OMB No. 0925-0001 (Rev. 08/12 Approved Through 8/31/2015)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| FELLOWSHIP APPLICANT BIOGRAPHICAL SKETCH Use only for individual predoctoral and postdoctoral fellowships. DO NOT EXCEED FOUR PAGES. | | | | |
|  | | | | |
| NAME OF FELLOWSHIP APPLICANT  Leilani Robertson-Chang | | POSITION TITLE  Postdoctoral researcher | | |
| eRA COMMONS USER NAME (credential, e.g., agency login)  RobertsonL | |
| EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)* | | | | |
| INSTITUTION AND LOCATION | DEGREE  *(if applicable)* | | MM/YY | FIELD OF STUDY |
| Swarthmore College | B.S. | | 05/1999 | Engineering |
| UC San Diego | Ph.D. | | 09/2007 | Molecular biology |
| Michigan State University (postdoc) | n/a | | n/a | Bioinformatics |
|  |  | |  |  |
|  |  | |  |  |

Please refer to the application instructions in order to complete sections A, B, C, and D of the Biographical Sketch.

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

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. I.M.’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.** List in chronological order all non-degree training, including postdoctoral research training, all employment after college, and any military service. Clinicians should include information on internship, residency and specialty board certification (actual and anticipated with dates) in addition to other information requested. State the Activity/Occupation and include beginning/end dates, field, name of institution/company, and the name of your supervisor/employer.

B. Positions and Honors

| ACTIVITY/OCCUPATION | BEGINNING DATE (mm/yy) | ENDING 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 | Michigan State University | I.M. Creative |
|  |  |  |  |  |  |

Academic and Professional Honors

List any academic and professional honors. Include all scholarships, traineeships, fellowships, and development awards other than Kirschstein-NRSA. Indicates sources of awards, dates, and grant or award numbers. List current memberships in professional societies, if applicable.

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. Selected Publications and Patent Citations.** List your entire bibliography, separating research papers, abstracts, book chapters, reviews and patent citations. Within each subsection the list should be chronological. Manuscripts “submitted for publication” or “in preparation” should be included and identified. For publicly available citations, URLs or PMC submission identification numbers may accompany the full reference: copies of publicly available publications are not accepted as appendix material.

C. Selected Publications and Patent Citations

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.

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.

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.

Robertson-Chang, L., Dionne, C-F., Yager, L.N. and Murray, G.C. 2007. Characterization of Rtc, an essential component of the innate immune response. Abstract for poster presentation, 48th Annual Drosophila Research Conference, Bozeman, MT.

Robertson-Chang, L. Using the Pugh-Andersen algorithm to evaluate microarray data. Abstract (submitted) for platform presentation, National Society for Bioinformatics and Biotechnology Annual Conference, Charleston, SC, November 2008.

Reviews

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

**D. Scholastic Performance. Predoctoral applicants:** Using the chart provided, list by institution and year all undergraduate and graduate courses with grades. **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 marking system if other than 1-100; A, B, C, D, F, or 0 – 4.0. Show level required for passing. Predoctoral applicants should provide Graduate Record Examination scores, if available. MD/PhD applicants should provide MCAT scores, if available.

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