

**MARC U*STAR AND HOWARD HUGHES MEDICAL INSTITUTE-CSUF
UNDERGRADUATE RESEARCH SCHOLARS PROGRAMS
COMMON APPLICATION FORM**

*for
June 1, 2010 through May 31, 2012*

Application Deadlines for HHMI and MARC: **March 19, 2010**

Applications may be downloaded at <http://marc.fullerton.edu> and hhmi.fullerton.edu

Application is for: MARC HHMI both (see websites for program details)

APPLICANT INFORMATION

Name: _____
Last First Middle

Date of Birth (MM/DD/YY): _____ Campus Wide ID _____

Gender: Female Male

U.S. Citizenship: Yes No (Permanent Resident No.: _____)

Current Address: _____

Permanent Address: Same as Current Address

Telephone

Home: _____

Mobile: _____

Email address: _____

Ethnicity:

- | | | |
|--|---|--|
| <input type="checkbox"/> American Indian/Alaskan/Native American | <input type="checkbox"/> African-American/Black. | <input type="checkbox"/> Asian-American |
| <input type="checkbox"/> European-American | <input type="checkbox"/> Filipino/Filipino-American | <input type="checkbox"/> Latin/ Other Spanish American |
| <input type="checkbox"/> Mexican/Mexican American | <input type="checkbox"/> Mid Eastern-American | <input type="checkbox"/> Pacific Islander |
| <input type="checkbox"/> Puerto Rican | <input type="checkbox"/> Other: _____ | |

Primary language spoken at home: _____

Parent's Education (Highest level completed)

Father Some H.S. H.S. Diploma/GED Some College Bachelor's
 Some graduate school Masters Doctorate

Mother Some H.S. H.S. Diploma/GED Some College Bachelor's
 Some graduate school Masters Doctorate

CAREER OBJECTIVE INFORMATION

Advanced degree objective: Masters Ph.D. M.D./Ph.D. PharmD/Ph.D.
 D.D.S./Ph.D. M.D. J.D./Ph.D. Undecided

COLLEGE INFORMATION

College/University attended: _____	Graduation date: _____
Major: _____	Units completed: _____
College/University attended: _____	Graduation date: _____
Major: _____	Units completed: _____
College/University attended: _____	Graduation date: _____
Major: _____	Units completed: _____

Current CSUF Academic Level:

Total units completed: _____
Major(s): _____ Minor(s): _____
Overall GPA: _____ Science GPA: _____ Fall 2009 GPA: _____
Date you entered CSUF (MM/YY): _____
Will you graduate in June, 2012? yes no
Expected graduation date: _____

CURRICULUM VITA*

(Please provide your CV as a separate sheet or electronic file, with this application.)

*Many qualified applicants may not have entries in each category.

EDUCATION:

Community College	Major	Year degree earned, Cumulative GPA
University	Major	Current status, Cumulative GPA
		Intended Degree, Expected date of graduation

WORK EXPERIENCE:

This category should include off-campus work as well as any on-campus teaching, tutoring, and research performed. Indicate location, dates and brief description of activities.

PROFESSIONAL AND NON-PROFESSIONAL AFFILIATIONS:

This category should include student- and science-oriented memberships.

AWARDS AND HONORS:

This category should include academic and extracurricular honors and awards, as well as any research grant awards.

SERVICE AND VOLUNTEER ACTIVITIES:

These activities should be cumulative and inclusive. Indicate site and dates of involvement.

SPECIAL SKILLS:

This category may include language proficiency, computer knowledge (both hardware and software), as well as experience with scientific instrumentation and protocols. Rate your ability as: **novice** – have used with supervision/ have some familiarity; **competent** – can be on your own without supervision; **mastery** – can troubleshoot protocol and can teach someone else.

PUBLICATIONS/PRESENTATIONS (OPTIONAL):

Most applicants will not have entries in this category (after all, developing this area is one of the purposes of these research programs). If you have any publications, published abstracts, or presentations (both poster and slide), list them in reverse chronological order (latest to earliest). Use this format: Last name of first author, initials, and co-authors last name, initials. (date) "title," *journal*. **volume**, pages.

HOBBIES:

This category should include activities that are important to use of your non-academic and non-service/volunteer time.

CAREER ESSAY

In 500 words or less, respond to the following prompt.

Why are you interested in entering the MARC or HHMI Program and doing scientific research?

