage all aspects of web-based online ordering system including customer training and technical support
- *Pitman Produce Company*, Jacksonville, FL
Territory Sales Manager (2004-September 2006)
 - Manager responsible for all facets of territory operations
 - Solicitation of new accounts
 - Development of price packages and service schedules based on daily market conditions

- Responsible for fostering long term partnership with all accounts
- Coordinate distribution and service for multi-unit, corporate accounts, operating throughout Florida
- Cultivate new line items and create sales base to redirect focus of the company profile
- *Southend Brewery & Smokehouse, Jacksonville, FL*
General Manager (2000-2004)
 - General Manager responsible for all facets of unit operations
 - Scheduling for up to 40 employees on a weekly basis
 - Hiring and training new employees
 - Ordering all food as well as all other inventoried items within restaurant
 - Handle all human resource functions on daily basis
 - Handle all day-to-day financial reporting and P&L analysis
 - Complete daily maintenance tasks within the building.
 - Supervise FL/GA Football Classic weekend event in which restaurant generates \$100K+ in sales over a two day period
 - Server and Bartender responsible for guest relations
- *City of Ithaca, Stewart Park Day Camp, Ithaca, NY*
Waterfront Director, Administrative Asst., Lifeguard, Counselor (1992-2000)
 - Camp counselor directly responsible for the safety of 15+ children ages 5 to 14 years
 - Lifeguard responsible for the safety on the water of all campers and staff participating in canoeing, sailing, and swimming activities
 - Waterfront Director responsible for overseeing and scheduling of the lifeguards, campers, and staff on the waterfront participating in all recreational activities
 - Administrative Assistant responsible for scheduling all activities for 14 camper groups (approximately 165 campers) ranging in ages from 5 to 14 years
 - Organized special activities for end of session involving the entire camp
 - Conflict resolution for campers and counselors

SPECIAL SKILLS

- Extensive knowledge of MATLAB, including the Fathom Toolbox for Ecological Statistics
- Unix-based, high-performance cluster computing
- Data simulation and testing for statistical methods development and optimization
- Working knowledge Adobe Illustrator, ArcGIS, C++, Cobol, Ecopath with Ecosim, ENVI, Fortran, IDL, R, and SEADAS
- Extensive knowledge of Microsoft Windows and Microsoft Office Suite products including Access, Excel, PowerPoint and Word
- Former certified Instructor for the National Association of Underwater Instructors, a leading agency in the world for training and continuing education for SCUBA diving
- Former certified Instructor for the Diver's Alert Network, a worldwide leader in diving safety preparedness training and response

HONORS & AWARDS

- **Kilborn, J. P.**, *Graduate Student Commencement Ceremony Speech*, University of South Florida Graduate Students' Spring Commencement Ceremony, USF Sun Dome, Tampa, FL (2017).
- **Outstanding Mathematics Student of the Year**. Jacksonville University (2000)
 - Awarded by Mathematics dept. faculty to most promising student for the academic year
- **Eagle Scout Award**. Troop 12, Baden Powell Council, Boy Scouts of America (1995)

PRESENTATIONS

- **Kilborn, J. P.**, M. Drexler, and D. L. Jones. 2018. Using the Ecosystem-Level Management-Indicator Selection Tool to Explicitly Model Temporal Trends and Partition the Variability for Fisheries Resources in a Large Marine Ecosystem. *American Fisheries Society – Annual Meeting*, Atlantic City, NJ.
- **Kilborn, J. P.**, M. Drexler, and D. L. Jones. 2017. An Ecosystem-Level Management-Indicator Selection Tool for the Distillation of Complex Multivariate Datasets: Gulf of Mexico Case Study. *NOAA Southeast Regional Office – Brown Bag Lunch Seminar Series*, St. Petersburg, FL.
- **Kilborn, J. P.**, M. Drexler, and D. L. Jones. 2017. Describing Three Decades of Fisheries Regime States in the Gulf of Mexico Using an Ecosystem-Level Redundancy Analysis Approach. *International Council for the Exploration of the Sea – Annual Science Conference*, Ft. Lauderdale, FL.
- **Kilborn, J. P.**, M. Drexler, and D. L. Jones. 2017. Describing Three Decades of Fisheries Regime States in the Gulf of Mexico Using an Ecosystem-Level Redundancy Analysis Approach. *American Fisheries Society – Annual Meeting*, Tampa, FL.
- **Kilborn, J. P.**, M. Drexler, and C. Ridings. 2016. An ecosystem-level redundancy analysis decision tool to inform the integrated ecosystem assessment indicator selection process. *International Council for the Exploration of the Sea – Annual Science Conference*, Riga, Latvia.
- **Kilborn, J. P.**, O. E. Tzadik, and R. S. Appeldoorn. 2015. Differential habitat use and reef-fish community organization among the reef-top and slope morphology within a single shelf-edge ecotone in La Parguera, Puerto Rico. *Gulf and Caribbean Fisheries Institute 68th Conference*, Panama City, Panama.
- **Kilborn, J. P.**, D. L. Jones, and E. B. Peebles. 2014. Detection of unique benthic-demersal fish communities in the high diversity West Florida Shelf ecosystem and the impact of environmental drivers. *International Council for the Exploration of the Sea – Annual Science Conference*, A Coruña, Spain.
- **Kilborn, J. P.**, E. B. Peebles, and D.L. Jones. 2013. Poster presentation: Clustering methods for assigning community types, spatial distributions, and habitat associations to multispecies benthic fish communities on the West Florida Shelf, eastern Gulf of Mexico. *International Council for the Exploration of the Sea – Annual Science Conference*, Reykjavik, Iceland.
- **Kilborn J. P.**, E. B. Peebles, D. L. Jones, and D. F. Naar. 2012. Poster presentation: Using one fish community to predict another: Dynamic models of predator distribution based on lower-trophic-level community structure and other habitat features. *International Council for the Exploration of the Sea – Annual Science Conference*, Bergen, Norway.
- **Kilborn, J. P.** 2012. An exposition on essential fish habitat. *University of South Florida – College of Marine Science, Graduate Student Symposium*, St. Petersburg, FL.

