Associate Dean for Graduate Studies
R. Michael Mulligan, Prov. &
Graduate Studies at UCI
The NSF GRFP Fellowship and Graduate Fellowship Opportunities

Dr. Harinder Singh:

Academic and fellowship support programs offered through GPS-STEM

Associate Dean Mulligan:

Professional Support as a Continuum: opportunities from pre-doc to professional researcher

Kevin Cabrera

DCB (cell biology/pathogenesis)

Jessica Noche Lingad

NBB (neurosci/cognition/imaging)

Karissa Jade Munoz

DCB (genomics)

Tiffany Nada Batarseh

MBB (molecular/structural biology)

Kristin Gabriel

EEB (genomics)

Linzi Hosohama

DCB (cell biology/pathogenesis)

MMG (cancer biology)

WMC (cancer biology)
We aim to better prepare our scientists for a variety of careers within the biomedical research workforce, and empower them to become not only skilled researchers, but also polished professionals.
Approach to Career Readiness: 4 Elements

Program Structure

UCI-GPS

TRANSITION

TRAIN

EXPLORE

EXPERIENCE

STEM
10 Week Course

- Listening to Podcasts (NIH & Nature)
- Lessons Learned Panel Discussion
- Experience Writing & Receiving Grants
- Peer-Peer Work Facilitated by Trainees & Faculty with Peer-Peer Working Groups

F-SERIES (F31, F32)

Lessons Learned:

- What could we improve?
- What did we do well?

Mistakes to avoid:

F-SERIES (F31, F32)

Graduate Students & Postdocs

Fellowship Success for GPS-STEM Academic Advancement Activities
FREE

UCI Trainees

NATURE

Masters Classes

Communication
Great Writing
Great Ideas
Great Knowledge
Researcher
What Makes

Match STEM Academic Advancement Activities
Professional Support on a Continuum: Pre-doc to Professional Researcher

Pre-doctoral Fellowships

Faculty Transition Grants and Fellowships

Post-doctoral Fellowships

Academic Publication Opportunities

Training Grant Opportunities

Pre-doctoral Fellowships

GSP STEM
Pre-doc Fellowship Opportunities

Fellowship Opportunities

NSF GRFP
NIH NRSA (F-31)
EPA
NOAA
Ford Foundation
HHMI Gilliam Fellowship

Resources at other campuses:
https://grad.ucdavis.edu/financial
https://grad.ucla.edu/funding/
Postdoctoral Fellowships for Outstanding Scholars

UC President’s Postdoctoral Fellowship

Postdoctoral fellowships for outstanding scholars
• research, teaching, service contribute to diversity & equal opportunity
• increasing equitable access for underrepresented groups

Awards
• research at any UC campus
• salary, benefits, $5K for research-related expenses

Eligibility
• must receive a Ph.D. prior to fellowship start
• 1 yr. apt., renewable
• support for initial faculty appointment at a UC campus
• legally authorized to work in the United States, includes DACA

Resources:
• watch for campus workshops
• several alumni in the SoBS

Application:
• typically in November

Individuals
• application: typicallly in November
Program Objectives:

• Prepare a strong cohort of NIH-supported, independent investigators
• Facilitate transition from post-doc to tenured faculty positions
• Provides independent NIH research support for transition to competitive research careers
• U.S. citizen/non-citizen, doctoral degree, and no more than 4 yrs post-doctoral research experience

Research Career Development Awards:

NIH K99/R00 "Pathway to Independence Award"
Preparation of a Competitive NSF GRFP Application

Overview

Resources: Campus & School

Review Criteria, Statements, & References

GRFP and Biomedical Research

Outreach Opportunities
GRFP Objectives & Elements

Deadline for submission in Life Sciences is Monday, Oct. 19, 2020!

Objectives:

• Increase STEM early-career grad fellowships
• Develop a diverse and globally engaged workforce
• Support for promising scientists with a societal impact
• Funds scholars, not grants or research projects

Award Benefits:

• Five Year Award – $138K
• Three years of financial support
  • $12K Educational Allowance
  • $34K Annual Stipend
• GRIP: Professional career development with federal internships
• GROW: International Research Opportunity

New Emphasis for 2020: Artificial Intelligence, Quantum Information, and Computationally Intensive Research

GRFP Objectives & Elements
GRFP Eligibility

• U.S. citizens, permanent residents

• Early-career students (UG, 1st or 2nd yr)

• no MS degree (unless 2+ yr gap)

• Pursuing research-based MS or PhD in NSF field

• Applicants self-certify GRFP eligibility criteria

• Graduate students may submit only once, 1st or 2nd yr.

