

# LISA JOHNSON COHEN

UC Davis ◊ Molecular, Cellular, Integrative Physiology graduate student

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## EDUCATION

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**Ph.D. Molecular, Cellular, Integrative Physiology** 2015-Present

*University of California, Davis*

Advisor: C. Titus Brown

**M.S. Environmental Resource Management** 2007-2009

*Florida Institute of Technology*

Agency: Southeast Florida Aquatic Preserves, Florida Department of Environmental Protection

**M.S. Biology** 2002-2004

*University of North Carolina at Wilmington*

Thesis: "Metabolic influences of fiber size in aerobic and anaerobic muscles of the blue crab, *Callinectes sapidus*."

Advisor: Stephen Kinsey

**B.S. Biochemistry** 1998-2002

*Minor in Music*

*Eckerd College*

## PUBLICATIONS

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O Hanley, R Zewdu, **L Cohen**, H Jung, J Lacombe, D Lee, P Philippidou, L Selleri, J Dasen. In Press. Parallel Pbx-Dependent Pathways Govern the Coalescence and Fate of Motor Columns. *Neuron*. (NEURON-D-16-00192R1)

L Cartularo, T Kluz, **L Cohen**, SS Shen, M Costa. 2016. Molecular Mechanisms of Malignant Transformation by Low Dose Cadmium in Normal Human Bronchial Epithelial Cells. *PloS One*. 11(5), e0155002.

Maass K, Shekar A, Lu J, Kang G, See F, Kim E, Delgado C, Shen S, **Cohen L**, Fishman G. 2014. Isolation and Characterization of ESC-Derived Cardiac Purkinje Cells. *Stem Cells*. Dec 18. doi: 10.1002/stem.1921.

Montenegro D, Kalpana K, Chrissian C, Sharma A, Takaoka A, Iacovidou, M, Soll C, Aminova O, Heguy A, **Cohen L**, Shen S, Kawamura A. 2014. Uncovering "herbal probiotics" in Juzen-taiho-to, an immune-boosting herbal formulation. *Bioorganic & Medicinal Chemistry Letters*. doi:10.1016/j.bmcl.2014.12.036

**Johnson LK**, Dillaman RM, Gay DM, Blum JE, Kinsey ST. 2004. Metabolic influences of fiber size in aerobic and anaerobic locomotor muscles of the blue crab, *Callinectes sapidus*. *Journal of Experimental Biology*. 207:4045-4056.

Gavrilova O, Haluzik M, Matsusue K, Cutson JJ, **Johnson L**, Dietz KR, Nicol CJ, Vinson C, Gonzalez FJ, Reitman ML. 2003. Liver peroxisome proliferator-activated receptor-gamma contributes to hepatic steatosis, triglyceride clearance, and regulation of body fat mass. *Journal of Biological Chemistry*. 278(36):34268-34276.

## BOOK CHAPTER

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**Cohen L**, Efstathiadis E, Shen S. 2015. In press. Chapter 9: *De novo* Transcriptome Assembly. In: *Next Generation DNA Sequencing Informatics, 2nd Edition*. Ed. Stuart Brown. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

## PRESENTATIONS

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**Cohen L.**, Gonzlez Angel A. M., Edge S. 2013. Molecular responses of coral larvae and sponges to environmental stresses. [Florida Specialty License Plate-Funded Research Symposium, Harbor Branch Oceanographic Institute, Fort Pierce, FL. May 16, 2013.](#)

Edge S., Voss J., Semon K., Ruzicka R., Williams M., Fahsbender E., **Cohen L.** 2012. Molecular diagnostics of coral exposed to oil and dispersants: a holobiont approach to investigate potential effects on the host corals, symbiotic algae, and mucus associated microbial communities. 12th Annual International Coral Reef Symposium, Cairns, Queensland, Australia. July 9-13, 2012.

