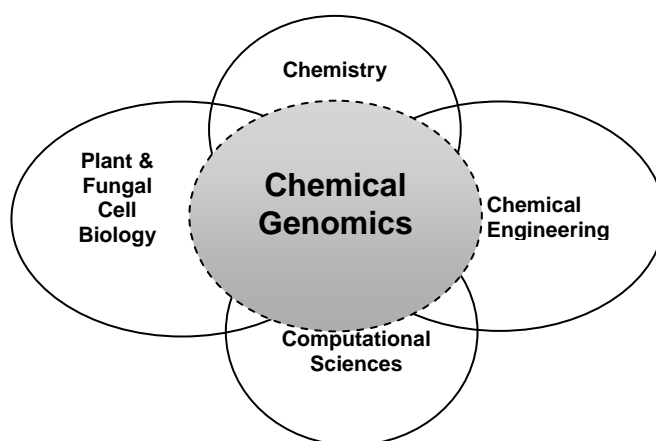


UC Riverside  
Center for Plant Cell Biology

ChemGen IGERT Student and Faculty Handbook

2009-2010



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## Requirements for ChemGen IGERT Students

The following requirements are necessary to obtain and maintain funding through UC Riverside's ChemGen IGERT program.

- (1) Meet NSF's eligibility requirement for funding as a U.S. Citizen or Permanent Resident.
- (2) Enrollment as a PhD student in one of the following graduate programs: Genetics, Genomics and Bioinformatics, Cell, Molecular and Developmental Biology, Plant Biology, Plant Pathology, Molecular Biology and Biochemistry, Chemistry, Computer Science, Chemical and Environmental Engineering.
- (3) Complete the degree requirements of their graduate program, including coursework, examination, teaching assistantship, seminar, annual report and dissertation requirements. Maintain a graduate GPA  $\geq 3.5$ .
- (4) Take two required ChemGen IGERT courses: (1) Chemical Genomics Design Studio (BIEN 220) and (2) an advanced chemical biology course such as Combinatorial Chemistry and Chemical Genomics (CHEM242), or an advanced computational engineering/bioinformatics course such as Integration of Computational and Experimental Biology (CEE 249), or another approved cross-disciplinary advanced course that combines at least two of the following disciplines: chemistry, biology, computer science or engineering.
- (5) Take coursework in plant/fungal cell biology. Biologists are expected to take a graduate lecture course such as, Plant Cell Biology (BPSC237) or Plant Genome (BPSC/BCH232) or Signal Transduction in Microbes and Plants (CMDDB205). Computer science and engineering students will take undergraduate coursework in biology to obtain competence in molecular/cellular biology.
- (6) Attend and participate in the ChemGen IGERT colloquia and the annual IGERT retreat.
- (7) Entering graduate students are to complete at least two laboratory rotations, representing at least two disciplines (plant/fungal cell biology, chemistry, computer sciences and bioinformatics or chemical/biochemical engineering).
- (8) Supervise and mentor a student in CEPCEB NSF-Research Experiences for Undergraduates in Plant Cell Biology for one summer (eight to nine-week project)
- (9) Contribute four to eight hours to UCR's Department of Education *Copernicus* Project for training community college students who are interested continue their study in science.
- (10) Attend and present at a research conference in primary discipline, with travel funds provided by the ChemGen Program (**Travel to be completed before end of July 31, 2011**).
- (11) Attend a research conference in secondary discipline with travel funds provided by the ChemGen Program. (**Travel to be completed before July 31, 2011**).
- (12) Complete a two-month internship at a company or other research institution to learn new research techniques to advance in doctoral research project. (**Proposal to be approved before March 31, 2011; Internship to be completed before end of July 31, 2011**).
- (13) Establish a dissertation research project that incorporates methods of chemical genomics to advance knowledge of plant or fungal cell biology; immediately following advancement to candidacy, establish a dissertation committee that includes two co-major professors from the ChemGen faculty roster, representing two separate disciplines of the ChemGen Program.
- (14) Coordinate all graduate support through the ChemGen IGERT program.
- (15) Abide by the rules and guidelines of academic integrity for graduate students of UC Riverside

## Training Overview

Students will have two major professors from two disciplines and attend lab meetings from both research groups, participate in an annual retreat and monthly ChemGen IGERT colloquia for research presentations by students and invited speakers.

Year 1 students will perform two to three one-quarter rotations. One of the rotations will be in discipline distinct from the main discipline of the student's graduate training (*i.e.* a chemistry student may perform a rotation with a biologist, engineer or computer scientist). This will facilitate the identification of two faculty Participants as co-major professors, representing two distinct disciplines.

Students will complete the coursework recommended by their graduate program, including at least one of two new courses on chemical genomics and systems biology, as well as the Chemical Genomics Design Project Studio developed specifically for the ChemGen IGERT.

In the summer of Year 1 or 2, students will assist in the *Copernicus* project during one week of the summer. This will involve a commitment of six to eight hours of service to improve the knowledge of current community college students. (No longer a requirement due to term of program)

Year 2 students will attend a professional conference that is outside of their main discipline accompanied by a faculty Participant (*i.e.* biologists can attend an American Chemical Society, Intelligent Systems for Molecular Biology, IEEE Computational Systems Biology, or Society of Biochemical Engineering meeting; chemists, computational scientists or engineers can attend an American Association of Cell Biologists or American Society of Plant Biologists meeting).

Students will be strongly encouraged to perform a two to four month internship at a foreign university, at a premier US research institute (*i.e.* Salk or Carnegie), or in industry in Year 2 or Year 3.

Year 1 or 2 students, in the summer, will supervise an undergraduate student researcher, for eight or nine weeks. It is anticipated that these students will be participants in CEPCEB's NSF-Research Experiences for Undergraduates (REU) program.

**Because our IGERT funding will terminate at the end of August 2011, students must complete their travel and internships before the end of July 2011.**

## Required Coursework, Colloquia and Conference

All IGERT students will be provided extensive opportunities for interdisciplinary interactions and training. This will involve coursework, a design studio, frequent colloquia and journal clubs, research retreats, interactions with undergraduates and biology teachers, research conferences and internship opportunities.

## **ChemGen IGERT Coursework**

Each student will complete the specified training in his or her graduate program. The graduate coursework required by the participating graduate programs provides sufficient elective options so that ChemGen students will not be significantly burdened with additional course requirements,

**Course programs are to be discussed with the ChemGen IGERT Director or Assistant Director before students begin their first quarter of classes.**

All students must take two courses to ensure cross-disciplinary training. Students must consider that there may be prerequisites to these courses.

- a. A cross disciplinary course that includes two of the following: Chemistry, Biology, Engineering, Computer Science.

**Combinatorial Chemistry (CHEM242)**

3-units; taught Winter Quarter

This course will cover combinatorial chemistry principles and processes, including solid-phase synthesis and compound library production, and exemplary literature on chemical genomics. To be taught winter quarter 2010.

**PREREQUISITE:** Students who do not have a bachelor's degree in Chemistry are required to officially audit CHEM112C. Chemistry students are required to pass the American Chemical Society organic chemistry qualifier exam.

or

**Integration of Computational and Experimental Biology (CEE 249)**

or

**Another advanced cross-disciplinary course**, with the approval of ChemGen IGERT Director.

- b. **ChemGen Design Studio (CMDB/BIEN 220)**

3-units; to be taught Spring Quarter 2010

This course will be co-taught with faculty representing each of the program disciplines with Professor S. Cutler as lead instructor. The purpose will be to provide students with the challenge of developing interdisciplinary research projects based on chemical genomics approaches. Critical thinking in advance of the test of experimental hypotheses is a hallmark of successful science. The course will be taught in a case-study approach with selected students consisting of members from engineering, biology, computational sciences, and chemical backgrounds on a given team. Students entering the ChemGen IGERT Program in 2009 will enroll in this course in the Spring quarter of Year 1.