• Student that submitted as UG may submit as a grad

• Enrolled in accredited U.S. institution by Fall 2021

GRFP Eligibility

• U.S. citizens, permanent residents

• Graduate students may submit only once, 1st or 2nd yr.
Strategy: Submit in yr. 1? or wait for yr. 2?

Applicants are considered separately within peer groups:

- Applicants are ranked within their peer group
- Applicants are considered separately within peer groups

If you have strong Broader Impacts & Intellectual Merit, you have an advantage as UG or 1st yr grad

or wait for yr. 2?

Strategically Submit in yr. 1?
Submit now? or wait a year?

Determine if your academic profile is competitive for Year 1.

If profile could be improved, work on IM & BI.

YES! Apply in Year 1!

If profile is competitive for Year 1,

YES! Apply in Year 1!

If profile could be improved, work on IM & BI apply in Yr. 2

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If profile could be improved, work on IM & BI apply in Yr. 2

YES! Apply in Year 1!

If profile is competitive for Year 1,
If you wait until Year 2, what can you do to improve your application?

- Develop a strong research proposal
- Develop research and writing skills
- Authorship on publication(s)
- Develop and engage in Broader Impacts
- Show consistent participation in Broader Impacts
- Develop strong relationship with research mentors including research faculty, training grant directors
NSF GRFP Cycle & Resources

Application:
Available online August (open)

Deadlines:
Late Oct. (varies by field)

Awards:
Announced late March

Best Time to Start Preparing: In the summer

References:
Reference Writers
Reference Writer Tutorial

Requirements:

Tips

Save a copy of your application
Make sure you follow the formatting instructions
Use the preview feature
Do not wait until the last minute to prepare and submit your application materials
Consider your major field carefully
Note your application deadline

NSF GRFP Website (nsf.gov/grfp)/Fastlane.nsf.gov/grfp

NSF GRFP Cycle & Resources
Graduate Division Activities

Fellowship advising with Dr. Kayleigh Anderson-Natalie available. Click here or email kayleigh@uci.edu

Virtual NSF GRFP Q&A Drop-in Hours

• October 28, 2020, 10:00-11:00 AM
  Learn about the basics of applying for the Ford Predoctoral Fellowship.

Ford Fellowship Information Session

• October 12, 2020, 1:00-2:30 PM
  Learn strategies for writing competitive fellowship materials.

Writing for Fellowships

• October 8, 2020, 9:00-11:00 AM
  Drop-by to ask any questions that you have about NSF GRFP!

NSF GRFP Programs:

NSF Information Session & NSF Writing and Review Session recordings to be distributed to departments and students!
School of Biological Sciences Activities

• Current NSF GRFP recipients willing to assist applicants in proposal preparation (TBA in September)

• Gary Roman has recent applications that were funded

• Current NSF GRFP recipients willing to assist
Complete Application Consists of:

- NSF FastLane

- Personal, Relevant Background and Future Goals Statement (3 pages)

- Graduate Research Statement (2 pages)

- Transcripts, uploaded into FastLane

- Three letters of reference required (4 desirable)

- Additional information required for some candidates

- See Solicitation for eligibility requirements (available on www.nsfgrp.org)
NSF GRFP Review Criteria

Research Statement:

Include in bolded sections in both the Personal and

Text.

Clearly indicate “Intellectual Merit” and “Broader Impacts” with labeled section headings or bolded

achieve-ment of specific, desired societal outcomeseters to benefit society and contribute to the

Broader Impacts: This criterion encompasses

- Intellectual Merit: This criterion encompasses

- Potential to advance scientific knowledge

- Potential to benefit society and contribute to the achievement of specific, desired societal outcomes

- Opportunity to advance scientific knowledge

- Potential to benefit society and contribute to the achievement of specific, desired societal outcomes
Intellectual Merit Review Criteria:

- Applicant's potential to advance knowledge based on holistic review of the application, including:
  - Strength of the academic record
  - Proposed plan of research (hypothesis, experimental approach, impact)
  - Research experience (publications, presentations, references)

Assessed metrics:

- Research experience
- Academic performance
- References
- Publications
- Leadership
- Creativity
- International experience
- Communication skills
- Appropriate institution & project
- Award & honors
- International experience
- Research experience (publications, presentations, proposals, plan of research, hypotheses, experimental approach, impact, strength of the academic record, review of the application, including: applicant's potential to advance knowledge based on holistic review of the application)
Broader Impacts:

- Potential to benefit society and contribute to the achievement of specific outcomes.