- **Kilborn, J. P., S. Rai.** 2001. A differential equation model of HIV dynamics via CD4+ T cells. *National Council of Undergraduate Research*, Lexington, KY.
- **Kilborn, J. P., S. Rai.** 2000. A differential equation model of HIV dynamics via CD4+ T cells. *Mathematical Association of America – Sectional Meeting*, Ft. Meyers, FL.

GRADUATE LEVEL COURSE WORK

- Applied Multivariate Statistics
- Biological Oceanography
- Chemical Oceanography
- Dynamics of Marine Ecosystems
- Fish Biology
- Fisheries Ecology Reading Group
- Foundations in Biological and Fisheries Oceanography
- Geological Oceanography
- Geology of the Gulf of Mexico
- GIS for Non-majors
- Marine Ecosystem Modeling
- Marine Resource Remote Sensing
- Physical Oceanography
- Population Dynamics
- Professional Development I & II
- Surveying Natural Populations

SHIP-BASED RESEARCH CRUISES

- Florida Fish and Wildlife Conservation Commission. June 05-16, 2013. **R/V Tommy Munro: Fishery Independent Monitoring Program – Southeast area monitoring and assessment (SEAMAP) Summer Groundfish Trawl Survey.**
 - Conduct semi-balloon trawl sampling across entire West Florida Shelf
 - Deploy oceanographic sensor packages to measure *in situ* water parameters
- University of South Florida – College of Marine Science. August 20-25, 2012. **R/V Weatherbird II: Northern Gulf of Mexico, USA.**
 - Conducted benthic long-line survey for predatory fishes
- University of South Florida – College of Marine Science. June 2-9, 2012. **R/V Bellows: Marquesas Islands & Hawk Channel, Florida Keys, USA.**
 - Side scan sonar habitat survey and seafloor mapping

SCUBA DIVING FIELD WORK

- University of South Florida – College of Marine Science, Reef Indicators Lab
Keys Marine Lab: Tennessee Reef, FL Keys, USA
 - Expedition Dates: 5-7 December 2012; 10-13 July 2012; 21-23 April 2013
 - Conducted Pulse-amplitude Modulation fluorometry on selected coral colonies
 - Collected benthic foraminifera samples
- SCUBAnauts International, LLC – Saint Petersburg, FL Chapter
Mote Marine Lab: Looe Key, FL, USA & U.S. Army Special Forces Underwater Operations School: Key West, FL, USA
 - Expedition Dates: 28 July – 3 August 2012; 27-29 July 2013
 - Collected visual benthic survey data using Atlantic and Gulf Rapid Reef Assessment (AGRRA) point count and belt transect survey protocols, and Reef Environmental Education Foundation (REEF) fish survey protocols

- Assisted in coral nursery maintenance and fragmentation for *Acropora spp.* intended for transfer to natural out-plant site.
- Monitor and survey out-plant corals for ongoing coral restoration project at Mote
- Participate in navigation training with U.S. Army Special Forces Diving Team

Glover's Reef Research Station: Glover's Reef Atoll, Belize

- Expedition Dates: 23-30 June 2012
- AGRRA point count surveys
- AGRRA belt transect surveys
- REEF fish surveys
- Deployed HOBO data-loggers for continuous, long-term data collection

ACADEMIC SERVICE

- University of South Florida – College of Marine Science
Curriculum Committee (2014-2017)
 - Ph.D. Student representative to committee which oversees all curriculum and college-wide assessment test development and implementation
- **Dean's Advisory Council** (2013- 2014)
 - Student representative to advisory council overseeing all standing committees at CMS
- **Honors and Awards Committee** (2011-2013)
 - Student representative on committee responsible for awarding endowed fellowships to all USF – CMS graduate students annually

COMMUNITY OUTREACH/SERVICE ACTIVITIES

- SCUBAnauts International, LLC, Saint Petersburg, FL Chapter (2011-2014)
 - **Chapter Vice President** (2012-2014)
 - **Dive Safety Officer** responsible for all SCUBA diving activities (2011-2012)
- University of South Florida – College of Marine Science, Oceanography Camp Especially for Girls (Summer 2011)
 - **Science Mentor** in charge of wax model demonstration of Plate Tectonics Theory
- Assisted in beach profile field study demonstration and active learning for campers
- Reef Monitoring Inc., Clearwater Beach, FL (September 2011)
 - **Artificial Reef Cleanup**, participant
 - Conducted underwater marine debris collection on SCUBA
- St. Pete Science Festival, **Planning and Logistics Committee**
 - Event Date: 17-18 October 2014
 - Coordinated sign-up and logistical needs of 100+ exhibitors in months leading to event
 - Organized and planned site map for the day of the event
- SCUBAnauts International, LLC, **Marine debris coastal cleanup**
 - Cleanup Dates: November 2011, May 2012, July 2012
 - Organized and carried out cleanups at Clam Bayou Education Center in St. Petersburg, FL and Deer Key, FL Keys