MELISSA C. KEINATH

Curriculum Vitae

Department of Biology cell: 859 576 8235

University of Kentucky office: 859 257 0124

Thomas Hunt Morgan Building (Lab 311) fax: 859 257 1717

675 Rose Street e-mail: mckein2@g.uky.edu

Lexington, KY 40546

**EDUCATION**

2012-present **University of Kentucky,** Department of Biology

Ph.D., Molecular Biology, Advisor: Jeramiah J. Smith, Ph.D

* 1. **University of Kentucky**

B.S., Biology; minor in German

**PUBLICATIONS**

**Articles– peer-reviewed**

Smith, J. J., **Keinath, M. C.** The sea lamprey meiotic map improves resolution of ancient vertebrate genome duplications. *Genome Research*. Jun 5. doi: 10.1101/gr.184135.114

**Keinath M.C.**, Timoshevskiy V.A., Timoshevskaya N.Y., Tsonis P.A., Voss S.R., Smith, J.J. Initial characterization of the large genome of the salamander Ambystoma mexicanum using shotgun and laser capture chromosome sequencing. *Scientific reports*. 2015;5:16413. doi: 10.1038/srep16413.

**Articles – in review or in prep**

**Keinath M.C.**, Tsonis, P.A., Voss S.R., Smith, J.J. A Comprehensive Linkage Map for the Red Spotted Newt Reveals Fusion and Fission Events in Ancestral Amphibian Karyotype. (in prep for *Developmental Biology.*)

**FELLOWSHIPS & AWARDS**

2016 (spring) Research Assistantship

2015 CSHL travel and tuition grant (*$750*) – for Computational and Comparative Genomics Course

2015 Dissertation Enhancement Award (*$3000*) – for Computation and Comparative Genomics Course

2015 (fall) Teaching Assistantship

2015 American Genetics Association travel fellowship – for registration and housing to attend AGA2015, Chromosome Evolution: Molecular Mechanisms and Evolutionary Consequences.

2015 Meeting Fellowship award (*$750*) – for registration to attend Genome 10K meeting

2015 Ribble travel grant (*$500*) and graduate student travel award (*$325*) – for travel to Plant and Animal Genome Conference

2014 Ribble travel grant (*$500*) and graduate student travel award (*$400*) – for travel to Plant and Animal Genome Conference

2013 Okinawa Institute of Science and Technology travel grant – for travel, housing, course fees for Okinawa Winter Education Course

2013 Ribble travel grant (*$500*) and graduate student travel award (*$400*) – for travel to Plant and Animal Genome Conference

2013- 2015 Research Assistantship

2012 (fall) Teaching Assistantship

**COURSES**

2015 CSHL: *Computational and Comparative Genomics*; Cold Spring Harbor Laboratories. Cold Spring Harbor, NY.

2013 OWECS: *Okinawa Winter Course: Evolution of Complex Systems*; Okinawa Institute of Science and Technology. Okinawa, Japan.

**ORAL PRESENTATIONS**

2015 Research Talk: *Structure and Evolution of a Large Vertebrate Genome*. Graduate Student Research Talks; Lexington, KY.

2015 Invited High School Speaker: *The salamander as a Model for regeneration, genome variation and sex chromosome evolution*. Vertebrate Evolution course. Lafayette High School. Lexington, KY.

2014 Research Talk: *Characterization of a Large Vertebrate Genome Using Shotgun and Laser Capture Chromosome Sequencing*. Graduate Student Research Talks; Lexington, KY.

2013 Small Meeting Talk: *New Methods in Genome Assembly of a Large Vertebrate Genome; Laser Capture Chromosome Sequencing and Assembly.* Regeneration Meeting; Lexington, KY.

**POSTER PRESENTATIONS**

2015 Keinath, M. C., Voss, S. R., Smith, J. J. *Characterization of a large vertebrate genome using shotgun and laser capture chromosome sequencing.* Plant and Animal Genome Conference. San Diego, California.

2015 Keinath, M. C., Voss, S. R., Smith, J. J. Characterization of a large vertebrate genome using shotgun and laser capture chromosome sequencing. Genome 10K Meeting. Santa Cruz, California.

2015 Keinath, M. C., Voss, S. R., Smith, J. J. Characterization of a large vertebrate genome using shotgun and laser capture chromosome sequencing. Chromosome Evolution Meeting. Bainbridge Island, Washington.

2015 Keinath, M. C., Voss, S. R., Smith, J. J. Initial characterization of a large vertebrate genome and sex chromosomes. Computational and Comparative Genomics Course. Cold Spring Harbor, NY.

2014 Keinath, M. C., Smith, J. J., Voss, S. R. *Enabling the endangered Mexican axolotl for biomedical research.* Plant and Animal Genome Conference. San Diego, California.

2014 Keinath, M. C., Voss, S. R., Smith, J. J. *Laser capture microdissection and whole chromosome amplification for sequencing large genomes.* Plant and Animal Genome Conference. San Diego, California.

2013 Keinath, M. C. and Smith, J. J. *Construction of a comprehensive linkage map in the sea lamprey, Petromyzon marinus.* Plant and Animal Genome Conference, San Diego, California.

**TEACHING**

2015 (fall) Bioinformatics (teaching assistant; substitute lecturer)

2015 (fall) Laboratory for Genetics (teaching assistant)

2014 (fall) Bioinformatics (teaching assistant; substitute lecturer)

2012 (fall) Laboratory for Biology I (teaching assistant)

**MENTORING**

**Undergraduate Students**

Sarah Whelan (2013-2015). Characterization of germline development in lamprey.

Kalen Wright (2014- present). Evolution of myelin-associated proteins in vertebrates.

Zach Fortenbery (2014- present). Understanding programmed genome rearrangement in lamprey.

Patrick Osterhaus (2014- 2015). Resolving the newt linkage map using laser-captured chromosomes and synteny studies.

Aum Patel (2015- present). Characterizing sex determination in the axolotl.

**SERVICE & VOLUNTEER**

**University and Department Committees**

Biology Graduate Student Association Vice President (2016)

Biology Graduate Student Association Member (2012 – present)

**Outreach**

Academic Majors Fair: Biology (2015)

Genetics and Bioinformatics tutoring (2014-present)

Member of graduate school Q&A panel for undergraduate and REU students (2013 – present)

High School calculus and chemistry tutoring (2010 – 2013)

Science lessons annually at James Lane Allen Elementary School (2011 – present)

Science Fair Judge annually at Ashland Elementary School (2012 – present)

Science Fair Judge annually at James Lane Allen Elementary School (2012 – present)