Voss J., S. Edge, **L. Cohen**, E. Fahsbender, M. Williams, N. Harrison. 2012. Oil, Dispersant, and Disease: Impacts and Interactions on Corals in the Florida Keys. 41st Benthic Ecology Meeting, Norfolk, VA. Mar 23, 2012.

Voss J., Beal J., Edge S., **Cohen L.**, Hanisak, D. 2012. Estuarine Impacts on St. Lucie Reef: Determining the Effects of Changing Resource Management on Floridas Northernmost Coral Reef. Indian River Lagoon Symposium, Harbor Branch Oceanographic Institute at Florida Atlantic University. Feb 9, 2012

Voss J., S. Edge, **L. Cohen**, E. Fahsbender, M. Williams, N. Harrison. 2011. Oil, Dispersant, and Disease: Impacts and Interactions on Corals in the Florida Keys. Coastal And Estuarine Research Federation Meeting, Daytona Beach, FL. Nov 7, 2011.

Beal J, Voss J, Edge S, **Cohen L.** 2011. Living on the ledge: assessment of coral stressors on St. Lucie Reef, Florida. 21st Biennial Conference of the Coastal and Estuarine Research Federation. November 6-10, 2011. Daytona Beach, FL.

**Cohen LJ**, Herren LW, Virgilio MT. 2010. Restoring fringing mangrove habitat in the Indian River Lagoon. Florida Academy of Sciences Annual Meeting, Indian River State College, Ft. Pierce, FL. March 19-20, 2010.

Virgilio MT, **Cohen LJ**, Herren LW. 2010. Using historic aerial photographs and GIS as management tools for establishing baselines and setting goals for future shoreline restoration in the Indian River Lagoon. Florida Academy of Sciences Annual Meeting, Indian River State College, Ft. Pierce, FL. March 19-20, 2010.

Minton D, Smith G, Filmed C, Taffleichig A, **Johnson L**, and Molina M. 2008. Improvement of coral dredging management to minimize environmental impacts in Yap State, Federated States of Micronesia. 11th Annual International Coral Reef Symposium, West Palm Beach, FL. July 7-11, 2008.

**Johnson LK** and Kinsey ST. 2004. Effects of muscle fiber size on post-contractile lactate recovery in the blue crab, *Callinectes sapidus*. Society for Integrative and Comparative Biology Annual Meeting, New Orleans, LA. January 5-9, 2004. ([1st Place Student Poster Award](#))

**Johnson LK**, Cutson JJ, Nicol CJ, Gonzalez FJ, Gavrilova O, Reitman ML. 2001. Effects of rosiglitazone on A-ZIP/F-1 mice with liver-specific deletion of PPAR-gamma gene. Summer Student Poster Day, National Institutes of Health, Bethesda, MD.

**Johnson LK**, Gavrilova O, Reitman ML. 2000. Effects of surgical transplantation of brown adipose tissue on the metabolism of lipoatrophic AZIP/F-1 mice. Summer Student Poster Day, National Institutes of Health, Bethesda, MD.

**Johnson LK**, Everett CA, Chumakov MK, Gavrilova O, Reitman ML. 1999. Effects of diet on metabolism in lipoatrophic A-ZIP/F-1 mice. Summer Student Poster Day, National Institutes of Health.

Tatham TA, **Johnson LK**, Acuna AS. 1998. Symmetrical generalization of the discriminative stimulus effects of toluene and ketamine suggests mediation by NMDA receptors. Society for Neuroscience Annual Meeting, San Diego, CA.

