

**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: Robertson-Chang, Leilani

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

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	END DATE MM/YYYY	FIELD OF STUDY
Swarthmore College	BA	08/2008	05/2012	Biology
UC San Diego	PHD	08/2012	05/2018	Molecular Biology

**A. Personal Statement**

My long term research interests involve the development of a comprehensive understanding of key developmental pathways and how alterations in gene expression contribute to human disease. My academic training and research experience to date have provided me with an excellent background in molecular biology and microbiology. While in high school I was awarded an NIH Diversity Supplement award to work as a research technician for two summers in Dr. Indira Creative's lab at the University of Hawaii. As an undergraduate at Swarthmore College, I conducted research with Dr. Xavier Factor on the mechanisms of action of a new class of antibiotics. This resulted in a co-authorship publication, as well as an invitation to present a poster at the annual Antibiotica meeting in Denver, Colorado. For my graduate training at UC San Diego, I have moved into the fields of genetics and biochemistry by studying the regulation of transcription in yeast, under Dr. Tanti Auguri. Dr. Auguri is an internationally recognized leader in the field of yeast 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 set of career development activities and workshops – e.g. public speaking, literature analysis, biomedical ethics, and career options. For my initial project I am currently developing a novel protocol for the purification for components of large transcription complexes 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 so I am excited to keep pushing forward with my education. Overall, I feel that my choice of sponsor, research project, and the training I will get from this fellowship will give me a solid foundation for my long-term goal to become an academic researcher.

1. Robertson-Chang L, Factor X. Testing the ability of antibiotic Gen Y to kill Gram-negative bacteria. Antibiotica annual meeting; 2011 September; Denver, CO.
2. Robertson-Chang L, Auguri T. A tandem affinity purification tag approach allows for isolation of interacting proteins in *Saccharomyces cerevisiae*. Yeast Genetics and Molecular Biology Meeting; 2013 September; Seattle, WA.

## B. Positions and Honors

### Positions and Employment

2007 - 2008    Lab Technician, University of Hawaii  
2012 -            Graduate Student Research Assistant, UC San Diego

### Other Experience and Professional Memberships

2007 -            Member, Association for Women in Science  
2009 -            Member, Sigma Xi

### Honors

2007 - 2008    Diversity Supplement, National Institutes of Health  
2008             Scholarship, Daughters of Hawaii Society  
2008 - 2012    Scholarship, National Merit Scholarship Program  
2012             Paula F. Laufenberg award for best senior project in the Biology Department, Swarthmore College

## C. Contribution to Science

- High School Research:** I spent two summers doing research in the laboratory of Dr. Indira M. 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*.
  - Footman B, Eisser JK, Robertson-Chang L, Creative IM. Testing XXH for toxicity in vitro. University of Hawaii Research Symposium; 2008 May; Manoa, HI.
- Undergraduate Research:** I was part of a project in the laboratory of Dr. Xavier Factor at Swarthmore College. Dr. Factor's laboratory studies the mechanisms of action of antibiotics. During my time in his lab I was looking at how a new antibiotic, Gen Y, is able to unravel bacterial DNA. 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 used by Factor Y might be completely novel, making it a potential candidate for treating patients infected with antibiotic resistant organisms. Dr. Factor was recently awarded a patent for this new drug.
  - Nieman PY, Robertson-Chang L, Factor X. Gen Y: a novel antibiotic with DNA unwinding abilities. Cellular and Molecular Biology. In press.
  - Robertson-Chang L, Factor X. Testing the ability of antibiotic Gen Y to kill Gram-negative bacteria. Antibiotica annual meeting; 2011 September; Denver, CO.
- Graduate Research:** My ongoing predoc research is focused on transcriptional gene regulation in *Saccharomyces cerevisiae*. 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 certain diseases and their progression. I am currently developing a novel protocol for the purification of components of large transcription complexes which I hope to submit as a first author publication in the next few months.

- a. Robertson-Chang L, Auguri T. A tandem affinity purification tag approach allows for isolation of interacting proteins in *Saccharomyces cerevisiae*. Yeast Genetics and Molecular Biology Meeting; 2013 September; Seattle, WA.

## D. Additional Information: Research Support and/or Scholastic Performance

### Scholastic Performance

YEAR	COURSE TITLE	GRADE
SWARTHMORE COLLEGE		
2008	Cellular and Molecular Biology	A
2008	Foundations of Chemical Principles	A
2009	Organismal and Population Biology	B
2009	Omics	B
2008	First Year Seminar: Nation and Migration	A
2009	Statistics, Probability, and Reliability	A
2009	Calculus I	B
2009	General Physics I	B
2009	Introductory Chemistry	A
2009	Organic Chemistry	B
2010	American Literature	B
2010	General Physics II	B
2010	Organic Chemistry II	B
2010	Microbial Pathogenesis and the Immune Response	A
2010	Introduction to Cognitive Science	A
2010	Biological Chemistry	B
2011	Anthropology of Childhood and the Family	A
2011	Disease, Culture, and Society in the Modern World	A
2011	Human Genetics	A
2011	Senior Project	A
2011	Bioinformatics	B
2012	Cell Biology	A
2012	Physics in Modern Medicine	A
2012	Genomics and Systems Biology	A
2012	Senior Project	A
UC SAN DIEGO		
2012	Seminar in Genetics	P
2013	Statistics for the Life Sciences	P
2013	Ethics in Biological Research	CRE
2014	Seminar in Physiology and Behavior	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.