All students are expected to take at least one graduate level course in plant or fungal cellular and/or molecular biology. Courses that will satisfy this requirement include:

- a. The Plant Genome (BPSC/BCH 232, 4 units, taught Winter Quarter)

or

- b. Plant Cell Biology (BPSC 237, 4 units, taught Fall Quarter)

or

- c. Signal Transduction in Microbes and Plants (CMDB205, 4 units, taught Spring Quarter)

Students in computer science and engineering that lack basic coursework in biology are expected to take undergraduate coursework to provide proficiency in molecular biology. Courses to fulfill this requirement include:

a. Fundamentals of Biology (BIOL5A, taught Fall and Winter Quarters)

or

b. Molecular Biology (BIOL107A, taught Fall, Winter and Spring Quarter or 107B, taught Spring Quarter)

### Core or elective courses:

There are a number of graduate program core or elective courses with subject matter that directly relates to the chemical genomic theme: Plant Cell Biology (BPSC237), Plant Genome (BPSC231), Signal Transduction in Microbes and Plants (BPSC/CMDB205), Methods in Arabidopsis Research (BPSC210), Cell Biology (CMDB200), Computational Methods for Biomolecular Data (CS234), Data Mining Techniques (CS235), Algorithmic Techniques in Computational Biology (CS238), Biochemistry of Macromolecules (BCH210), Biosensors (CEE230), Modeling Chemical, Biochemical & Environmental Processes (CEE220), Synthesis of Molecules of Biological and Theoretical Interest (CHEM270), Analysis of Single Cells and Subcellular Organelles (CHEM260), Bioorganic Chemistry (CHEM/BCH241); Nanoscale Science & Nanotechnology (ME272), and Cell Engineering (CEE210).

It is expected that most students will also take one or more of these courses to satisfy their graduate program requirements.

### Informal training

ChemGen students are encouraged to enroll in the array of workshops in new methodologies that are held by UCR faculty, CEPCEB Academic Coordinators, visiting scientists, and in conjunction with the City of Hope, a nearby research hospital.

### Sample Course Programs for ChemGen IGERT Students in the Four ChemGen Disciplines

PhD Programs	Plant Cell Biology/ CMDB/ Plant Pathology/ GGB	Chemical Engineering	Chemistry	Computer Science
Fall Year 1	Program Core/Elective Course(s), <i>i.e.</i> Plant Cell Biology (Audit Organic Chem if planning to take Chem220)	Program Core/Elective Course(s), <i>i.e.</i> Cell Engineering	Program Core Course(s) (Pass Organic Qualifier Exam)	Program Core/Elective Course(s), Computational Methods for Biomolecular Data
Winter Year 1	Program Core/Elective Course(s), <i>i.e.</i> Signal Transduction in Microbes and Plants;	Program Core/Elective Course(s), <i>i.e.</i> Analysis of Single Cells and Subcellular Organelles	Program Core/Elective Course(s), <i>i.e.</i> IGERT course: Combinatorial Chemistry	Program Core Course(s)
Spring Year 1	ChemGen IGERT Design Studio Program Core Course(s)	ChemGen IGERT Design Studio Program Core Course(s)	ChemGen IGERT Design Studio Program Core Course(s)	ChemGen IGERT Design Studio Program Core Course(s)

Course programs will be individualized based on area of specialization within the program and breadth of interdisciplinary training. In Chemistry, Chemical Engineering and Computer Science, graduate courses may continue until the end of Year 2. Students will meet minimum teaching assistance requirement for each program: typically 1 to 2 quarters, total. The funding scheme for students involves a TAship in year 4.

## **ChemGen IGERT Extra-Disciplinary Research Experience**

All ChemGen IGERT students are *required* to have a one-quarter rotation research project with an IGERT faculty participant who works outside of their primary discipline. The research project should be one that provides experience that can be applied to enhance their main research focus. This faculty mentor is to be a co-major professor on the student's dissertation committee.

This rotation project should take place during the first year of graduate studies. With permission from the IGERT Steering Committee, this rotation may take place during the second year of graduate training. \*

The student needs to consult with their major professor in the selection of the faculty member in a second discipline. It is expected that the student will discuss the appropriateness of research collaboration with this individual.

### **Extra-Disciplinary Research Proposal:**

To provide a rewarding research experience, the student is directed to prepare a **one-page proposal** that includes the following:

- (1) The name, department and research focus of the advisor in the second discipline.
- (2) The dates of the rotation and the credit units (297 research) to be taken to fulfill the research.
- (3) The goals of the research rotation, including an outline of the research plan.
- (4) A summary of the expected outcome of the rotation.
- (5) Signatures of the student's major professor and the second discipline professor

This proposal is to be submitted by email to the ChemGen IGERT Director for evaluation by the Steering Committee, at least three weeks in advance of the beginning of the rotation.

### **Extra-Disciplinary Research Experience Report:**

Within two weeks of the completion of the rotation project, the student is to write a 500-word report that summarizes the research activities and outcome of the rotation. This report should indicate how the research experience is envisioned to enhance the graduate research project.

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\* Under some circumstances it may be necessary or desirable for a student to complete a second rotation project in a second discipline. Students wishing to do so must have the approval of their faculty advisor, Graduate Advisor and the IGERT Steering Committee.



## ***ChemGen IGERT Colloquia and Journal Club Meetings***

All ChemGen IGERT students are *required* to attend seminars designated a ChemGen IGERT seminar. There will be one ChemGen IGERT seminar per month. Most of these seminars will be held on Friday at noon in the CEPCEB Friday Lunch Seminar series. This forum provides CEPCEB graduate students, postdoctoral researchers, NSF-REU students, special guest researchers, and faculty the opportunity to present their hypotheses and findings in an informal and interactive setting.

Both UCR speakers and invited speakers will be designated IGERT speakers. These will be designated CEPCEB/ChemGen IGERT Friday-noon seminars. IGERT students will attend these seminar and then to meet with the speaker and the speaker's host for a thirty-minute discussion or a one-hour lunch following the seminar. These "brainstorming" sessions will be geared towards students asking and answering questions, such as, "What next?" with respect to the research presented. The UCR ChemGen IGERT participant who hosts the speaker will facilitate the interactive session.

Integral to the Colloquia and students interaction are *Journal Club Meetings* typically held the Thursday prior to the IGERT seminars and one additional time per month, during academic quarters. These are meetings of the IGERT students in which papers of the speaker are presented and discussed. Or these are meetings for students discuss of research results and issues of common interest. The selection of the students to present, as well as the format of the sessions will be determined by the elected ChemGen IGERT student representatives. Students are *required* to attend these meetings. If a student is unable to attend, s/he must inform the ChemGen IGERT Coordinator prior to the meeting. Students who miss more than two Journal Club Meetings in a year will be required to justify their absences in writing to the ChemGen IGERT Director. Failure to participate in either the Colloquia or Journal Club meetings may result in loss of program opportunities including, fellowship support, travel and internship support, and research funds.

\*\*\*\*\*

The ChemGen IGERT program foresees that the more advanced ChemGen IGERT students will ultimately be the organizers of the schedule for the ChemGen IGERT seminars. The ChemGen IGERT students will be encouraged to identify prominent scientists in the field of chemical genomics, chemistry, engineering, bioinformatics/computational sciences, and cell biology. The development of the nine-speaker schedule will be overseen by several faculty Participants. It is anticipated that the students will be directly involved in inviting and hosting these speakers. This will enhance exposure to outstanding scientists and provide contacts that may be of value for many years to come.

