

**APPLICANT BIOGRAPHICAL SKETCH—Instructions  
(see below for Actual Postdoctoral Sample)**

Use only for individual predoctoral and postdoctoral fellowships, dissertation research grants (R36), and Research Supplements to Promote Diversity in Health-Related Research (Admin Suppl). DO NOT EXCEED FIVE PAGES.

NAME OF APPLICANT:

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

POSITION TITLE:

EDUCATION/TRAINING *(Most applicants will begin with baccalaureate or other initial professional education, such as nursing. Include postdoctoral training and residency training if applicable. High school students should list their current institution and associated information. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	START DATE MM/YYYY	END DATE <i>(or expected end date)</i> MM/YYYY	FIELD OF STUDY

**NOTE: The Biographical Sketch may not exceed five pages. Follow the formats and instructions below.**

**A. Personal Statement**

Briefly describe why you are well-suited to receive the award for which you are applying. The relevant factors may include aspects of your training; your previous experimental work on this specific topic or related topics; your technical expertise; your collaborators or scientific environment; and your past performance in this or related fields (you may mention specific contributions to science that are not included in Section C). Also, you may identify up to four peer-reviewed publications that specifically highlight your experience and qualifications for this project. If you wish to explain impediments to your past productivity, you may include a description of factors such as family care responsibilities, illness, disability, and active duty military service.

- **R36 Applicants (PD/PI) Only:**  
In addition to the information outlined above, include a description of your career goals and intended career trajectory, as well as your interest in the specific areas of research designated in the FOA.
- **Diversity Supplement Candidates Only:**  
In addition to the information outlined above, include a description of your general scientific achievements and/or interests, as well as your specific research objectives and career goals. Indicate any source(s) of current funding.

**B. Positions and Honors**

List in chronological order all non-degree training, including postdoctoral research training, all employment after college, and any military service. High school students and undergraduates may include any previous positions. Clinicians should include information on internship, residency and specialty board certification (actual and anticipated with dates) in addition to other information requested. This information is used in the reviewing the application and in determining the stipend level for Postdoctoral Fellowships. State the Activity/Occupation and include start/end dates, field, name of institution/company, and the name of your supervisor/employer. If

you are not currently located at the applicant organization, include your projected position at the applicant organization as well.

ACTIVITY/ OCCUPATION	START DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/ COMPANY	SUPERVISOR/ EMPLOYER

**Academic and Professional Honors**

List any academic and professional honors that would reflect upon your potential for a research career and qualifications. Include all scholarships, traineeships, fellowships, and development awards. Indicate sources of awards, dates, and grant or award numbers. List current memberships in professional societies, if applicable.

**C. Contributions to Science (for predoctoral students and more advanced candidates only; high school students, undergraduates, and postbaccalaureates should skip this section)**

Considering your level of experience, briefly describe your most significant contributions to science. While all applicants may describe up to five contributions, graduate students and postdoctorates are encouraged to consider highlighting two or three they consider most significant. These may include research papers, abstracts, book chapters, reviews, as well as non-publication research products, such as materials, methods, models, or protocols. For each contribution, indicate the historical background that frames the scientific problem; the central finding(s); the relevance of the finding(s) to science, technology, or public health; and your specific role in the described work. For each contribution, you may reference up to four peer-reviewed publications or other non-publication research products (can list audio or video products; patents; data and research materials; databases; educational aids or curricula; instruments or equipment; models; protocols; and software or netware) that are relevant to the described contribution. The description of each contribution should be no longer than one half page including figures and citations. Please also provide a URL to a full list of your published work as found in a publicly available digital database such as SciENcv or My Bibliography, which are maintained by the US National Library of Medicine. Manuscripts listed as “pending publication” or “in preparation” should be included and identified. Indicate if you previously used another name that is reflected in any of the citations.

**D. Scholastic Performance**

Predocctoral applicants: Using the chart provided, list by institution and year all undergraduate and graduate courses with grades. In addition, in the space following the chart, explain any marking system if other than 1-100, A, B, C, D, F, or 0-4.0 if applicable. Show levels required for a passing grade.

Postdoctoral applicants: Using the chart provided, list by institution and year all undergraduate courses and graduate scientific and/or professional courses germane to the training sought under this award with grades. In the space following the chart, explain any marking system if other than 1-100, A, B, C, D, F, or 0-4.0 if applicable. Show levels required for a passing grade.

YEAR	SCIENCE COURSE TITLE	GRADE	YEAR	OTHER COURSE TITLE	GRADE

---

**APPLICANT BIOGRAPHICAL SKETCH SAMPLE—POSTDOCTORAL FELLOWS**

(Note this Sample is for a Postdoctoral Fellowship Applicant only and does not include information specific to R36 or Diversity Supplements. For a Predoctoral Fellowship Sample, See: <http://grants.nih.gov/grants/funding/424/predocfellowshipbiosample.docx> )

Use only for individual predoctoral and postdoctoral fellowships, dissertation research grants (R36), and Research Supplements to Promote Diversity in Health-Related Research (Admin Suppl). DO NOT EXCEED FIVE PAGES.

---

NAME OF APPLICANT: Leilani Robertson-Chang

---

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

---

POSITION TITLE: Postdoctoral Researcher

---

EDUCATION/TRAINING *(Most applicants will begin with baccalaureate or other initial professional education, such as nursing. Include postdoctoral training and residency training if applicable. High school students should list their current institution and associated information. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	START DATE MM/YYYY	END DATE <i>(or expected end date)</i> MM/YYYY	FIELD OF STUDY
Swarthmore College	B.S.	08/1995	05/1999	Engineering
UC San Diego	Ph.D.	08/2001	09/2007	Molecular Biology
Michigan State University (postdoc)	n/a	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.

