

LANCE BOLING, M.Sc.

CURRICULUM VITAE

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RESEARCH INTERESTS

The human microbiome: Bacteria and bacteriophage play a crucial role in human health and resilience. My research has utilized advanced microbiological and molecular lab techniques spanning multiple disciplines to explore the human biome.

Gene therapy: Genetic and stem cell therapeutics are a new paradigm for treating genetic diseases. I aim to expand my skillset to aid in the development of novel therapies.

EDUCATION

M.Sc., Cell & Molecular Biology (2013 - 2016)
San Diego State University
Laboratory of Forest Rowher, Ph.D.

Biotechnology Certification (2007 - 2011)
San Diego State University

B.Sc., Food & Nutrition Science (2002 - 2006)
San Diego State University

PROFESSIONAL EXPERIENCE

RESEARCH ASSOCIATE III (2019 - present)
San Diego State University Research Foundation
Lab of Forest Rowher, Ph.D.; Cell & Molecular Biology
Research Aims: Providing microbiological characterization of a product manufactured by an external company. The nature of this research is currently classified.

RESEARCH ASSOCIATE III (2017 - 2018)
San Diego State University Research Foundation
Lab of Rob Edwards, Ph.D.; Cell & Molecular Biology
Research Aims: Developed and expanded a bacteriophage repertoire for characterization and use against antibiotic resistant bacteria for the United States Department of Defense. Discovered and cultivated novel phage from the environment using an anaerobic chamber and customized media. Optimized phage-host interactions, and isolated DNA for genome sequencing.

RESEARCH ASSOCIATE II (2015- 2016)
San Diego State University Research Foundation
Lab of Forest Rowher, Ph.D.; Cell & Molecular Biology
San Diego State University Research Foundation
Research Aims: Worked on projects associated with cystic fibrosis and gut microbiome. Experimental design, protocol writing and wet lab execution. Organization of weekly meetings and mentoring undergrads. Education outreach. Biohazard safety support.

LAB INSTRUCTOR (2012 - 2018)
Human Physiology Lab; Biology 261 & 436

Lecturer: Karin Nogard-Summnicht, Ph.D.

Taught 2-3 lab sections per semester. Coursework and weekly experiments covering fundamentals of human physiology for nursing and pre-medical school students.

San Diego State University

RESEARCH ASSISTANT

(2002-2006)

Group Director: Yixin Wang, Ph.D.

Johnson & Johnson

Research Aims: Worked in lab assisting senior researchers studying molecular cancer diagnostics at Veridex division of Johnson and Johnson. Duties included literature support and RNA/miRNA isolation from tumor cells.

PUBLICATIONS

- 1.) **Boling L**, Cuevas D, Grasis J, Kang H, Knowles B, Levi K, Maughan H, McNair K, Rojas M, Sanchez S, Smurthwaite C, Rowher F. Dietary antimicrobials and prophage inducers - towards landscaping of the human gut microbiome. In press: *Gut Microbes* 2019
- 2.) Knowles B, Bailey B, **Boling L**, Breitbart M, Cobián-Güemes A, Del Campo J, Edwards R, Felts B, Grasis J, Haas AF, Katira P, Kelly LW, Luque A, Nulton J, Paul L, Peters G, Robinett N, Sandin S, Segall A, Silveira C, Youle M, Rohwer F. Variability and host density independence in inductions-based estimates of environmental lysogeny. *Nat Microbiol* 2017 Apr 28;2:17064
- 3.) Dulith BE, Cassman N, McNair K, Sanchez SE, Silva GGZ, **Boling L**, Barr JJ, Speth DR, Seguritan V, Aziz RK, Felts B, Dinsdale EA, Mokili JL, Edwards RA. A highly abundant bacteriophage discovered in the unknown sequences of human faecal metagenomes. *Nature Communications* 2014; Jul 24;5:4498.

PRESS

Researchers Try To ‘Sculpt The Gut’ To Improve Health

<https://www.kpbs.org/podcasts/san-diego-news-now/2020/feb/24/researchers-try-sculpt-gut-improve-health-and-oth/>