ChemGen IGERT students will also be *required* to attend any presentation by a ChemGen IGERT student given in the CEPCEB Friday Lunch Seminar series. These seminars could report student research progress or could be PhD defense seminars.

The schedule for the ChemGen IGERT Colloquium is maintained on the IIGB website Calendar (<http://www.genomics.ucr.edu/>)

## **ChemGen IGERT Retreat**

IGERT students and their faculty mentors will participate in an annual retreat which will convene in the fall, typically in September or October. The retreat will commence on a Friday evening with a social gathering and continue through lunch on the Sunday. The Retreat agenda will be designed to foster effective interaction and communication between students and faculty of different academic backgrounds. It will provide a setting for moderately formal presentation and informal discussions between members of the IGERT group. The goals of the retreat will be to (1) facilitate the identification of participant faculty members' laboratories for rotations of new students; (2) sustain enthusiasm about the interdisciplinary nature of the program; (3) provide students an opportunity to present results in a moderately formal setting; and (4) increase familiarity and collaborative interactions between program participants. Students in their first year will have the opportunity to present the goals of their first research rotations.

The conference will begin with student introductions. This will be followed by media-free presentations on current and future projects by a small number of participant faculty. These "chats" will aim to familiarize new students with the diverse research opportunities within the program. The following morning there will be a presentation by an invited speaker, who will be selected to provide a novel perspective on research that is apropos or ancillary to chemical genomics. Following the talk, there will be an open discussion moderated by two faculty participants. This session will be followed by more traditional 15 to 20 minute presentations by student conferees. Saturday afternoon will include time for out of doors activities. Saturday evening and Sunday morning sessions will be reserved for more formal presentations by ChemGen students.

First year students may be asked to present the research goals of their first rotation project in a mini-talk or on a poster. Second through Fifth year students may be asked to present their research in 15 to 20 minute oral presentations. All IGERT students who do not give a talk, with the exception of first year students, will give a poster presentation on their research. The retreat may also include presentations on the topic of chemical genomics by other graduate students and postdoctoral researchers from UCR. New faculty members, new participants in the program, and faculty without an IGERT student will be invited to present media-free talks, formal talks or to present posters on their laboratory research.

A vital component of the retreat will be the participation of a *Keynote Speaker* from another institution or from industry. This speaker will be an established investigator in the field of chemical genomics. This will provide students and faculty a unique occasion for extensive discourse. ChemGen IGERT students will be encouraged to choose, extend an invitation, and contribute to the hosting of the Keynote speaker.

The retreat attendance of IGERT fellows will be funded by the ChemGen IGERT program. Attendance by faculty and other UCR researchers is not likely to be sponsored by program funds.

## **ChemGen IGERT Fellow Extension of Knowledge Opportunities**

To develop the next generation of socially responsible scientists well equipped to make the transition from academia to research careers, students will participate in mentoring of potential future scientists in two distinct activities.

End of Year 1 or 2 Students: ChemGen students will participate in UCR's Department of Education-sponsored *Copernicus* program for high school science teacher recruitment, preparation and enrichment. This will be accomplished by contributing a total of four to eight hours to this program in their 1<sup>st</sup> or 2<sup>nd</sup> summer by participating in the summer workshops on biology for middle and high school students. IGERT students may be asked to provide an array of assistance, from giving laboratory demonstrations to mini-lectures for the *Copernicus* participants.

End of Year 1 or 2 Students: ChemGen students will serve as a mentor for an undergraduate researcher in an eight to nine-week summer internship program. (CEPCEB has established this model with its NSF-sponsored REU program and has included students who have performed chemical genomics screens and worked in engineering labs in conjunction with biologists.

As an undergraduate mentor the ChemGen student will receive mentoring training, design a project with realistic goals, supervise a student for a nine-week research internship. Supervision of the student is likely to involve a CEPCEB faculty mentor as well. The ChemGen student will supervise day-to-day experimentation and notebook keeping. The undergraduates typically are required to write a research report and prepare a research presentation. Their ChemGen mentor is expected to participate in student guidance in this process.

To benefit the summer intern scientists, the ChemGen IGERT trainees will coordinate a half-day workshop dedicated to the topic of educating the public on science and biotechnology. As our REU program has done in the past, this workshop will involve UCR faculty, such as Dr. Alan McHughen (UC Cooperative Extension Biotechnologist) or Professor Norman Ellstrand, Director of UCR's Biotechnology Impacts Center of the IIGB, both of whom are actively involved in societal issues of biotechnology.

ChemGen IGERT students are only requested to participate in these outreach programs once during their graduate training program. However, some ChemGen IGERT students will have the opportunity to supervise UCR undergraduates in research.

Student activity in this area will be recorded on the annually submitted **ChemGen IGERT Student Progress Form**.

## **Checklist for Year 1 ChemGen IGERT Fellows**

### **Fall Quarter.**

- Receive handbook and general introduction to program
- Organize and begin laboratory rotations in primary discipline
- Attend IGERT retreat, Oct 2<sup>nd</sup>-5<sup>th</sup>, 2009
- Determine course schedule. If planning to take CHEM242, audit CHEM112C or take OC qualifier
- Attend scheduled journal club and special seminars (Nov., Dec.)

### **Winter Quarter.**

- Combinatorial Chemistry and Chemical Genomics Course (CHEM242) offered; other advanced cross-disciplinary course options also offered.
- Attend scheduled journal club and special seminars
- By the end of winter quarter, formalize major professor.
- Begin arrangements for rotation in second discipline

### **Spring Quarter.**

- First week in quarter, provide profile for ChemGen IGERT website
- Attend scheduled journal club and special seminars
- Complete online NSF evaluation of program when requested in April
- Annual interview with Director
- ChemGen Design Studio (CMDB202) on Tue. & Thur. afternoons.

### **Summer.**

#### Research Proposal and Annual Evaluation

- June 30<sup>th</sup>: Submit *draft* proposal for review to the IGERT Steering Committee.
- August 1<sup>st</sup>: Submit *final* proposal and Annual Progress Report Form
- Participate in out reach project or supervise an REU student

### **Extradisciplinary rotation.** (late first year or early second year).

- Identify faculty member for rotation
- Submit proposal for approval at least three (3) weeks in advance of the beginning of the rotation
- Perform rotation
- Submit rotation report within two (2) weeks of the completion of the rotation project.

### **Year-round.**

- Receive monthly reports of research funds
- Look for opportunities of appropriate in-disciplinary or extra-disciplinary conference to attend and follow application procedures (see the Handbook for details). **Travel must be completed before end of July 31, 2011**
- Take advantage of opportunities to expand knowledge and research accomplishments through interdisciplinary activities
- Acknowledge whenever possible your NSF-IGERT fellowship support
- Be a responsible and active citizen in the ChemGen IGERT program

## **Checklist for Year 2 ChemGen IGERT Fellows**

### **Fall Quarter.**

- Attend IGERT retreat Oct 1<sup>st</sup> – 3<sup>rd</sup>, 2010 and present research seminar
- Attend scheduled journal club and special seminars

### **Winter Quarter.**

- Attend scheduled journal club and special seminars
- First week in quarter, provide updated profile for ChemGen IGERT website

### **Spring Quarter.**

- Attend scheduled journal club and special seminars
- Complete online NSF evaluation of program when requested in April
- Annual interview with Director

### **Summer.**

- August 1<sup>st</sup>: Submit Annual Progress Report (Form and 3-5 page report)
- Participate in out reach project or supervise an REU student or perform internship

