

**Kate V. Karfilis, Ph.D.**  
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## **EDUCATION**

<b>Ph.D., Biology</b> University of Oregon Advisor: Dr. Kryn Stankunas	<b>Jul 2016</b>
<b>MSc., Biology</b> California Polytechnic State University at San Luis Obispo Advisor: Dr. Kenneth J Hillers	<b>Aug 2010</b>
<b>BSc., Biology</b> University of California at Santa Barbara	<b>Jun 2008</b>

## **RESEARCH AND TECHNICAL EXPERIENCE**

<b>Graduate Researcher, Stankunas Lab</b>	<b>Nov 2013-Jul 2016</b>
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- Developed a chemical genetics approach, utilizing anti-cancer drugs, which uncovered a unique role for VEGF signaling in embryonic cardiovascular development.
- Optimized molecular biology workflow and bioinformatics analysis of novel transcriptional profiling methodology, TU-Tagging, resulting in dramatically increased detection efficiency of cell-type specific differential gene expression in mouse models.
- Self-taught necessary methodologies in order to address project limitations and identified key collaborators/experts to help expand our analysis pipeline.
- Trained/mentored undergraduate researchers in lab techniques and procedures together with general preparation for post-graduate research placement.

<b>Graduate Researcher, Zong Lab (formerly at the University of Oregon)</b>	<b>Apr 2011-Oct 2013</b>
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- Independently identified a new line of investigation regarding angiogenesis in Medulloblastoma, and implemented a directed gene identification approach to provide evidence for an alternative axis for therapeutic targeting. Members of the Zong lab now at the University of Virginia continued this research direction.

## **RELEVANT SKILLS**

Mouse genetics (Transgenes/Knockouts), Mouse husbandry/colony management, Drug delivery (IP, Sub Cut), Microsurgery/dissection, *Ex vivo* whole embryo culture, Mammalian cell culture, RNA/DNA/Protein isolations, qPCR, Immunofluorescence/Histology, Microscopy, RNA-Seq Bioinformatics analysis (Basic R and Unix), Adobe Photoshop/Illustrator, GraphPad Prism.

## **PUBLICATIONS AND PRESENTATIONS**

- 1) Gay and **Karfilis** et al., Applying thiouracil tagging to mouse transcriptome analysis. *Nature Protocols*, 9, 410-420 (2014).
- 2) Tallafuss, A, Kelly, M, Gay, L, Gibson, D, Batzel, P, **Karfilis, KV**, Eisen, J, Stankunas, K, Postlethwait, J and Washbourne, P. Transcriptomes of post-mitotic neurons identify the usage of alternative pathways during adult and embryonic neuronal differentiation. *BMC Genomics* (2015).
- 3) Shurtleff, M, Temoche-Diaz, M, **Karfilis, KV**, Sayaka, Ri, Schekman, R. Cell-free packaging of microRNAs into exosomes reveals Y-box protein 1 as a critical sorting factor. *Elife* (2016).

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- 4) **Karfilis, KV** et al., Vascular endothelial growth factor regulates early cardiac trabeculation through transcriptional regulation of myocardial Bmp10 (*In prep for Developmental Biology, draft available upon request*)

**Karfilis KV**, Gay L, Smood BF, Doe CQ, Stankunas K. Improved TU-tagging for transcriptomic studies in cardiovascular development. *Weinstein Cardiovascular Development Conference* (Boston, MA; May 2015)

**Karfilis KV**, Gay L, Smood BF, Doe CQ, Stankunas K. Transcriptional and phenotypic responses to vascular endothelial growth factor during ventricular development. *University of Oregon Graduate Research Forum* (Eugene, OR; April 2015) **1<sup>st</sup> place poster for Biology**

### **LEADERSHIP AND VOLUNTEER EXPERIENCE**

#### **University of Oregon Women in Graduate Science**

**2012-2016**

President 2013-2015

- Increased presence on campus by expanding membership 60% through campus and community outreach programs including informational seminars and events.
- Established a relationship with the UO Graduate School, which lead to co-sponsorship of various events, including the Graduate Research Forum, which showcases presentations by all doctoral candidates and is judged by local scientific/business community members.
- Expanded fundraising revenue 750% by developing and implementing new fundraising strategy, which incorporated the broader Eugene community.
- Created undergraduate mentorship program, to enhance the retention of undergraduates in the sciences, by helping them build strong personal, educational and career skills.

#### **UO Presidential Search Advisory Group**

**2014-2015**

- Nominated to represent the ~3000 graduate students and communicate the needs important to the graduate student experience during the hiring process of current University of Oregon President, Dr. Michael Schill.

### **RELEVANT SKILLS**

Team Leadership, Budget Development, Financial Management, Fundraising, Public Speaking, Event Planning, Meeting Management, Strategic Planning, Team Building.

### **TEACHING EXPERIENCE**

#### **Graduate Teaching Fellow, University of Oregon**

**2010-2016**

- Demonstrated ability to effectively communicate complex biology to non-major students
  - Recipient of 2015 Department of Biology Teaching Recognition Award
- Independently instructed undergraduate laboratory classes consisting of ~25 students.
- Developed new laboratory activities, which resulted in increased student engagement.

#### **Teaching Associate, California Polytechnic State University**

**2008-2010**