2104 E. 8th St.
Davis, CA 95618
+1 (321) 427 9335
ljcohen@ucdavis.edu
https://ljcohen.github.io/
ljcohen

Lisa K. Johnson

Last Updated: October 17, 2018

Research Interests: Multi-species -omics analysis, Data Science Training

Education

2015-Present **PhD, Molecular, Cellular & Integrative Physiology**, *University of California, Davis*.
Dissertation: Transcriptional profiling in large multispecies datasets.

2009 **MS, Environmental Resource Management**, *Florida Institute of Technology*.

2004 **MS, Biology**, *University of North Carolina, Wilmington*.

2002 **BS, Biochemistry**, *Eckerd College*.
Minor in Music

Experience

2015–Present **Graduate Researcher**, *Data Intensive Biology Laboratory*, Population Health & Reproduction, School of Veterinary Medicine, University of California, Davis, Davis, CA.
Developed an automated pipeline to re-assemble and analyze 600+ *de novo* transcriptomes from the Marine Microbial Eukaryotic Transcriptome Sequencing Project (`https://github.com/dib-lab/dib-MMETSP`), developing automated analyses for evaluation and *de novo* genome assemblies with Oxford Nanopore Technologies MinION and PromethION data

2014 - 2015 **Bioinformatics Programmer**, *Bioinformatics Core, Genome Technology Center, New York University Langone Medical Center*, New York City, NY.

2010 - 2014 **Molecular Biology Research Technician**, *Coral Reef Genomics, Harbor Branch Oceanographic Institute, Florida Atlantic University*, Fort Pierce, FL.

2008 - 2010 **Shoreline Restoration Project Coordinator**, *Southeast Florida Aquatic Preserves, Florida Department of Environmental Protection*, Fort Pierce, FL.

2004 - 2006 **U.S. Peace Corps Volunteer**, *Natural Resources Conservation & Development Program*, Yap State Environmental Protection Agency, Yap, Micronesia.

1999 - 2001 **Summer Intern**, *Molecular Biology & Gene Regulation Section, National Institutes of Health, NIDDK*, Bethesda, MD.

Publications

[8] **Johnson LK**, Alexander H, Brown CT., *2018*, Re-assembly, quality evaluation, and annotation of 678 microbial eukaryotic reference transcriptomes., bioRxiv. doi: https://doi.org/10.1101/323576.

[7] Daniel Standage, Ali Aliyari, **Lisa J Cohen**, Michael R Crusoe, Tim Head, Luiz Irber, Shannon EK Joslin, N B Kingsley, Kevin D Murray, Russell Neches, Camille Scott, Ryan Shean, Sascha Steinbiss, Cait Sydney, C Titus Brown., *2017*, khmer release v2.1: software for biological sequence analysis., Journal of Open Source Software, 2(15)272, doi:10.21105/joss.00272.

[6] Hanley O, Zewdu R, **Cohen L**, Jung H, Lacombe J, Lee D, Philippidou P, Selleri L, Dasen J., *2016*, Parallel Pbx-Dependent Pathways Govern the Coalescence and Fate of Motor Columns., Neuron. 91(5):1005-1020.

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

[4] Maass K, Shekar A, Lu J, Kang G, See F, Kim E, Delgado C, Shen S, **Cohen L**, Fishman G., *2015.*, Isolation and Characterization of ESC-Derived Cardiac Purkinje Cells., Stem Cells. doi: 10.1002/stem.1921.

[3] Montenegro D, Kalpana K, Chrissian C, Sharma A, Takaoka A, Iacovidou, M, Soll C, Aminova O, Heguy A, **Cohen L**, Shen S, Kawamura A., *2015*, Uncovering "herbal probiotics" in Juzen-taiho-to, an immune-boosting herbal formulation., Bioorganic & Medicinal Chemistry Letters. doi:10.1016/j.bmcl.2014.12.036.

[2] **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.

[1] 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

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

Selected Presentations

Johnson, LK and Whitehead A, *2018*, De novo assemblies, annotations, and gene expression profiling of gill epithelium from 16 species of Fundulus killifish in response to salinity change, 13th International Congress on the Biology of Fishes, Calgary, Alberta, July 15-19, 2018.