## WORK EXPERIENCE

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**Bioinformatics Core, Genome Technology Center,  
New York University Langone Medical Center**  
*Bioinformatics Programmer*

March 2014 - May 2015  
New York City, NY

**Supervisors:** Dr. Steven Shen, Dr. Adriana Heguy

- Routine bioinformatics for core sequencing facility
- Illumina bcl2fastq demultiplexing
- RNA-Seq differential gene expression analyses
- benchmark *de novo* transcriptome assembly software study
- *de novo* genome assembly of prokaryotic and nonmodel eukaryotic species

**Harbor Branch Oceanographic Institute,  
Florida Atlantic University**  
*Biological Scientist - Senior Research Technician*

March 2010 - March 2014  
Fort Pierce, FL

**Supervisors:** Dr. Joshua Voss, Dr. Sara Edge

- Gene expression profiling: microarrays, qPCR, RNA-Seq
- Designed a custom 8x15k Agilent microarray for Scleractinian corals
- Trained and supervised 13 staff and students, responsible for general lab management
- Field sample collections: SCUBA diving, 3 NOAA research cruises (ROV and JSL submersible)

**Florida Department of Environmental Protection, CAMA  
Southeast Florida Aquatic Preserves**  
*Shoreline Restoration Project Coordinator*

May 2008 - March 2010  
Fort Pierce, FL

- Evaluated a large-scale, long-term ecological restoration project for Master's project
- Trained and supervised staff, student interns, and coordinated a network of over 200 volunteers
- Developed and delivered public outreach presentations

**U.S. Peace Corps**  
*Natural Resources Conservation & Development Volunteer*

August 2004 - November 2006  
Yap, Micronesia

- Worked at the Yap State Environmental Protection Agency
- Established an intergovernmental technical assistance relationship between US FWS and Yap State

**University of North Carolina at Wilmington,  
Comparative Biochemistry & Physiology Lab**  
*Graduate Research Assistant*

August 2002 - June 2004  
Wilmington, NC

- Master's thesis research funded by NSF grant to Dr. Stephen Kinsey and Sigma Xi GIAR grant
- Designed experiments and measured biochemical consequences of cell size and intracellular diffusive constraints in a crustacean model
- Trained undergraduate students

**National Institutes of Health, NIDDK  
Molecular Biology & Gene Regulation Section**  
*Laboratory Support Technician, GS-0404-4*

Summers 1999-2001  
Bethesda, MD

- Funded by NIH Summer Internship Program in Biomedical Research
- Designed experiments, completed and presented three summer projects investigating the role of lipid metabolism in a mouse model for lipotrophic Type II diabetes

## TEACHING

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### Next Generation Sequence Analysis Workshop,

Michigan State University

*Teaching Assistant*

Kalamazoo, MI

*August 2015*

- Attendee, Week 3

### University of Phoenix

*Associate Faculty*

Online

*2009-2014*

- Developed material and taught 20 sections of Associate-level Environmental Science (SCI 275)

### NSF GK-12 Integrated Science Teaching Enhancement Partnership Program,

Florida Institute of Technology

*Graduate Teaching Fellow*

Melbourne, FL

*Fall 2007*

- Developed inquiry-based curriculum in Brevard County Public High Schools

### Montgomery County Public Schools

*Substitute Teacher*

Montgomery County, Maryland

*Spring 2007*

- High School, Middle School science, math, social studies, music

### Department of Biology & Marine Biology,

University of North Carolina at Wilmington

*Graduate Teaching Assistant*

Wilmington, NC

*Fall 2002*

- Labs: Principles of Biology, Cells (BIO 101), Anatomy & Physiology I (BIO 240)

### Department of Chemistry,

Eckerd College

*Teaching Assistant*

St. Petersburg, FL

*Fall 2000-Spring 2002*

- Labs: Organic Chemistry I (CHN 121), Organic Chemistry II (CHN 122), Biochemistry I (CHN 415), Biochemistry II (CHN 417)

## GRANT FUNDING

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US EPA National Estuary Program and St. Johns River Water Management District, Palm Bay, FL. 2005, 2006. Indian River Lagoon Shorelines Restoration Project. Awarded to: **Southeast Florida Aquatic Preserves, Florida Department of Environmental Protection**. (Contract #24860; Grant #FC397 and Contract #25209; Grant #FC411)

National Marine Fisheries Service, NOAA Coral Reef Conservation Grants Program-General Grant. August 2006. Developing a coral reef monitoring program in the State of Yap, FSM. Awarded to: Yap Community Action Program, **Yap State Environmental Protection Agency**, Yap State Marine Resources Management Division. (NMFS-HCPO-2006-2000348)

US-FSM Joint Economic Management Committee, US Department of the Interior. 2006. Request for technical assistance for managing and monitoring coral reef dredging operations in Yap State, FSM through a Memorandum of Understanding between the Federated States of Micronesia, Department of Economic Affairs and the US FWS. Awarded to: **Yap State EPA**, Yap State Marine Resources Management Division.