The potential for future broader impacts as indicated by:

- Personal & professional activities
- Educational & academic experiences
- Previous and continuing contributions are critical

Recommendations for superior scores:

- Be Specific!
- Be Creative!
- Propose high quality impacts!
- Draw on your previous activities and natural affinities
- Propose high quality impacts!
- Be Creative!
- Be Specific!
Broader Impacts Assessment

Prior accomplishments:
previous contributions predict future behavior

Individual experiences:
Working with disadvantaged/underserved groups

Integration of research & education:

Leadership potential:

How can you best impact society?

Ranking

Sharing research only with scientists guarantees a "poor"

Potential to reach diverse audiences:

Scientific outreach to the community

Blogging, social networking

Integration of research & education:

Individual experiences:
Previous contributions predict future behavior
Personal, Relevant Background and Future Goals Statement (3 pages)

How will the doctorate prepare you for a career that will contribute to scientific understanding and broadly benefit society?

• Describe personal, educational, professional experiences that motivated you to pursue the doctorate.
• Use specific examples from your research & professional activities.
• Be specific about your role in these activities.
• Describe the contributions of your activities to advancing knowledge in STEM fields as well as the potential for broader societal impacts.
• Present a concise description of your previous research. Highlight results and discuss how these activities prepared you to seek a graduate degree.

• Describe educational, personal, professional experiences that motivated you to pursue the doctorate.
• Describe scientific understanding and broadly benefit society.

How will the doctorate prepare you for a career that will contribute to scientific understanding and broadly benefit society?

Personal, Relevant Background and Future Goals Statement (3 pages)
**Graduate Research Plan (2 pages)**

Present an original research topic you plan to pursue.

1st yr. students in CMB/INP should use a rotation topic

**Describe the research plan:**

- **Hypothesis or research question**, rationale, general approach, experimental design, unique resources, timeline, expected outcomes, pitfalls and caveats, alternative strategies.

**Use IM and BI section headings.**

**Be clear, simple, and concise.**

Avoid jargon, include relevant literature citations.

Address the potential of the research to advance scientific knowledge as well as the potential for broader impacts on society.
Recommendations for Letters from References

Select faculty that:

• have previously served as a research advisor
• are current research advisor
• were involved with your recruitment to UCI

Also good choices:

• distinguished senior faculty that you know
• Research/NIH training grant directors
• Directors of ORUs and Centers
• were involved with your recruitment to UCI
• are current research advisor
• have previously served as a research advisor

Select faculty that:

Reference letters are due October 30, 2020 at 4:00 p.m. Eastern Time.

You must have at least 3 letters (consider asking for 4 or 5 letters).
Recommendations for Letters of Support

Each letter should directly address your Intellectual Merit and your Broader Impacts.

Recommendations:

• Write a succinct statement of your research proposal and your broader impacts for your reference in the request for a letter from program solicitation.

• Include instructions or links for letter writers in the request for a letter.

• State that this information should be included in the letter.

• Write a succinct statement of your research proposal and your broader impacts for your reference in the request for a letter.

Recommendaations for Letters of Support
Panelists are academics/researchers in very general areas, not necessarily in your research area.

Applications are separated into levels (UG/1st yr/2nd yr/2+ yr) and compared among peer groups.

Each panelist ranks Intellectual Merit and Broader Impacts and provides a succinct statement for each category.

Applications are individually reviewed by 3 panel members.

A proposal may be referred for discussion by the reviewers.

Applicants receive anonymous copies of the reviews.

Panelists make recommendations, NSF makes award decisions.

Applications are academically/researchers in very general areas.
If you work in a biomedical research area:

- emphasize basic scientific principles
- avoid discussing “disease-related” aspects of your research such as drug development, development of disease therapies, animal disease models.