### **Extradisciplinary rotation.** (if not already completed).

- Identify faculty member for rotation
- Submit proposal for approval
- Perform rotation
- Submit rotation report

### **Year-round.**

- Receive monthly reports of research funds
- Takes opportunities to be Journal Club discussion leader
- Look for opportunities of appropriate in-disciplinary or extra-disciplinary conference to attend and follow application procedures. Identify conference for attendance in research focus area (see Handbook for details) **Travel must be completed before end of July 31, 2011.**
- Actively arrange and confirm location and dates of internship (see Handbook for details) **(Proposal to be approved before March 31, 2011; Internship to be completed before end of July 31, 2011).**
- Participate in out reach programs, or supervise an REU student
- Take advantage of opportunities to expand knowledge and research accomplishments through interdisciplinary activities
- Acknowledge whenever possible your NSF-IGERT fellowship support
- Be a responsible and active citizen in the ChemGen IGERT program

# ChemGen IGERT Fellow Financial Support

## **Stipends:**

ChemGen IGERT students will receive support from the program, in the form of a stipend and cost-of-education allowance. These funds will be received in specific years of graduate training as indicate in the student's support package letter from the Graduate Division.

The stipend will be distributed by Graduate Division as a fellowship. The stipend will be provided for two twelve-month periods, from October through September, according to the funding scheduled of individual students. The cost of education funds, which the student does not directly receive, will be used by Graduate Division to pay student fees, PFR and GSHIP costs.

Students receiving an IGERT stipend may not receive funds from any other source or serve as a teaching assistant during the period s/he receives an IGERT stipend.

**Note: Students need to anticipate that they will receive fellowship stipend checks, IGERT fellowship and Graduate Division fellowship support, at the beginning of the month. When students receive Graduate Student Researcher (GSR) funds from their PI/Co-PI or College, or Teaching Assistantship payment, the checks will be received at the end of the month. STUDENTS MUST PLAN IN ADVANCE FOR THIS HIATUS IN FUNDING.**

## **Travel, Meeting and Internship Support:**

**NOTE: These funds must be spent by the end of July 2011.**

IGERT students are entitled to funding for support to two meetings and an internship.

**A.** Students should attend one meeting outside of their major discipline in Year 1, 2 or early Year 3 of their graduate training program (see following section for guidelines on this meeting selection, *etc.*). Each student will be provided \$1,000 for travel, registration, and/or *per diem* costs per meeting (see details of eligible costs below). Each student will be supported for two meetings. This amount of money may not cover the entire cost of the meeting. Students are responsible for arranging for payment of the remainder of the costs for each meeting. The remaining funds might come from Co-PI funds and other travel resources available to graduate students (Check with your Graduate Program or Graduate Advisor for suggestions on travel funds resources).

**B.** Students are *strongly encouraged* to take a research internship. Each student will be provided \$750 for travel and \$4,500 for living expenses incurred during an approved internship. This internship may be most beneficial during the second year of IGERT Fellowship Support (typically Year 3 of the student's graduate training program). Students entering program in September 2009 must complete internship in 2<sup>nd</sup> year. Students may defer the internship until the end of the summer of their 4<sup>th</sup> year of graduate training. **Students who do not have an approved internship plan by March 31 2011, will forfeit their internship funding.** Students will apply for internship funds at least six weeks before their departure date.

**C.** IGERT student attendance at the annual retreat will be covered by the IGERT program during each year of training. Students are required to attend the annual retreat unless they are on an internship in a foreign country.

## **Requirements to receive support:**

Students are required to apply for use of these IGERT travel, meeting and internship support funds. The

procedure for application is as follows:

- (1) Students must be in good academic standing ( $GPA \geq 3.5$ ) and acceptable progress within graduate program. Good academic standing must be maintained from the time of application through the completion of the proposed activity.
- (2) **The student must submit an application for the funds through the ChemGen IGERT program by use of the appropriate form (see following pages for forms).**
- (3) The student must demonstrate completion the stated activity (meeting participation, internship) in order to receive payment for expenses. This will require the completion of a travel expenditure report and submission of necessary receipts. In any case where a student does not complete the activity the ChemGen IGERT program reserves the right to deny payment of the funds.
- (4) Students are permitted to use IGERT funds and funds from other sources (i.e. a professor's extramural grant, Graduate Students Associations Travel Funds) to attend a meeting. However, payment of expenses by IGERT funds will require full and official accounting of all expenditures and the amount of funding from other sources.

## **Application for Travel Allowances**

### **A. ChemGen IGERT Fellow Travel Support for Conferences**

In Year 2, students are to attend a professional conference that is outside of their main discipline (*i.e.* biologists can attend an American Chemical Society, Intelligent Systems for Molecular Biology, IEEE Computational Systems Biology, or Society of Biochemical Engineering meeting; chemists, computational scientists or engineers can attend an American Association of Cell Biologists or American Society of Plant Biologists meeting). The Co-PI advisors are to support the selection of the meeting. The student is to identify another UCR researcher (IGERT faculty Participant or postdoctoral researcher) who will attend the same meeting. This individual is to agree to interact with the student at the meeting. It is recognized that in some cases a student may attend a meeting outside of their discipline without an accompanying scientist. The student will submit a formal request for funding that will include an abstract of their presentation.

In Year 3, 4 or 5, students are to attend a professional conference within their main discipline at which they present their original research results on their chemical genomics project. The student's presentation can be an oral or poster presentation. The selection of the meeting will be by the student in consultation with the Co-PI advisors. The student will submit a formal request for funding that will include an abstract of their presentation. In most cases, this will be the formal abstract submitted to the conference organizers.

### **General Travel Arrangement Guidelines**

#### **Conference Registration:**

The IGERT program can pay for conference registrations with a Purchase Order Number (PO#). If student prefer IGERT program pay for the conference registration directly, please choose this option when student register online. Then email/bring a copy of student registration to IGERT office. The IGERT coordinator will email back the PO#, and student can finalize the registration online.

#### **Airfare:**

If student prefer IGERT program to pay for the airfare directly before travel date, please come to the program office and we can reserve the flight together and pay with a PO#. Student can also email the detailed flight information of his/her choice. The IGERT coordinator will book the flight for the student with a PO#.

#### **IMPORTANT!!!**

If the student is not in the Botany & Plant Science department and student's own department is booking his/her IGERT funded travel, you **MUST** obtain the PO# from BPSC for travel arrangements. IGERT FAUs for travel are under the BPSC accounting structure. For financial accountability purposes, only

BPSC can issue PO# for any expenses charged to IGERT FAUs.

Only IGERT Supplies and Expenses (S&E) funds have been transferred to student's home department. Please check with the IGERT coordinator for a BPSC PO# when expenses other than student's S&E funds are involved.

