

## BIOGRAPHICAL SKETCH

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NAME: Robertson-Chang, Leilani

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

POSITION TITLE: Postdoctoral Researcher

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
Swarthmore College	BS	08/1995	05/1999	Engineering
UC San Diego	PHD	08/2001	09/2007	Molecular Biology
Michigan State University	NIH training grant	09/2007	present	Bioinformatics/Immunology

### 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 have provided me with an excellent background in multiple biological disciplines including molecular biology, microbiology, biochemistry, and genetics. As an undergraduate, I was able to conduct research with Dr. Xavier Factor on the mechanisms of action of a new class of antibiotics. As a predoctoral student with Dr. Tanti Auguri, my research focused on the regulation of transcription in yeast, and I gained expertise in the isolation and biochemical characterization of transcription complexes. I developed a novel protocol for the purification for components of large transcription complexes. I was first author of the initial description of the Most Novel Complex. A subsequent first author publication challenged a key paradigm of transcription elongation and was a featured article in a major journal. During my undergraduate and graduate careers, I received several academic and teaching awards. For my postdoctoral training, I will continue to build on my previous training in transcriptional controls by moving into a mammalian system that will allow me to address additional questions regarding the regulation of differentiation and development. My sponsor Dr. I.M. Creative is an internationally recognized leader in the transcription/chromatin field and has an extensive record for training postdoctoral fellows. The proposed research will provide me with new conceptual and technical training in developmental biology and whole genome analysis. In addition, the proposed training plan outlines a set of career development activities and workshops – e.g. grant writing, public speaking, lab management, and mentoring students – designed to enhance my ability to be an independent investigator. My choice of sponsor, research project, and training will give me a solid foundation to reach my goal of studying developmental diseases in man. During my second postdoctoral year in Dr. Creative's lab my father had a severe stroke that eventually ended his life. I was out of the lab for six months dealing with my father's incapacitating illness and end-of-life issues. This hiatus in training reduced my scientific productivity.

1. Robertson-Chang L, Schneider K, Chen M, Auguri T. Rapid isolation and characterization of the most novel transcription complex in *Saccharomyces cerevisiae* and its role in transcription elongation. CSHL Meeting on Mechanisms of Eukaryotic Transcription; 2009 August; Cold Spring Harbor, NY.
2. Robertson-Chang L, Schneider K, Chen M, Auguri T. Rapid isolation and characterization of the most novel transcription complex in *Saccharomyces cerevisiae* and its role in transcription elongation. *Cell*. 2006; 128:770.

3. Robertson-Chang L, Auguri T. A tandem affinity purification tag approach allows for isolation of interacting proteins in *Saccharomyces cerevisiae*. *Proceedings of the National Academy of Sciences of the United States of America*. 2004; 98:151.

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

### **Positions and Employment**

2008 –	Postdoctoral Researcher, Michigan State University
2007 – 2007	Postdoctoral Researcher, UC San Diego
1999 – 2001	Engineer, The IBeam Group

### **Other Experience and Professional Memberships**

2002 –	Member, National Society for Bioinformatics and Biotechnology
2000 –	Member, Association for Women in Science
1997 –	Member, Sigma Xi

### **Honors**

2002 – 2005	Predoctoral Fellowship for Minorities, Ford Foundation
2001	STAR award for public service in engineering, The IBeam Group
1999	B.S. awarded with high honors, Swarthmore College
1999	Paula F. Laufenberg award for best senior project in the Department of Engineering, Swarthmore College
1995 – 1999	Scholarship, National Merit Scholarship Program
1995 – 1997	Scholarship, Daughters of Hawaii Society

## **C. Contribution to Science**

1. **Early Career:** My early career contributions were focused on applying my knowledge of structural engineering to improving the design and integrity of tensile structures. More specifically, I worked with a team of engineers at the IBeam Group to develop concrete with a higher tensile strength that could be utilized in large structures such as suspension bridges. My particular role in the project was to identify candidate polymers, determine the ultimate tensile strength of these polymers, and make recommendations as to which polymer would afford concrete the most structural integrity under various stresses.
  - a. Lorentson C, Robertson-Chang L, Sauer N, Mehta S. Use of high-tensile concrete in cantilevered structures. *J Applied Engineering*. 2000; 63:413.
  - b. Robertson-Chang L, Janessa AJ. Redesigning the Golden Gate bridge. *National Undergraduate Symposium on Science and Engineering*; 1998; Baltimore, MD. c1998.
2. **Graduate Career:** My graduate research contributions focused on transcriptional gene regulation in *Saccharomyces cerevisiae*. Results from my research were highly relevant as they provided new details into the workings of complex biological systems, and allowed for further extrapolations into the development of certain diseases and their progression. I originally developed a novel protocol for the purification for components of large protein complexes. A subsequent publication, in which I isolated and characterized a long sought after transcription complex, challenged a key paradigm of transcription elongation and was a featured article in a major journal.
  - a. Robertson-Chang L, Schneider K, Chen M, Auguri T. Rapid isolation and characterization of the most novel transcription complex in *Saccharomyces cerevisiae* and its role in transcription elongation. *CSHL Meeting on Mechanisms of Eukaryotic Transcription*; 2009 August; Cold Spring Harbor, NY.
  - b. Robertson-Chang L, Schneider K, Chen M, Auguri T. Rapid isolation and characterization of the most novel transcription complex in *Saccharomyces cerevisiae* and its role in transcription elongation. *Cell*. 2006; 128:770.