Sigma Xi Grant-in-Aid-of-Research, Cell Biology/Biochemistry. March 2003. The effects of cell size on metabolism during recovery from fatigue in the blue crab, *Callinectes sapidus*. Awarded to: **Lisa K. Johnson** and Stephen T. Kinsey.

## OTHER FUNDING & AWARDS

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<b>Honorable Mention</b>	2015
<i>Graduate Research Fellowship Program, National Science Foundation</i>	
<b>Graduate Student Fellowship</b>	Fall 2015, Winter 2016
<i>Molecular, Cellular, Integrative Physiology Graduate Group, UC Davis</i>	
<b>Graduate Fellowship in Environmental Resource Management</b>	2008-2009
<i>South Brevard Garden Club Association, Kimley-Horn and Associates, Inc., Florida Institute of Technology</i>	
<b>First Place, Student Poster Award</b>	2004
<i>Division of Comparative Physiology &amp; Biochemistry, Society for Integrative and Comparative Biology Annual Meeting, New Orleans, LA</i>	
<b>Academic Honors &amp; Special Talent Scholarships</b>	1998-2002
<i>Eckerd College</i>	
<b>Student Science Award Fellowship</b>	1998
<i>American Heart Association</i>	

## TECHNICAL

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<b>Computing Resources</b>	<i>User: AWS cloud, HPCC workload management (PBS, SGE, Slurm)</i>
<b>Operating Systems</b>	<i>Linux, OSX, Windows</i>
<b>Scripting Languages</b>	<i>Python, R, Bash</i>
<b>NGS Bioinformatics Pipelines</b>	<i>Illumina demultiplexing, QC, RNASeq differential expression analysis, de novo assembly, metagenomics, annotation, evaluation</i>
<b>Molecular Lab</b>	<i>RNA, DNA, protein isolations, purification, quantification, electrophoresis/Bioanalyzer, PCR, Cy3/Cy5 labeling, microarray hybridization, western blotting, enzyme assays</i>
<b>Field</b>	<i>Sample collections (marine &amp; terrestrial), ArcGIS</i>

## SPECIAL TRAINING

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<i>Workshop on Genomics</i>	January 12-24, 2014
<i>evomics.org</i>	Český Krumlov, CZ
<i>Software Carpentry Boot Camp</i>	November 12-13, 2013
<i>Woods Hole Oceanographic Institute &amp; NOAA National Marine Fisheries Service</i>	<i>Woods Hole, MA</i>
<i>Scientific Diver</i>	2010-2014
<i>American Association of Underwater Sciences</i>	<i>Fort Pierce, FL</i>
<i>Harbor Branch Oceanographic Institute, FAU</i>	
<i>GIS, Spatial Analysis &amp; Modeling</i>	January-May, 2009
<i>Florida Institute of Technology</i>	<i>Melbourne, FL</i>

## COMMUNITY

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<b>Melbourne Beach Environmental Advisory Board</b>	Terms 2010-2012, 2012-2014
<i>Member, Town Commission-appointed</i>	
<b>Cellist:</b> New York University Community Orchestra (2014-2015), Vero Beach Chamber Orchestra (2010-2013, Principal: 2012-2013), Melbourne Community Orchestra (2007-2009), Wilmington Symphony Orchestra (2002-2004), Tampa Bay Symphony (1998-2002), Montgomery County Youth Orchestras (1993-1998)	