

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.  
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Simmons-Gonzales, Leilani

eRA COMMONS USER NAME (credential, e.g., agency login): SimmonsL

POSITION TITLE: Graduate Student Research Assistant

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
Purdue University	BA	08/2014	05/2018	Biological Chemistry
UC San Diego	PHD	08/2018	05/2023 (Expected)	Molecular Biology

**A. Personal Statement**

I first became interested in human health and disease in high school when I was awarded an NIH Diversity Supplement to work as a research technician for two summers in Dr. Indira Creative's lab at the University of Hawaii. I continued to pursue this interest as an undergraduate at Purdue University, where I conducted research with Dr. Daniel Richardson on the mechanisms of action of a new class of small molecules for cancer treatment. This resulted in a co-authorship publication, as well as an invitation to present a poster at the annual Oncological meeting in Denver, Colorado. By the end of my undergraduate career, I knew that I wanted to pursue a long-term career in research. For my graduate training at UC San Diego, I have moved into the fields of genetics and biochemistry by studying the signaling and motility mechanisms of cancer cells, under the mentorship of Dr. Nani Green. Dr. Green is an internationally recognized leader in the field of cancer genetics and has an extensive record for training predoctoral and postdoctoral fellows. Along with giving me new conceptual and technical training, the proposed training plan outlines a comprehensive set of career development activities and workshops. I will have opportunities to engage in public speaking, conduct literature analysis, consider biomedical ethics, and learn about varied career options. For my initial project, I am currently developing a novel protocol for the identification of transcription complexes involved in cancer signaling pathways, which I hope to submit as a first author publication in the next few months. As a native Hawaiian, I am the first in my family to graduate from college, and I am excited to continue making great strides with my education. Overall, I believe that my current research setting in conjunction with my proposed training plan will provide a solid foundation for my long-term goal to become an academic researcher.

1. Nieman PY, **Simmons-Gonzales L**, Richardson, D. Gen Y: a novel small molecule with cytotoxic abilities targeting colon cancer cells. Cellular and Molecular Biology. 2018 June. 7(20):13672-78.

**B. Positions, Scientific Appointments, and Honors****Positions and Scientific Appointments**

2019 – 2020      Robertson Fellowship for Outstanding Graduate Students, Genetics Department, UC San Diego

2018 – Present    Graduate Research Assistant, UC San Diego

2016 – 2018      Lab Technician, University of Hawaii

2014 – Present    Member, Association for Women in Science

2014 – Present Member, Sigma Xi  
 2014 – 2016 Diversity Supplement, National Institutes of Health

### Honors

2020 Virtual Poster Presenter, Genetics and Molecular Biology Meeting  
 2019 Poster Presenter, Advances in Cancer Research and Therapy Meeting  
 2018 Paula F. Laufenberg award for best senior project in the Biology Department, Purdue University  
 2014 – 2018 Scholarship, National Merit Scholarship Program  
 2014 Scholarship, Daughters of Hawaii Society

### C. Contributions to Science

2. **High School Research:** I spent two summers doing research in the laboratory of Dr. Indira Creative at University of Hawaii, funded by a NIH Diversity Supplement award. Dr. Creative has developed several new anti-fungal drugs that might protect against skin infections. Over the course of two summers I set up in vitro cultures of skin cell lines and conducted a wide range of toxicity assays. We were excited to find that one of the new agents showed almost no toxicity, even at fairly high doses. Dr. Creative is now testing the drug in animals exposed to different types of fungal infections, including *Candida albicans*.
  1. Footman B, Eisser JK, **Simmons-Gonzales, L**, Creative IM. Testing XXH for toxicity in vitro. University of Hawaii Research Symposium; 2012 May; Manoa, HI.
3. **Undergraduate Research:** I was part of a project in the laboratory of Dr. Daniel Richardson at Purdue University. Dr. Richardson's laboratory studies the mechanisms of action of small molecules for cancer treatment. During my time in his lab I was looking at how a new small molecule, Gen Y, is able to target cancerous cells. My contributions to this work were included in a publication recently accepted in Cellular and Molecular Biology. The work was particularly exciting because it looks like the mechanism of action of Gen Y might be completely novel, making it a potential candidate for treating patients afflicted with colon cancer. Dr. Richardson was recently awarded a patent for this new drug.
  1. Nieman PY, **Simmons-Gonzales L**, Richardson, D. Gen Y: a novel small molecule with cytotoxic abilities targeting colon cancer cells. Cellular and Molecular Biology. 2018 June. 7(20):13672-78.
  2. **Simmons-Gonzales, L**, Richardson, D. Testing the ability of a small molecule, Gen Y, to target colon cancer cells. Advances in Cancer Research and Therapy; 2019 September; Denver, CO.
4. **Graduate Research:** My ongoing predoctoral research is focused on transcriptional gene regulation and signaling impacting motility of cancer cells. I believe the results from my research will likely be highly relevant to human health as they will provide new details into the workings of complex biological systems, which will allow for further extrapolations into the development of several types of cancer and their progression. I am currently developing a novel protocol for the identification of transcription complexes involved in cancer signaling pathways, which I hope to submit as a first author publication in the next few months.
  1. **Simmons-Gonzales, L**, Green, N. A tandem identification approach for transcriptional complexes involved in the signaling and motility of cancerous cells. Genetics and Molecular Biology Virtual Meeting; 2020 September

### D. Scholastic Performance

YEAR	COURSE TITLE	GRADE
PURDUE UNIVERSITY		
2014	Introductory Biology	A
2014	Introductory Biology Lab	A
2014	Foundations of Chemical Principles	A

YEAR	COURSE TITLE	GRADE
2014	French and Francophone World	A
2014	Ethics, Religion, and Culture Today	A
2015	Organismal and Population Biology	B
2015	Omics	B
2015	First Year Seminar: Nation and Migration	A
2015	Statistics, Probability, and Reliability	A
2015	Calculus I	B
2015	General Physics I	B
2015	Introductory Chemistry	A
2015	Population & Ecol Genetics	A
2015	Organic Chemistry	B
2016	American Literature	B
2016	General Physics II	B
2016	Organic Chemistry II	B
2016	Microbial Pathogenesis and the Immune Response	A
2016	Introduction to Cognitive Science	A
2016	Self Defense	P
2016	Biological Chemistry	B
2017	Anthropology of Childhood and the Family	A
2017	Disease, Culture, and Society in the Modern World	A
2017	Intro to Psychology	A
2017	Health & Fitness Walking	P
2017	State & Local Govt	A
2017	Human Genetic20	A
2017	Senior Project	A
2017	Bioinformatics	B
2018	Cell Biology	A
2018	Quantitative Analysis	B
2018	Quantitative Analysis Lab	A
2018	Physics in Modern Medicine	A
2018	Ethical Principles in Law and Economics	B
2018	Bowling	P
2018	Genomics and Systems Biology	A
2018	Senior Project	A
	UC SAN DIEGO	
2018	Seminar in Genetics	P
2018	Statistics for the Life Sciences	P
2018	Ethics in Biological Research	CRE
2019	Seminar in Physiology and Behavior	P
2019	Cancer Immunology	P
2020	Mechanisms of Cell Motility	P
2020	Biochemical Mechanisms of Cancer Cells	P
2020	Toxicology	P
2020	Physiology for the Molecular Biologist	P

Except for the scientific ethics course, UC San Diego graduate courses are graded P (pass) or F (fail). Passing is C plus or better. The scientific ethics course is graded CRE (credit) or NC (no credit). Students must attend at least seven of the eight presentation/discussion sessions for credit.