

Olivia L Sabik

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EDUCATION

PhD Candidate, Biochemistry and Molecular Genetics

Anticipated 2019

The University of Virginia—Charlottesville, VA

Advisor: Charles Farber Ph.D.

Research Focus: Deepening our understanding of the role of bone-forming osteoblasts in osteoporosis through gene co-expression network analysis and *in vitro* studies of candidate genes

Bachelor of Arts in Chemistry, magna cum laude with distinction

2014

Kenyon College—Gambier, OH

Advisors: John Hofferberth Ph.D., Sheryl Hemkin Ph.D.

Research Focus: Investigation of the mechanism of formation of cyclopenta[c]pyridine structures via computational modeling of energy states

RESEARCH EXPERIENCE

Summer Science Scholar

2013

Kenyon College Chemistry Department—Gambier, OH

Constructed a potential energy surface of the formation of cyclopenta[c]pyridine using quantum mechanical calculations under Dr. Sheryl Hemkin, funded by Kenyon College

Research Assistant

2012

The James Cancer Center at The Ohio State University—Columbus, OH

Developed a small molecule protein inhibitor as a part of a research team in the lab of Dr. Chenglong Li in the department of Medicinal Chemistry and Pharmacognosy through computational docking analysis of candidate molecules and synthesis of top hits, funded by The Ohio State University James Cancer Center Pelotonia Fellowship

PUBLICATIONS

*denotes peer-reviewed publications

Sabik, OL; Calabrese, GM; Ackert-Bicknell, CL; Farber, CR. Integration of osteoblast co-expression network and bone mineral density GWAS identifies novel genes underlying osteoblast activity and osteoporosis. *In preparation*.

*Sabik OL and Farber CR. Using GWAS to identify novel therapeutic targets for osteoporosis. *Translational Research*. 2017;181:15-26. doi:10.1016/j.trsl.2016.10.009.

*Sabik OL, Medrano JF, Farber CR. Genetic Dissection of a QTL Affecting Bone Geometry. *G3: Genes/Genomes/Genetics*. 2017;7(3):865-870. doi:10.1534/g3.116.037424.

PRESENTATIONS

Sabik, OL; Calabrese, GM; Ackert-Bicknell, CL; Farber, CR. (2018) *Systems Genetics Identifies Novel Genes and Gene Networks Influencing Osteoblast Activity*. Annual Meeting of the American Society for Human Genetics, poster, reviewers' choice (top 10% of abstract submissions). San Diego, California.

Sabik, OL; Calabrese, GM; Ackert-Bicknell, CL; Farber, CR. (2017) *Systems Genetics Identifies Novel Genes and Gene Networks Influencing Osteoblast Activity*. Annual Meeting of the American Society of Bone and Mineral Research, poster. Denver, Colorado.

Sabik, OL; Calabrese, GM; Ackert-Bicknell, CL; Farber, CR. (2017) *Systems Genetics Identifies Novel Genes and Gene Networks Influencing Osteoblast Activity*. Annual Meeting of the Complex Trait Consortium, poster. Memphis, Tennessee.

Sabik, OL; Medrano, J; Farber, CR. (2015) *Fine-mapping a quantitative trait locus influencing femur length*. 14th annual meeting of the Complex Trait Community, selected for oral presentation. Portland, Oregon.

Sabik, OL. (2014) *Quantum dot-based methods of viral DNA detection*. Kenyon College Chemistry Department Senior Exercise, oral presentation. Gambier, Ohio.

Sabik, OL. (2013) *Determination of the mechanism of formation of cyclopenta[c]pyridine structures by molecular modeling*. Kenyon College Summer Science Scholars program poster session for the Board of Trustees, poster. Gambier, Ohio.

Sabik, OL. (2012) *Small molecule inhibitors of protein arginine methyltransferase 5*. Pelotonia Scholars Symposium, oral presentation. Columbus, Ohio.

HONORS AND AWARDS

- 2018 The Robert R. Wagner Fellowship, University of Virginia
- 2018 Raven Society Scholarship, University of Virginia
- 2017 The Robert R. Wagner Fellowship, University of Virginia
- 2017 Young Investigator Award for PhD Training, American Society for Bone and Mineral Research
- 2016 Member of the University of Virginia Raven Society, University of Virginia
- 2015 Helmsley Fellowship, Cold Spring Harbor Laboratory
- 2015 Conference Travel Award, Complex Trait Community
- 2014 Phi Beta Kappa, Beta of Ohio
- 2014 Gordon L. Johnson Research Prize in Chemistry, Kenyon College
- 2013 Summer Science Fellowship, Kenyon College
- 2012 Pelotonia Partnership Research Fellowship, James Cancer Center at Ohio State University
- 2010 Honors Scholarship, Kenyon College

TEACHING EXPERIENCE

Teaching Assistant for Computational and Comparative Genomics 2015-2018
Cold Spring Harbor Laboratories—Cold Spring Harbor, NY

- Lead a group of faculty, post doctoral fellows, and doctoral students through a computational project using data from their projects
- Trouble-shot issues at all levels of bioinformatics pipelines, including de novo genome assembly, RNA sequencing, ChIP sequencing, and network analysis

Teaching Assistant in the Core Course in Biomedical Science 2015-2018
University of Virginia—Charlottesville, VA

- Designed and implemented a lesson plan for basic visualization, statistics, and genomic interrogation using the R programming language
- Lead review sessions and graded problem sets during the genetics section of the course, focusing on human and mouse genetics

Lead Tutor in the Math and Science Skills Center 2012-2014
Kenyon College—Gambier, OH

- Tutored students one-on-one and lead weekly review sessions for courses in the Math and Science Skills Center including Biology 116: Information in Living Systems and Chemistry 122: Honors Chemistry, Chemical Principles

Laboratory Teaching Assistant 2011-2013
Kenyon College—Gambier, OH

- Supervised and guided laboratory work of introductory chemistry students

OUTREACH AND COMMUNITY INVOLVEMENT

League Commissioner and Secretary for the Charlottesville Ultimate Disc Organization (CUDO) 2016-2018

Currently serving as the secretary and league commissioner for CUDO. As the secretary, I prepare agendas for meetings, lead meeting proceedings, and take the official record of each meeting. As league commissioner, I organized the registration, team draft, and game days for the 2017-2018 winter league, and will also commission the 2018 summer league.

President of Women in Math & Science (WIMS) 2017-2018
Member of WIMS 2014-2017

Oversee and help to organize events that promote the professional and personal goals of women scientists and mathematicians at UVA, including community outreach, academic and professional events, and social events

Honor Committee representative from the Graduate School of Arts and Sciences 2015-2017

Represented the views of the graduate student population in policy decisions, conducted outreach to constituents, including faculty, served on the appeals board and as an administrator in the processing of Honor hearings

SRIP Admissions Reviewer and Student Panelist 2014-2017
Reviewed applications for the 2015 and 2016 Summer Research Internship Program at the University of Virginia and sat on a Q&A panel for prospective graduate students

Virginia Piedmont Regional Science Fair Volunteer 2015
Assisted with the set up, judging, and awards ceremony for the science fair, interacted with students and inquired about their projects

LADS (Learning and Doing Science) Ask a Scientist 2013
Interacted with middle school-aged students as a “resident scientist” and answered their questions about all disciplines of science in order to get students asking questions and excited about learning

Professional Memberships

2014-2017	Sigma Xi
2015-present	American Society for Human Genetics
2015-2017	American Association for the Advancement of Sciences
2016-present	American Society for Bone and Mineral Research