### Conference Guidelines:

- (1) Students are required to apply for travel support to conferences **four weeks prior** to the first day of the meeting (See Meeting Travel Expense Application Form).
- (2) The application must include a copy of the abstract or conference publication (draft). ***A copy of the final (published) abstract or conference publication needs to be given to the ChemGen IGERT Program Office after the meeting presentation.***
- (3) Students will only receive travel support if their contribution at the meeting explicitly acknowledges funding from the ChemGen IGERT program. This acknowledgement will typically be in two places.
  - a. For example, for an abstract the student's affiliation should include "ChemGen IGERT Program followed by the students graduate program and departmental affiliations, for example:  
Charles Jang  
ChemGen IGERT Program  
Center for Plant Cell Biology  
Genetics, Genomics and Bioinformatics [student's graduate program]  
[home department if appropriate]  
University of California, Riverside
  - b. At the end of the abstract or in a formal acknowledgment of a conference publication, the following acknowledgement with the grant number must be provided: Research supported by National Science Foundation IGERT Grant No. DGE 0504249, "Using Chemical Genomics to Forge Complementation at the Interface of Chemistry, Engineering and Computational Sciences in Plant Cell Biology". If necessary, the title but not the number of the grant may be omitted in the acknowledgement.
- (4) Students will complete their individual travel and lodging arrangements. For international travel, IGERT program requires students to fly on US air carriers. Students may request to have airline tickets purchased through the ChemGen IGERT program office. The purchase will be made through [connexus](#) and not through any other travel agency or an on-line ticket broker. Tickets can be purchased in advance if the request is made in writing six weeks prior to the departure date. Student can access [connexus](#) two ways:  
\* login through [rSpace](#), click on travel, select [connexus](#) from the application section or  
\* open a web browser, type [connexus.ucr.edu](http://connexus.ucr.edu), enter your UCR NetID and password.
- (5) Students will be reimbursed for travel costs. This will require original receipts for all expenses, with the exception of *per diem* that can be in accordance to university policy. Travel reimbursement is to be done through the UCR's online travel expense planning and reporting website (<http://rspace.ucr.edu/>). After completing your on-line travel expense voucher, please submit your receipts to the IGERT coordinator and include the trip number on the receipts. The site for help with this system is: [http://cnc.ucr.edu/travel/getting\\_started.html](http://cnc.ucr.edu/travel/getting_started.html)  
  
Students must complete the travel reimbursement forms within two weeks of their return from the trip. (If an extend trip is planned please inform the IGERT Program Office of your anticipated return date.
- (6) The reimbursement for a conference from IGERT funds will not exceed the amount in the students Travel Funds account (\$1000).



## FAQS:

### What travel expenses are eligible for payment from my IGERT funds?

- (1) An economy class round-trip ticket. For airline travel, only U.S. carriers can be used. Travel on a foreign airline cannot be reimbursed from U.S. government funds. Train, subway and bus fares. Taxi fares can be claimed but students are encouraged to use public transportation.
- (2) Lodging during the conference period at an economical rate.
- (3) Conference registration fees. Society membership fees are not reimbursable.
- (4) *per diem* allowances for meals (there are maximum amounts for each meal). There is no reimbursement for alcoholic beverages of any kind.

### What is needed to process my travel reimbursement form?

- (1) Original receipts for transportation. For flights the back ticket coupon is preferred but an e-ticket will suffice.
- (2) Original itemized hotel or conference lodging receipt. In room expenses such as phones, mini-bar and internet costs are not reimbursable.
- (3) Copy of conference registration receipt

### Is anything else needed to document my conference attendance?

- (1) Documentation of participation in conference: A copy of the conference schedule indicating the day/time or your presentation or a copy of your abstract. A photocopy of your name badge if you were not a formal presenter.

## B. ChemGen IGERT Fellow Internship Opportunities

ChemGen students are provided the wonderful opportunity of completing a research internship in industry or in another academic setting. The idea is to increase student exposure to biotechnology, advanced technologies and technology development in the private sector or at other research institutions. The goal is for each student to have a minimum of a two-month internship, sometime between the end of Year 2 and Year 4. These exchanges will allow students to learn new techniques and to mature in their disciplines. The internships will be selected by the student, in consultation with the Co-PI advisors.

At present, *informal* collaboration agreements have been set up for these internships with Harvard's Institute of Chemistry and Cell Biology (ICCB), The Salk Institute, The Carnegie Institute of Washington, East Anglia University, (Norwich, U.K.), University of Toronto, Dow AgroSciences, Mendel Biotechnology, Inc., and Sigma-Aldrich Chemical. Arrangements for interns have also been explored with Smart Imaging Technologies, Atto, Hughes Research Labs, Northrup Grumman, Calzyme and Guidant Pharmaceuticals. Students are strongly encouraged to plan well in advance for their internship so that arrangements can be made. Please talk to the IGERT Program Director and to your Co-PI advisors about your case.

Students must submit a 2 page internship proposal that summarizes the objectives, experimental approach and anticipated outcome of the internship project. This document can be supported by accompanying figures. The proposal requires a signature of approval from the guiding PIs on the project. **Students who do not have an approved internship plan by March 31, 2011, will forfeit their internship funding.**

During your internship you will be able to submit your travel and expense form while you are away using UCR's on-line travel system. Be sure to familiarize yourself with this system before your departure. UCR requires that most travel expenses be paid out of pocket and then reimbursed. You will be able to complete the on-line forms and scan and email your receipts so that your reimbursement will be processed. (Hard copies of your receipts will still need to be surrendered to the accountant).

## Internship Guidelines:

- (1) Students are required to apply for internship support at least **six weeks prior** to the intended date of departure (see IGERT Student Internship Application Form).
- (2) The application must include a copy of a letter of invitation from the host institution. This can be a pdf or an email. There should also be a letter from student's PI indicating the value of the internship.
- (3) An internship proposal approved by PIs, must be submitted to the IGERT director six weeks prior to your departure date. The proposal should be a one page document describing the goals of the internship. This proposal will be evaluated and approved by the program Director. The FINAL APPROVAL of the proposal must be completed ONE(1) MONTH before the departure date.
- (4) Students will complete their individual travel and lodging arrangements. For international travel, IGERT program requires students to fly on US air carriers. Students may request to have airline tickets purchased through the ChemGen IGERT program office. The purchase will be made through [connexus](#) and not through any other travel agency or an on-line ticket broker. Tickets can be purchased in advance if the request is made in writing six weeks prior to the departure date. Student can access [connexus](#) two ways:
  - \* login through [rSpace](#), click on travel, select [connexus](#) from the application section or
  - \* open a web browser, type [connexus.ucr.edu](http://connexus.ucr.edu), enter your UCR NetID and password.
- (5) Students will be reimbursed for travel costs and living expenses. This will require original receipts for all expenses, with the exception of *per diem* that can be in accordance to university policy. Please be sure to familiarize yourself with university reimbursement policy prior to your departure. Travel reimbursement is to be done through the UCR's online travel expense planning and reporting website (<http://ospace.ucr.edu/>). After completing your on-line travel expense voucher, please submit your receipts to the IGERT coordinator and include the trip number on the receipts. The site for help with this system is: [http://cnc.ucr.edu/travel/getting\\_started.html](http://cnc.ucr.edu/travel/getting_started.html). Students must complete travel reimbursement forms for all internship related expenses within two weeks of the internship end date (If you anticipate any delays please inform the IGERT Program Office in advance).
- (6) During an oversea internship, students may purchase consumable lab supplies on the IGERT S&E funds from vendors outside of the US.
- (7) The reimbursement for an internship from IGERT funds will not exceed the amount in the students Internship Funds account (\$750 for travel and \$4,500 for living expenses).