## B. Positions and Honors

ACTIVITY/ OCCUPATION	START DATE (mm/yy)	END DATE (mm/yy)	FIELD	INSTITUTION/ COMPANY	SUPERVISOR/ EMPLOYER
Engineer	08/99	06/01	Structural engineering	The IBeam Group	Sandip Mehta
Postdoc	10/07	12/07	Molecular biology	UC San Diego	G. Chadwick Murray
Postdoc	01/08	present	Bioinformatics/ Immunology	Michigan State University	I.M. Creative

### Academic and Professional Honors

Daughters of Hawaii Scholarship, 1995-1997

National Merit Scholarship, 1995-1999

Paula F. Laufenberg award for best senior project in the Department of Engineering, Swarthmore College, 1999

B.S. awarded with high honors, Swarthmore College, 1999

STAR award for public service in engineering, The IBeam Group, 2001

Ford Foundation Predoctoral Fellowship for Minorities, 2002-2005

### Memberships in Professional Societies

Sigma Xi

Association for Women in Science

National Society for Bioinformatics and Biotechnology

## C. Contributions to Science

My Contributions to Science are organized into three time periods: I. Early Career; II. Graduate Career; and III. Postdoctoral Career.

I. 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.

### Research papers

Lorentson, C., Robertson-Chang, L., Sauer, N., and Mehta, S. 2000. Use of high-tensile concrete in cantilevered structures. *J. Applied Engineering* 63, 413-424.

### Abstracts

Robertson-Chang, L. and Janessa, A.J. 1998. Redesigning the Golden Gate bridge. Abstract for poster presentation, National Undergraduate Symposium on Science and Engineering, Baltimore, MD.

II. 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.

## **Research papers**

Robertson-Chang L and Auguri, T. 2004. A tandem affinity purification tag approach allows for isolation of interacting proteins in *Saccharomyces cerevisiae*. Proc Natl Acad Sci U S A. 98, 151-60.

Robertson-Chang L, Schneider K, Chen M, Auguri T. 2006. Rapid Isolation and Characterization of the Most Novel Transcription Complex in *Saccharomyces cerevisiae* and its role in transcription elongation. Cell. 128, 770-9.

## **Abstracts**

Robertson-Chang L and Auguri, T. A tandem affinity purification tag approach allows for isolation of interacting proteins in *Saccharomyces cerevisiae*. Abstract for poster presentation, 2004 Yeast Genetics and Molecular Biology Meeting, Seattle, Washington, September 2004.

Roberson-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. Oral presentation, 2006 CSHL Meeting on Mechanisms of Eukaryotic Transcription. Cold Spring Harbor, NY, August 2006.

III. Postdoctoral Career: As a postdoctoral fellow, my research has provided a compelling link between mutations arising in stress response proteins and the development of various autoimmune diseases in humans. Previous studies have shown dysregulation in the innate immune response lead to autoimmune diseases in humans. A few Rtc homologues have now been identified in humans and appear to play a role in the regulation of genes in the innate immune response. My research is focused on the transcriptional regulator Rtc from *Drosophila melanogaster*. I have shown that specific mutations affecting Rtc lead to disruptions in downstream gene regulation involved in the innate immune response.

## **Research papers**

Robertson-Chang, L., Yager, L.N., and Murray, G.C. 2007. Rtc is an essential component of the *Drosophila* innate immune response. Genetics 145, 884-891.

Yao, M., Dionne, C.-F., Robertson-Chang, L., and Murray, G.C. 2007. Up-regulation of *Drosophila* innate immunity genes in response to stress. Science 304, 1754-1756.

Robertson-Chang, L., Cescaloo, Q., and Murray, G.C. 2008. Structural analysis of *Drosophila* Rtc. In preparation.

## **Reviews**

Robertson-Chang, L. and Murray, G.C. 2006. Stress, flies, and videotape: the *Drosophila* stress response. Ann. Rev. Physiol. 346, 223-245.

Complete List of Published Work in MyBibliography:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/collections/public/1tay8xsxteXlw5R2StTcjhq5X/?sort=date&direction=ascending>

## **D. Scholastic Performance**

YEAR	SCIENCE COURSE TITLE	GRADE	YEAR	OTHER COURSE TITLE	GRADE
SWARTHMORE COLLEGE			SWARTHMORE COLLEGE		
1996	Introduction to Molecular Biology	A	1995	Introduction to Engineering	A
1996	Introductory Chemistry I	B	1995	Calculus I	A
1996	Physics for Engineers	A	1996	Calculus II	B
1997	Introductory Chemistry II	C	1996	Structures and Design	A
1997	Organic Chemistry I	A	1996	Linear Algebra	B
1998	Organic Chemistry II	A	1997	Structural Materials	B
1998	Biochemistry	A	1997	Structural Materials Laboratory	A
1999	Cell Biology	A	1997	Numerical Computation & Graphics Tools	A

YEAR	SCIENCE COURSE TITLE	GRADE	YEAR	OTHER COURSE TITLE	GRADE
	UC SAN DIEGO		1997	Engineering Graphics and Computer-Assisted Design	A
2001	Seminar in Genetics	P	1997	Principles of Structural Design I	B
2002	Statistics for the Life Sciences	P	1997	Statistics, Probability, and Reliability	A
2003	Ethics in Biological Research	CRE	1998	Principles of Structural Design II	A
2004	Seminar in Physiology & Behavior	P	1999	Senior Project	A

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.