

# PATRICK NUGENT

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## EDUCATION

- University of Washington, Molecular and Cellular Biology Program** September 2017-Present  
PhD student
- Washington University in St. Louis, College of Arts and Sciences** August 2009-May 2013  
Bachelor of Arts St. Louis, MO  
Major: Biology; Minor: French  
GPA: 3.76/4.00. College Honors, Dean's List.

## RESEARCH EXPERIENCE

- University of Washington, Department of Microbiology** August 2013-June 2017  
*Research Scientist/Technician* Seattle, WA
- Reported to Dr. Houra Merrikh, Assistant Professor of Microbiology.
  - Discovered that an error-prone DNA polymerase is responsible for the increased mutation rate of genes expressed from the lagging strand by using genetic methods and *Bacillus subtilis* as a model organism.
  - Developed genetic screens to identify novel factors and pathways that resolve collisions between DNA replication and transcription in bacteria.
  - Built *in vivo* protein-protein interaction reporters for small molecule screens with the goal of discovering adjunct therapies to decrease development of resistance during antibiotic treatment.
  - Engineered hundreds of bacterial strains for experiments using molecular cloning techniques.
  - Interviewed, hired, and trained undergraduate research assistants.
  - Regularly attended departmental seminars given by invited speakers on a range of topics within microbiology.
  - Managed procurement of reagents and equipment from scientific vendors.
- Washington University in St. Louis, Department of Cell Biology and Physiology** January 2012-August 2012  
*Research Assistant* St. Louis, MO
- Reported to Dr. Zhongsheng You, Associate Professor of Cell Biology and Physiology.
  - Studied regulation of nonsense-mediated mRNA decay (NMD), a pathway in eukaryotic cells that maintains genome integrity and that, if defective, is associated with increased risk of cancer and other genetic diseases.
  - Identified intracellular calcium is an important NMD regulator by using an *in vivo* reporter in a small molecule screen.
  - Maintained the laboratory's smooth functioning by regularly preparing stock solutions, autoclaving glassware, and performing safety checks.

## TEACHING EXPERIENCE

- Cold Spring Harbor Laboratory, Meetings & Courses Program** June 2016  
*Teaching Assistant, Advanced Bacterial Genetics* Cold Spring Harbor, NY
- Designed a curriculum to teach a group of 16 students, ranging in experience from graduate students to a principal investigator, basic bacterial genetics techniques while performing novel research.

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- Built and optimized multiple experimental systems for use in the course.
- Supervised students while they were in lab and answered their questions.
- Wrote nearly 80 pages of protocols for the course manual.
- Attended seminars given by leaders in the bacterial genetics field.
- Compiled lists of the necessary reagents and equipment and placed orders with vendors.

## Washington University in St. Louis, Department of Biology

January 2012-May 2012

*Laboratory Teaching Assistant, Principles of Biology I*

St. Louis, MO

- Led two weekly lab sections for introductory undergraduate Biology course, teaching students basic lab techniques and practices and answering students' questions as they arose.
- Graded weekly lab reports and quizzes.
- Held weekly office hours.

## PUBLICATION & PRESENTATIONS

- Million-Weaver S., Samadpour A., Moreno-Habel D., **Nugent P.**, Brittnacher M.J., Weiss E., Hayden H.S., Miller S.I., Liachko I., Merrikh H. An underlying mechanism for the increased mutagenesis of lagging-strand genes in *Bacillus subtilis*. *Proc Nat Acad Sci USA*. 2015; 112(10):E1096-E1105.
- Nickless A., Jackson E., Marasa J., **Nugent P.**, Mercer R.W., Piwnica-Worms D., You Z. Intracellular calcium regulates nonsense-mediated mRNA decay. *Nature Medicine*. 2014; 20(8):961-966.
- **Nugent P.**, Brenner C., Chalker D. Characterization of an RNA methyltransferase and a kinetodesmal fiber protein in *T. thermophila*. Washington University in St. Louis Undergraduate Research Symposium, Spring 2013.