OTHER SUPPORT

Below provide a statement of any financial aid that you currently receive and the names of organizations providing this support. This declaration will in no way cause your application to be viewed with bias or be a factor in the selection of our candidates.

SPECIAL CONSIDERATIONS

Please indicate whether you:

- Are an under-represented minority (NIH defines this category as African American, Pacific Islander, Hispanic American, or Native American.)
- Are applying as a financially-disadvantaged student (include a copy of your last federal income tax reporting form).
- The first person or generation in your family to attend a four-year university.
- Have graduated from a high school that does not send a high percentage of students to four-year colleges. High School: _____ Graduation Date: _____

SPECIAL CONSIDERATIONS ESSAY

In 500 words or less, respond to the following prompt.

Students who meet one or more of the special considerations on the previous page have often encountered impediments to advancing their education. What impediments have you met and how would your pursuit of higher education benefit from participation in the Cal State Fullerton MARC or HHMI Program?

LETTERS OF RECOMMENDATION

List the names of three individuals, of which **two must be faculty**, who will be submitting letters of recommendation on your behalf. *All letters must be received no later than the application deadline.*

Name: _____ E-mail (required): _____

Title/University: _____ Telephone: _____

Name: _____ E-mail (required): _____

Title/University: _____ Telephone: _____

Name: _____ E-mail (required): _____

Title/University: _____ Telephone: _____

TRANSCRIPTS

Transcripts (unofficial are acceptable) of coursework completed at the date of application. Include non-Cal State Fullerton transcripts, if applicable.

Transcripts must be received before the application deadline (March 19, 2010 [HMMI and MARC]).

MARC PROGRAM INFORMATION

How did you learn about the CSUF MARC Program? (Check all that apply)

- Recruitment/Research Conference (specify) _____
- Past MARC Scholar (name) _____
- Current MARC Scholar (name) _____
- CSUF department/faculty/staff/student (specify) _____
- MARC web-site
- Your previous college department (specify) _____
- Faculty member or advisor at your previous college (name) _____
- Other (specify) _____

HHMI PROGRAM INFORMATION

How did you learn about the HHMI-CSUF Program? (Check all that apply)

- Recruitment/Research Conference (specify) _____
- Past HHMI Scholar (name) _____
- Current HHMI Scholar (name) _____
- CSUF department/faculty/staff/student (specify) _____
- HHMI-CSUF web-site
- Your previous college department (specify) _____
- Faculty member or advisor at your previous college (name) _____
- Other (specify) _____

APPLICANT'S SIGNATURE

Signature _____

Date _____

Send all application materials by March 19, 2010, including letters of recommendation and transcripts to:

Dr. Amybeth Cohen
CSUF MARC Program, MH 282
Department of Biological Science
California State University Fullerton
Fullerton, CA 92834-6850
acohen@fullerton.edu

and/or

Dr. Maria C. Linder
CSUF-HHMI Program, MH 580
Dept. of Chemistry and Biochemistry
California State University Fullerton
Fullerton, CA 92834-9480
mlinder@fullerton.edu

RESEARCH INTERESTS

Below are a list of professors who participate in the MARC and HHMI Programs, and a brief summary of their research interests. HHMI only mentors are marked with an * and MARC only mentors with a #. Check all professors that conduct research in your area of interest.

Molecular biology of microbe-host interactions; Bacterial genes and signals involved in forming a symbiosis with plants.

Mentor: Dr. Esther Chen *Biological Science*

Regulation of photosynthetic gene expression in plants; use of *Chlamydomonas* as a bioreactor for the production of eukaryotic proteins.

Mentor: Dr. Amybeth Cohen *Biological Science*

Distributed Computing, embedded computing, sensor networks, and distributed secure medical devices. Neural Computation and Memory, biosensors, and biologically inspired information fusion. Computational methods, infrastructure, and application frameworks applied in Biotechnology.

Dr. Spiros Courellis *Computer Science*[#]

"

["""Cpcn{uku'qh'r tqvkl"cpf "rk kf "kpvgtcevqo gu'qh"VTR"lqp"ej cppgnu="Tqngu'qh'o gvcn'tcpur qt vgtu"cpf " kqp"ej cppgnu'lp"vj g'pgwtqr cvj qmji { "qh'Cn j glo gtou'f kugcug"cpf "qvj gt "pgwtqf gi gpgtcvkg'f kuqtf gtu=" F twi 'f kueqxt { 'hqt'o gvcn'tcpur qt vgtu"cpf "kqp"ej cppgnu0"

O gpvqt <F t 00 cvj 'R0E wcl wpi eq""Dlqmi lecnUelgpeg'"

Mechanistic studies on the reactive intermediates expected to be involved in enzymatic redox processes.