Word, KR; Duckles, BM; Brooks, PT; **Johnson, LK**; Brown, CT, *2018*, Perspectives from an intensive bioinformatics training workshop with a heterogeneous learner population: success takes many different forms. Society for Integrative and Comparative Biology Annual Meeting, San Francisco, CA, January 3-7, 2018.

Cohen L, Alexander H, Brown CT., *2017*, Reassembling 600+ marine transcriptomes: automated pipeline development and evaluation. Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography, Honolulu, HI, Feb 26-March 3, 2017.

Cohen L, González Angel AM, 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.

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

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, Daytona Beach, FL, November 6-10, 2011.

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..

Minton D, Smith G, Filmed C, Tafileichig 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.

Bioinformatics Teaching

Certified Instructor

Software/Data Carpentry Foundation, an organization whose volunteer members teach researchers basic software and computational skills.
Workshops taught:

- Python for Ecologists, Smithsonian National Museum of Natural History (February 2018)
- Genomics, UC Davis (January 2018)
- R, UC Davis (January 2018)
- Python for Ecologists, UC Merced (October 2017)

Lead Instructor

Carpentry-style workshops, adapted for bioinformatics skills.
Workshops taught:

- **mRNAseq Data Workshop: De Novo Assembly and Differential Expression Analysis**. Society for Environmental Toxicology And Chemistry Annual Meeting, Sacramento, CA. (November 4, 2018)
- **Bioinformatics Training Workshop**. Global Invertebrate Genomics Alliance 3rd Annual Conference, Curaçao. (October 19-22, 2018)
- **Data Intensive Biology Summer Institute**. School of Veterinary Medicine, UC Davis. (July 2-14, 2018)
- **Nonmodel RNAseq Workshop**. Bioinformatics Users Group, Scripps Institute of Oceanography, UC San Diego. (October 11-12, 2017)
- **Nonmodel RNAseq Workshop**. UC Davis (July 17-21, 2017)

Awards

2016 **Honorable Mention**, *Graduate Research Fellowship Program*, National Science Foundation.

2015-2016 **Graduate Student Fellowship**, *Molecular, Cellular, Integrative Physiology Graduate Group*, UC Davis.

2008-2009 **Graduate Fellowship in Environmental Resource Management**, *Florida Institute of Technology*.

2004 **First Place, Student Poster Award**, *Division of Comparative Physiology & Biochemistry*, Society for Integrative and Comparative Biology.

2003 **Sigma Xi Grant-in-Aid-of-Research**, *Cell Biology/Biochemistry*, March 2003.

1998-2002 **Academic Honors & Special Talent Scholarships**, *Eckerd College*.

1998 **Student Science Award Fellowship**, *American Heart Association*.

Data Science Skills

Computing Resources, AWS cloud, HPCC management systems (PBS, SGE, Slurm).

Languages, Python, R, BASH, LaTeX.

Automation, snakemake, Python.

Visualization, ggplot2, matplotlib, seaborn.

Version Control, git, GitHub.

Data Sharing, osf, zenodo, figshare.

Reproducibility, Jupyter Notebook, RMarkdown, Conda.

Bioinformatics Pipelines, *Illumina bcl2fastq demultiplexing, multiqc, RNAseq differential gene expression, de novo assembly, annotation, assembly evaluation, microarray differential expression analysis (limma).*

Special Training

Data Carpentry Geospatial Workshop, *UC Davis*, June 27-28, 2018.

Workshop on Genomics, *Ceský Krumlov, CZ*, January 12-24, 2014.

GIS, Spatial Analysis & Modeling, *Florida Institute of Technology*, Spring 2009.

Data Management & Analysis Workshop, *NOAA Coral Reef Conservation Program, Palau International Coral Reef Center, Koror, Republic of Palau*, June 26-July 7, 2006.

Community

Cellist UC Davis String Quartet (2017-2018), UC Davis Symphony (2017 - 2018, Assistant Principal 2018), UC Davis Baroque Ensemble (2015), 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).