## Meeting Travel Expense Application Form

This form and supporting documents (see below) must be submitted to the ChemGen IGERT Program Office four weeks prior to the first day of the meeting. **Complete the form on your computer and submit the document file by email to the IGERT Program Director or Program Coordinator.**

Student name: \_\_\_\_\_ Date of request: \_\_\_\_\_

Student ID: \_\_\_\_\_ Email address: \_\_\_\_\_

### Purpose of Travel

Name of Conference or Workshop: \_\_\_\_\_

Date(s) of Conference: \_\_\_\_\_

Location of Conference: \_\_\_\_\_

Academic Field of Conference: \_\_\_\_\_

If outside of primary academic field, name and email address of IGERT faculty participant or other individual who will also attend meeting: \_\_\_\_\_

Presentation (no presentation required for meetings outside of primary discipline):

Title: \_\_\_\_\_

Type: Oral \_\_\_\_\_ or Poster \_\_\_\_\_

### Budget Summary

Registration Fee: \$ \_\_\_\_\_

Lodging: Number of nights: \_\_\_\_\_ \$ \_\_\_\_\_

Food (indicate if a per diem is to be taken): \$ \_\_\_\_\_

Transportation (indicate amount for each method):

Airfare: \_\_\_\_\_ Bus: \_\_\_\_\_ Car: \_\_\_\_\_ Train: \_\_\_\_\_ Parking: \_\_\_\_\_

Total Transportation Cost: \$ \_\_\_\_\_

**TOTAL REQUESTED\*:** \$ \_\_\_\_\_

<b>Approval Amount:</b>	
<b>Approval by PI/Co-PI</b>	
<b>Approval by IGERT Director</b>	
<b>Approval Conditions (if any)</b>	

Please provide the following supporting documents:

1. Copy of submitted abstract and registration form
2. If outside of major discipline, a copy of the program or conference announcement and copy of the registration form

\* Student travel allowances are \$1000 per year that the IGERT stipend is received. With approval of the PI/Co-PI, research expense allowances may be used for travel funds.

## IGERT Student Internship Application Form

This form and supporting documents (see below) must be submitted to the ChemGen IGERT Program Office six weeks prior to the first day of the internship. **Complete the form on your computer and submit the document file by email to the IGERT Program Director or Program Coordinator.**

Student name: \_\_\_\_\_ Date of request: \_\_\_\_\_

Student ID: \_\_\_\_\_ Email address: \_\_\_\_\_

### Internship

Place of internship: \_\_\_\_\_  
(Name and location)

Internship start date: \_\_\_\_\_

Internship end date: \_\_\_\_\_

Contact person at host institution: \_\_\_\_\_

### Budget Proposal

Registration Fee: \$ \_\_\_\_\_

Housing: \$ \_\_\_\_\_

Food: \$ \_\_\_\_\_

Transportation (indicate amount for each method):

Airfare: \_\_\_\_\_ Bus: \_\_\_\_\_ Car: \_\_\_\_\_ Train: \_\_\_\_\_ Parking: \_\_\_\_\_

Total Transportation Cost: \$ \_\_\_\_\_

Other (explain): \_\_\_\_\_ \$ \_\_\_\_\_

**TOTAL REQUESTED\*:** \$ \_\_\_\_\_

<b>Approval Amount:</b>	
<b>Approval by PI/Co-PI</b>	
<b>Approval by IGERT Director</b>	
<b>Approval Conditions (if any)</b>	

Please provide the following supporting documents:

1. Copy of a letter from the host indicating that you will be participating in an internship at that institution

\* Student internship allowances are not to exceed \$750 for travel and \$4500 for living expenses during an approved internship.

## Research Funding

### Research Allowance during IGERT Fellow Years

Each IGERT fellow will be provided a research allowance that will be allocated each year as IGERT Fellow. The allowance will be \$2000 per year, each year of graduate training under the IGERT umbrella. Students are to use the funds for research expenses pertaining to their chemical genomics research, with the approval of his/her PI/Co-PI.

The PI (professor in major discipline) of each student will receive a Cost Center and Fund Number for their IGERT student in which these allocations will be deposited each year.

Allowable expenses include, purchase of chemicals and supplies needed for chemical genomics experiments; direct and recharge costs incurred for microscopy, proteomics, microarray studies, computer use, NMR analyses, *etc*; photocopying and printing costs associated with research or completion of the dissertation; academic or research software packages, notebooks, computer disks, data storage peripherals, computers and the like that are necessary for research. Please be aware that UC policy on ownership of computers depends upon the cost of the equipment. **Any computer purchase must have the approval of the PI/Co-PI and the IGERT Director.**

Unallowable costs include, fines, library fines, student fees, books, periodical subscriptions, furniture (*i.e.* office furniture), or any person item that is not necessary for academic research.

If a student does not have research costs, *i.e.* research expendables, then this money can be used for travel expenses to meetings. With the PI/Co-PI's and the IGERT Director's approval, students may have their research funds converted to travel funds. This needs to be done through a written request to the ChemGen IGERT Program office. However, travel funds cannot be converted to research funds.

Unspent research expense allocations may be carried forward until graduation. Any unspent Research Funds at the time of graduation will go back into the general IGERT funds. **For further information and commonly asked questions concerning research allowance see Appendix A.**

### Publication costs

There is typically a cost charged by journals for the publication of research papers. Each student will be provided funds to go towards the cost of publication of their research. This will be allocated in increments of \$500 per year. These funds are to be used at the discretion of the PI/Co-PI. **The funds can only be used for publications that specifically acknowledge support of the research by the ChemGen IGERT grant.** (See below). These funds must be spent before the one-year anniversary date of the student's graduation.

There should be a clear indication that the student was supported as an IGERT fellow on the publication. The recognition of IGERT grant support should be indicated in the authorship affiliation and in the acknowledgement section.

- a. Authorship should include the affiliation to the "ChemGen IGERT Program", for example:  
Authors  
ChemGen IGERT Program (can be indicated with a superscript for the IGERT student)  
Center for Plant Cell Biology (can be indicated with a superscript for the IGERT student,  
PIs and other authors as appropriate)  
Genetics, Genomics and Bioinformatics [it is optional to list the student's graduate  
program; can be indicated with a superscript]

[home department]  
University of California, Riverside

- b. In the acknowledgment section, the following acknowledgement with the grant number must be provided: Research supported by National Science Foundation IGERT Grant No. DGE 0504249, “Using Chemical Genomics to Forge Complementation at the Interface of Chemistry, Engineering and Computational Sciences in Plant Cell Biology”. If necessary, the title but not the number of the grant may be omitted in the acknowledgement.

## Student Websites

The ChemGen IGERT website will include a profile of each IGERT student. Jocelyn Brimo will be responsible for this. Students are encouraged to make the most of this opportunity. The website can include photos, description of your projects and data.

## ChemGen IGERT Student Evaluation

The student fellows of the ChemGen IGERT program are required to submit a research proposal and annual progress reports. Students who do not meet the expectations of the program will not be continued as ChemGen IGERT fellows. An annual progress report is due **August 1<sup>st</sup> of Years 2-4** of graduate studies (first year students have their project proposal due during this time). Additional reports may be requested at the Steering Committee’s discretion for internal monitoring of student progress. Students may have input from their advisors in the preparation of the proposal and progress reports, but the documents are to be produced by the students.

ChemGen IGERT students will meet the following program requirement (see page12):

**ChemGen IGERT students must establish a dissertation research project that incorporates methods of chemical genomics to advance knowledge of plant or fungal cell biology; immediately following advancement to candidacy, establish a dissertation committee that includes two co-major professors from the ChemGen faculty roster, representing two separate disciplines of the ChemGen Program.**

It is the responsibility of the major/co-major Professor(s) of ChemGen IGERT students to ensure that this requirement is met. If an IGERT fellow does not meet this expectation the major/co-major professor(s) may be denied the opportunity to have future students funded by the ChemGen IGERT program.

**IGERT students will submit a research proposal to the IGERT Steering Committee.**

### ***Guidelines for the ChemGen IGERT project proposal***

1. Project proposals must be submitted by first year students no later than **June 30<sup>th</sup>** in Year 1 of their graduate program.
2. Students joining the ChemGen Program at a later time in their graduate training are required to submit a project proposal prior to formal admission to the program.