“Research with disease-related goals, including work on the etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings is normally not supported. Animal models of such conditions or the development or testing of drugs or other procedures for their treatment also are not eligible for support.”
Outreach Activities at UCI

- COSMOS: California State Summer School for Mathematics & Science at www.cosmos.uci.edu
- CAMP: California Alliance for Minority Participation in Science, Engineering and Mathematics at www.camp.uci.edu
- UCI Rocket Science Tutors: http://www.rocketsciencetutors.com
- Mathematics at www.camp.uci.edu
- CAMP: California Alliance for Minority Participation in Science, Engineering and Mathematics at www.cosmos.uci.edu
- The UCI Community Outreach Partnership Center (COPC): Engage the students! www.grad.uci.edu/about-us/diversity/grad-prep-programs/non-uc/
- Graduate Division Summer Research Programs: us/diversity/decade/competitive-edge.html
- Competitive Edge Program: http://www.grad.uci.edu/about-us/diversity/decade
- Graduate Division DECADE Program: http://www.grad.uci.edu/about-us/diversity/decade/index.html
- Graduate Division Mentorship Opportunities:
  - Graduate Division Summer Research Programs: us/diversity/decade/competitive-edge.html
  - Graduate Division DECADE Program: http://www.grad.uci.edu/about-us/diversity/decade/index.html
Outreach Activities in Bio Sci

- **K-12 Outreach:** Work with K-12 teachers with underserved school districts to support research and direct service projects.
  - Science Fair Initiative has helped thousands of K-12 students from three Southern California school districts prepare science fair projects.
  - Programs: [http://www.bio.uci.edu/education/K-12_outreach](http://www.bio.uci.edu/education/K-12_outreach)

- **K-12 Outreach:** Work with K-12 teachers with underserved school districts to support research and direct service.

- **Biological Sciences (See BIOLOGICAL SCIENCES)**
Center for the Neurobiology of Learning and Memory

• Become a Docent for CNLM’s school tour program
• Educate students about the brain using hands-on exhibits
• Gain teaching experience
• Visit local schools to educate students about the brain and brain health

Brain Awareness Week (BAW)

Visit our website for more details www.cnlm.uci.edu

CNLM Outreach Programs
Outreach Activities in Phy Sci

LEAPS: Laboratory Experiments and Activities in the Physical Sciences:
https://ps.uci.edu/node/8837

CLEAN Mission - Climate, Literacy Empowerment And Inquiry:
http://www.math.ucd.edu/~matchcircle/

Irvine Area Math Modeling (Iamm):
https://ps.uci.edu/content/irvine

• Math Counts: Outreach to middle school students:
  https://www.math.ucd.edu/~meowick/outreach/UCI_Outreach/Home.html

• UCI Chemistry Outreach Program:
  https://ps.uci.edu/content/undergraduate-mentoring-program

• Physical Sciences Undergraduate Mentoring Program:
  https://ps.uci.edu/node/8837
Outreach Activities in the OC Area

- Aquarium of the Pacific
- Newport Bay Conservancy
- Back Bay Science Center
- OC Science and Engineering Fair
- Discovery Science Center
- Latino Health Access
- OC Science Education Assoc.
- OC Conservation Corps
- Girls Inc.
- San Diego Zoo
- LA Natural History Museum
- Boys & Girls Club Santa Ana
- Newport Bay Conservancy
- OC按钮
- Outreach Activities in the OC Area

Image: [Aquarium of the Pacific](https://www.aquariumofthepacific.org)
[Newport Bay Conservancy](https://www.newportbayconservancy.org)
[Back Bay Science Center](https://www.backbay.org)
[OC Science and Engineering Fair](https://www.sciencefair.org)
[Discovery Science Center](https://www.DESC.com)
[OC Science Education Assoc.](https://www.science-ed.org)
[OC Conservation Corps](https://www.occonservation.org)
[Girls Inc.](https://www.girlsinc.org)
[San Diego Zoo](https://www.sandiegozoo.org)
[LA Natural History Museum](https://www.lahistoricalsociety.org)
[Boys & Girls Club Santa Ana](https://www.bgcsantaana.org)
[Newport Bay Conservancy](https://www.newportbayconservancy.org)
Preparation of a Competitive Proposal

GRFP Overview
Resources
Review Criteria, Statements, & References
GRFP and Biomedical Research
Outreach Opportunities
Applicant Reviews
Review #1: Overall Assessment of Intellectual Merit

Explanation to Applicant: Applicant has a record of scientific productivity and letters of support are strong. Research plan would be strengthened if written in a hypothesis-driven manner rather than a descriptive one. Previous research experience could also be written in a more explicit and direct manner. Previous research experience has led to co-authorship on a recent publication and several poster presentations. Research plan proposes an interesting, original and ambitious project. There is no specific mention of what hypotheses are to be tested and there is no mention of the challenges/problems that might be expected.