Mentor: Dr. Peter De Lijser *Chemistry*

Evolution and development of the endothermy in fishes; Swimming performance in fishes; Comparative physiology and biochemistry.

Mentor: Dr. Kathryn Dickson *Biological Science*

Properties and chemistry of aerosols naturally present in the atmosphere (such as sea salt and burned biomass) interacting with man-made pollutants, to better understand human effects on global climate change.

Mentor: Dr. Paula Hudson *Chemistry**

Computational statistics; Data analysis; Regression; Analysis of incomplete data; Biostatistics; Computational psychometrics; Survey sampling.

Mentor: Dr. Mortaza Jamshidian *Mathematics*

Physiology and biochemistry of microbial manganese oxidation. Microbial interactions with metals and metal cycling.

Mentor: Dr. Hope Johnson *Biological Science*

Cell adhesion, cell signaling, cytoskeletal reorganization, and ultrastructure of ascidian gametes during fertilization.

Mentor: Dr. Robert Koch *Biological Science*

Structure, function, regulation and gene expression of protein associated with transport and storage of iron and copper in mammals; Biochemistry of inflammation in relation to copper and iron metabolism.

Mentor: Dr. Maria Linder *Chemistry and Biochemistry*

Structure/function studies ADP Glucose pyrophosphorylase, the rate-limiting enzyme of the glycogen and starch biosynthetic pathways in and plants; elucidation of the various catalytic and allosteric sites; Regulation of carbon metabolism in bacteria and plants.

Mentor: Dr. Christopher Meyer *Chemistry and Biochemistry*

Molecular mechanisms of Notch receptor signaling by typical and atypical ligands; developmental and cell biology of elastic fiber proteins.

Mentor: Dr. Alison Miyamoto *Biological Science*

Evolution and functional differentiation of proteins involved in stress and immune responses.

Mentor: Dr. Nikolas Nikolaidis *Biological Science*

Regulation of apolipoprotein-E gene expression, and its role in Alzheimer 's disease.

Mentor: Dr. Nilay Patel *Biological Science*

Visual recognition of objects and faces, using both applied and evolutionary perspectives.

Mentor: Dr. Jessie Peissig *Psychology*[#]

Statistical Estimation in Magnetic Resonance Imaging and Computed Tomography.

Mentor: Dr. Angel R. Pineda *Mathematics*

Biosynthetic pathway of methanopterin, a folate analog required for the specialized one-carbon metabolism of methane-producing microorganisms. Genetics, genomics, and biochemical approaches are used to identify the genes involved in methanopterin biosynthesis.

Mentor: Dr. Madeline Rasche *Chemistry and Biochemistry*

Molecular biology of plant-pathogen interactions; protein-protein interactions and signaling in disease resistance.

Mentor: Dr. Melanie Sacco *Biological Science*

Human visual perception and color vision. Recent topics include color from motion, optical illusions, and color vision screening test.

Mentor: Dr. Eriko Self *Psychology*[#]

Twin studies of behavioral development; evolutionary psychological approached to behavior.

Mentor: Dr. Nancy Segal *Psychology*[#]

Bioinorganic chemistry of molecular imaging: Preparation and study of new metal-containing molecules for use in biomedical science and imaging techniques.

Mentor: Dr. Karn Sorasaene *Chemistry*^{*}

Transition metal metabolism in the nematode *Caenorhabditis elegans*; use of spectroscopy for reactive oxygen species (ROS); oxidative stress and aging.

Mentor: Dr. Chandra Srinivasan *Chemistry and Biochemistry*

Computational investigation of the molecular structures and reactions of several biologically interesting species.

Mentor: Dr. Fu-Ming Tao *Chemistry and Biochemistry*[#]

Molecular genetics and mechanism that contribute to the virulence of pathogenic bacteria.

Mentor: Dr. Marcelo Tolmasky *Biological Science*

The anatomy and pharmacology of the basal ganglia, particularly as it relates to Parkinson's disease and motor function. The relationship between dopamine and adenosine, and their combined effects on motor function.

Mentor: Dr. Jennifer Trevitt *Psychology*[#]