Project proposal will be reviewed by the Steering Committee. Revisions to the proposal may be required. **Revised proposal will be due as specified by the Director in the review.**

## Proposal Guidelines

The purpose of the proposal is to present a plan for a dissertation research project that incorporates the use of chemical genomics to investigate the biology of plant cells or plant pathogens. The project will address a research topic within the student's major discipline. The project should indicate how the student plans to integrate the methods of a second discipline. This integration should be facilitated by the extra-disciplinary rotation and mentoring by a faculty member outside of the student's primary discipline.

The proposal should be divided into five sections, (1) Introduction; (2) Summary of Experimental Objectives; (3) Justification of the research project; (4) Description of the Experimental Plan; and (5) References. Sections (1) and (4) will be the major sections of the proposal.

- (1) The Introduction should provide the background literature on the research topic.
- (2) The Experimental Objectives should provide a numerical list of approximately five research objectives or hypotheses to be tested.
- (3) The Justification can be a paragraph or two that summarizes the importance of the work. In most cases it will be relevant to discuss the value of use of a chemical genomics approach.
- (4) The Experimental Plan should be organized in sections that correspond to the Objectives. After each objective the student should indicate the experimental approaches to be employed, discuss the anticipated results, and consider the possible pitfalls or other problems. If the student has preliminary data, that data should be presented in the corresponding section, even if further research is planned. This Experimental Plan should provide the level of detail of a grant proposal. It is expected that each student will incorporate approaches from two disciplines in this plan.
- (5) References should be presented in a format suitable for a journal in the student's discipline. The titles of the referenced papers should be included in the citations.

The proposal length should be 5-6 pages, single spaced. Tables and figures can be included but will not be counted towards the page length. These should be referenced in the text and appended to the end of the proposal. Students are asked to write the proposal independently. Faculty mentor(s) are asked to be involved in the development and editing of the proposal. The major professor will sign off on the final proposal, confirming the intended project. The professor to direct the research rotation must also agree to host the student.

## Submission of the Research Proposal

The proposal should be submitted as a paper copy and by email to Dr. Bailey-Serres ([serres@ucr.edu](mailto:serres@ucr.edu)).

## Review, Revision and Acceptance

The proposal will be reviewed anonymously by the Steering Committee or by a committee of ChemGen IGERT faculty selected because of their appropriate expertise. Typically one reviewer is from the Student's discipline and the other is from the selected second discipline. Students may be requested to revise the proposal prior to acceptance. This process may take 1 to 3 months to complete.

It is fully anticipated that the student's project will follow the plan of the research proposal. If deviations from the proposal are made, this needs to be presented and justified in the Annual Progress Report, due August 1<sup>st</sup> of each year during graduate training.

## ***Annual Progress Reports***

**Progress Reports are due August 1<sup>st</sup>**

1. The annual progress report will specifically address the progress towards the goals defined in the approved chemical genomics research project proposal.
2. The progress report should be two to five pages (double spaced) and may additionally include figures and tables. The report should include citation of the literature, as appropriate.
3. The progress report should be a list of accomplishments towards the project goals. Any proposed change in project goals will need to be explained and subsequently approved.

Along with the project report, the student will submit the **ChemGen IGERT Annual Student Progress Report Form**. An important component of this form is a list of any posters, meeting presentations (meetings at UCR other than group meetings) or publications made by the student in which the chemical genomics work was reported and the ChemGen IGERT program acknowledged.

The Steering Committee will use the Progress Reports, including the Annual Progress Report Form, to determine whether ChemGen IGERT funding will be continued. The IGERT program may request an informal written progress report at any other time if the Steering Committee is concerned that a student is making inadequate progress to merit continued funding by the IGERT program.



## ChemGen IGERT Student Annual Progress Form

This form is to be submitted to the ChemGen IGERT Program Office by **August 1<sup>st</sup>** of each year of residence. The purpose of this form is to track student progress through their graduate program and the ChemGen IGERT program. **Complete the form on your computer and submit the document file by email to the IGERT Program Director. Update this form each year.**

Student name: \_\_\_\_\_ Date: \_\_\_\_\_ ID Number: \_\_\_\_\_

Graduate Program: \_\_\_\_\_ Anticipated Date of Graduation: \_\_\_\_\_

Academic Year: \_\_\_\_\_ Quarter Entered Program: \_\_\_\_\_ GPA: \_\_\_\_\_

First Year Rotation Faculty: \_\_\_\_\_

Major Professor in Primary Discipline: \_\_\_\_\_

Major Professor in Secondary Discipline: \_\_\_\_\_

ChemGen Graduate Courses Take (course number/date/grade): \_\_\_\_\_

Retreat Presentation Dates and Titles: \_\_\_\_\_

Course and quarter of TAs(s): \_\_\_\_\_

Internship dates: \_\_\_\_\_ Site: \_\_\_\_\_

REU Student Mentoring

Dates: \_\_\_\_\_ Name of Student: \_\_\_\_\_ College affiliation: \_\_\_\_\_

Dates of *Copernicus* Program participation: \_\_\_\_\_

### ChemGen IGERT sponsored meeting attendance

Meeting name: \_\_\_\_\_ Date: \_\_\_\_\_ Location: \_\_\_\_\_

Form of presentation (if any): \_\_\_\_\_

**Qualifying Exam -** Date Completed (or anticipated): \_\_\_\_\_

Committee Members: \_\_\_\_\_  
 (indicate if ChemGen \_\_\_\_\_  
 IGERT faculty) \_\_\_\_\_

### Complete the following table for each year in residence that courses are taken

Course Program – Year (Enter: Course Number/Title/Grade)

Fall	Winter	Spring

# IGERT Committees and Program Evaluation Procedures

## *Student Affairs Committee*

Four co-PIs, four additional Participants, and two IGERT student representatives, who will provide guidelines for students in a program handbook and assist with the course program, mentoring and retention, undergraduate training, internships, career guidance, and other needs of ChemGen IGERT students enrolled in graduate programs within their discipline

## *IGERT Graduate Student Association Representatives*

Two elected IGERT students, elected for a one year term, serve as liaisons between the faculty and IGERT students on programmatic issues and organize student involvement in ChemGen IGERT activities (*i.e.* the invited speaker selection, hosting, and annual retreat, etc.)

## **Program Evaluation**

The ChemGen IGERT program will be evaluated in several ways.

1. Student Interviews and Progress Reports, by Director and Steering Committee and designated faculty.
2. Evaluation Survey of Students and Faculty, by internal or external process.
3. Student Evaluation of ChemGen IGERT courses
4. Annual NSF-Progress Survey (April 15<sup>th</sup> – May 15<sup>th</sup>, on-line survey)
6. NSF Site Visit (anticipated)