Review #2: Overall Assessment of Intellectual Merit

Explanation to Applicant: Applicant is very bright and driven. Applicant has a very strong undergraduate academic track record in chemistry and programming. Applicant has strong prior research that has led to co-authorship on a recent publication and several poster presentations. Research plan proposes an interesting, original and ambitious project. There is no specific mention of what hypotheses are to be tested and there is no mention of the challenges/problems that might be expected.

Intellectual Merit Criterion – First Submission
Review #1: Overall Assessment of Intellectual Merit

Oval over Assessment of Intellectual Merit

Excelle

Explanation to Applicant

This application has many strengths. They include the academic success of the applicant; the previous research experience, pilot data, and productivity of the applicant; the quality and relevance of the hypotheses-driven research proposal; the excellence of the laboratory environment in which the applicant is doing the research; and the strong reference letters provided.

Review #2: Overall Assessment of Intellectual Merit

Oval over Assessment of Intellectual Merit

Good

Explanation to Applicant

The applicant brings a useful background in neuroscience. Having a strong set of quantitative skills is a great advantage in modern biophysical chemistry to a long-standing problem in neuroscience. Already excellence of the lab as the background of the applicant has many strengths. They include the academic success of the previous research experience, pilot data, and productivity of the applicant; the quality and relevance of the hypotheses-driven research proposal; the excellence of the laboratory environment in which the applicant is doing the research; and the strong reference letters provided.
Reviewer #1: Assessment of Broader Impacts

Fair

Explanation to Applicant

Applicant presents a limited history of outreach by the standards of this competition. However, applicant does not show evidence of significant leadership in contributions to encouraging disadvantaged populations. Applicant has background experiences that give great promise for broader impacts. Applicant’s participation in the SOLUR program and mentoring activities has made the applicant aware of the continued need of students from disadvantaged populations. Applicant has not shown significant leadership in contributions to encouraging diversity or integrating research and education.

Applicant’s leadership roles are needed to make the application competitive. In addition, future plans in this area should be explicit. Such leadership roles are needed to make the application competitive. In addition, future plans in this area should be explicit.

Applicant presennts a limited history of outreach by explicitly describing the degree to which he was involved in chemistry demos as President of the chemical society. Applicant presennts a limited history of outreach by explicitly describing the degree to which he was involved in chemistry demos as President of the chemical society.

Reviewer #2: Assessment of Broader Impacts

Fair

Explanation to Applicant

Applicant has background experiences that give great promise for broader impacts. Applicant’s participation in the SOLUR program and mentoring activities has made the applicant aware of the continued need of students from disadvantaged populations. However, applicant does not show evidence of significant leadership in contributions to encouraging diversity or integrating research and education.

Applicant presents a limited history of outreach by the standards of this competition. However, applicant does not show evidence of significant leadership in contributions to encouraging disadvantaged populations. Applicant has background experiences that give great promise for broader impacts. Applicant’s participation in the SOLUR program and mentoring activities has made the applicant aware of the continued need of students from disadvantaged populations. Applicant has background experiences that give great promise for broader impacts. Applicant’s participation in the SOLUR program and mentoring activities has made the applicant aware of the continued need of students from disadvantaged populations.

Broader Impacts Criterion – First Submission
Reviewer #1: Assessment of Broader Impacts

Very Good

Explanation to Applicant
The applicant has a history of mentoring and outreach, which is to be commended. In particular, their participation at Reddit Science is an excellent way to provide science information and excitement to the general public.

Reviewer #2: Assessment of Broader Impacts

Very Good

Explanation to Applicant
Applicant has a very strong history of enhancing scientific understanding and integrating research and education. Applicant has shown leadership in these areas and has additional plans to expand online information and discussion of relevant scientific topics. Applicant has a history of mentoring and outreach, which is to be commended. In particular, their participation at Reddit Science is an excellent way to provide science information, and excitement, to the general public.

Reviewer #1: Assessment of Broader Impacts - Resubmission

Very Good