# ChemGen IGERT Faculty Roster

(951) 827-last 4 digits

Name	Dept	Title	Phone	Fax	Email
Raikhel, Natasha	Botany & Plant Sciences	Director, IIGB, Distinguished Professor	x2-6370	x2-2155	<a href="mailto:nraikhel@ucr.edu">nraikhel@ucr.edu</a>
Bachant, Jeffrey	Cell Biology & Neuroscience	Assistant Professor of Cell Biology	x2-6473	x2-3087	<a href="mailto:Jeffrey.bachant@ucr.edu">Jeffrey.bachant@ucr.edu</a>
Bailey-Serres, Julia	Botany & Plant Sciences	Professor of Genetics	x2-3738	x2-4437	<a href="mailto:serres@mail.ucr.edu">serres@mail.ucr.edu</a>
Borkovich, Katherine A	Plant Pathology	Professor	x2-2753	x2-4294	<a href="mailto:Katherine.borkovich@ucr.edu">Katherine.borkovich@ucr.edu</a>
Carter, David	Botany & Plant Sciences	Academic Coordinator, Imaging	x2-2694	x2-4437	<a href="mailto:dcarter@ucr.edu">dcarter@ucr.edu</a>
Chen, Xuemei	Botany & Plant Sciences	Associate Professor	x2-3988	x2-4437	<a href="mailto:xuemei.chen@ucr.edu">xuemei.chen@ucr.edu</a>
Chen, Wilfred	Chemical/Environ Eng	Professor	X2-2473	X2-5696	<a href="mailto:wilfred.chen@ucr.edu">wilfred.chen@ucr.edu</a>
Cui, Xinping	Statistics	Assistant Professor	x2-2563	x2-3286	<a href="mailto:Xinping.cui@ucr.edu">Xinping.cui@ucr.edu</a>
Cutler, Sean	Botany & Plant Sciences	Assistant Professor	x2-6990	x2-4437	<a href="mailto:sean.cutler@ucr.edu">sean.cutler@ucr.edu</a>
Ding, Shou-Wei	Plant Pathology	Professor	x2-2341	x2-4294	<a href="mailto:Shou-wei.ding@ucr.edu">Shou-wei.ding@ucr.edu</a>
Eulgem, Thomas	Botany & Plant Sciences	Assistant Professor	x2-7740	x2-4437	<a href="mailto:Thomas.eulgem@ucr.edu">Thomas.eulgem@ucr.edu</a>
Gallie, Daniel	Biochemistry	Professor	x2-7298	x2-4434	<a href="mailto:Daniel.gallie@ucr.edu">Daniel.gallie@ucr.edu</a>
Girke, Thomas	Botany & Plant Sciences	Assistant Professor	x2-2469	x2-4437	<a href="mailto:Thomas.girke@ucr.edu">Thomas.girke@ucr.edu</a>
Huang, Anthony	Botany & Plant Sciences	Professor	x2-4783	x8-4437	<a href="mailto:Anthony.huang@ucr.edu">Anthony.huang@ucr.edu</a>
Jiang, Tao	Computer Science and Engineering	Professor	x2-2991	x2-4643	<a href="mailto:jiang@cs.ucr.edu">jiang@cs.ucr.edu</a>
Jin, Hailing	Plant Pathology	Assistant Professor	x2-7995	x2-4294	<a href="mailto:hailingji@ucr.edu">hailingji@ucr.edu</a>
Judelson, Howard	Plant Pathology	Professor	x2-4199	x2-4294	<a href="mailto:Howard.judelson@ucr.edu">Howard.judelson@ucr.edu</a>
Julian, Ryan	Chemistry	Assistant Professor	X2-3958	X2-4713	<a href="mailto:ryan.julian@ucr.edu">ryan.julian@ucr.edu</a>
Larive, Cynthia	Chemistry	Professor	X2-2990	X2-4713	<a href="mailto:clarive@ucr.edu">clarive@ucr.edu</a>
Li, Bai-lian Larry	Botany & Plant Sciences	Professor	X2-4776	X2-4437	<a href="mailto:Bai-lian.li@ucr.edu">Bai-lian.li@ucr.edu</a>
Liao, Jiayu	Chemical/Environ Eng	Assistant Professor	X2-6240	X2-5696	<a href="mailto:jliao@enr.ucr.edu">jliao@enr.ucr.edu</a>
Lonardi, Stefano	Computer Science and Engineering	Assistant Professor	x2-2203	x2-4643	<a href="mailto:stelo@cs.ucr.edu">stelo@cs.ucr.edu</a>
Lord, Elizabeth	Botany & Plant Sciences	Professor of Botany	x2-4441	x2-4437	<a href="mailto:Elizabeth.lord@ucr.edu">Elizabeth.lord@ucr.edu</a>
Millar, Jocelyn	Entomology	Professor	X2-5821	X2-3086	<a href="mailto:jocelyn.millar@ucr.edu">jocelyn.millar@ucr.edu</a>
Morikis, Dimitrios	Bioengineering	Professor	X2-2696	X2-6416	<a href="mailto:dmorikis@enr.ucr.edu">dmorikis@enr.ucr.edu</a>
Morton, Thomas	Chemistry	Professor	X2-4735	X2-4713	<a href="mailto:Thomas.morton@ucr.edu">Thomas.morton@ucr.edu</a>
Nothnagel, Eugene A.	Botany & Plant Sciences	Professor	x2-3777	x2-4437	<a href="mailto:Eugene.nothnagel@ucr.edu">Eugene.nothnagel@ucr.edu</a>
Nugent, Connie	Cell Biology & Neurosci	Assistant Professor	x2-2383	x2-3087	<a href="mailto:Connie.nugent@ucr.edu">Connie.nugent@ucr.edu</a>
Ozkan, Cengiz	Mechanical Engineering	Assistant Professor	x2-5016	x2-2899	<a href="mailto:Cengiz.ozkan@ucr.edu">Cengiz.ozkan@ucr.edu</a>
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# ChemGen IGERT Fellow Roster

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# IGERT Affiliate Centers and Graduate Programs

## CEPCEB

Center for Plant Cell Biology  
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Administrative Assistant, Jocelyn Brimo  
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## IIGB

Institute for Integrative Genome Biology  
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## Participating Graduate Programs

### Genetics, Genomics and Bioinformatics (GGB)

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### Cell, Molecular and Developmental Biology (CMDB)

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### Molecular Biology and Biochemistry

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### Computer Science

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### Plant Biology

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### Plant Pathology

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### Chemical and Environmental Engineering

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# Appendix A

## Research Allowance (S&E Funds)

### **Additional information**

The yearly research allowance is disbursed through the Department of Botany and Plant Sciences not through the Fellow's graduate program department. For this reason any questions or problems regarding the use of these funds, including appropriate uses and transaction resolution, should be directed to the appropriate Botany staff member. The best place to start is by contacting Carolina Stickley in the IGERT office.

You will receive monthly statements of S&E funds via email from Deb Terao, the Botany Department's Financial Operations Manager. These statements can help you plan for and track expenses. Be sure to review your statement and report any discrepancies in a timely manner. The policy for reporting errors is within four weeks of the statement issue date.

### **Where to go for help with**

Purchasing: for help with orders and order resolution (backordered items, lost or misdirected orders) – Henry Gutierrez, Batchelor Hall 2122

Monthly statement: any questions about your monthly statement of S&E funds – Deb Terao, Batchelor Hall 2142

IGERT administrative questions: any administrative questions or concerns or if you don't know where to start – Carolina Stickley, Batchelor Hall 2105

### **FAQs:**

**Q:** What should I do if I need to purchase a computer with my research allowance?

**A:** Contact Carolina Stickley to receive an Equipment Purchase Approval Form which needs to be completed before the computer can be purchased. You will need to work with Henry Gutierrez, the Purchasing Specialist in the Botany department, to get a quote for the computer. The computer quote requires approval from the IGERT Director and your PI. Once your request has been approved Henry will process the order. Do not purchase a computer on your own with the expectation of getting a reimbursement.

**Q:** The amount on my monthly statement doesn't match my records. Where can I get more details?

**A:** If you don't see a recent expense on your monthly statement, keep in mind that some transactions may take longer to appear on your statement than others. If you see an expense that you don't recognize see Deb Terao or Carolina Stickley for details of the transaction.

**Q:** Can I be reimbursed for a research expense/supply which was paid out of pocket?

**A:** You can be reimbursed if:

- ▶ it is an allowable expense
- ▶ it is not a computer/equipment purchase
- ▶ you can provide original receipts
- ▶ you request reimbursement in a timely manner

You can take your receipts to Henry Gutierrez for reimbursement.