Student Guidelines for CBI Trainee Requirements

Students are usually supported for two years (20 months), and are appointed in their second or third year of Graduate School. The CBI web page (http://www.umich.edu/~michchem/cbi/) provides much information about the program. In particular, the sections on coursework and the CBI handbook should address most questions. CBI Trainee Responsibilities and Expectations are a combination of the following:

1. Required Coursework
2. Requirements for Appointment
3. Student Progress Report
4. Student Sabbatical
5. Yearly Research Summary
6. Contract for Trainee Appointment

1. Required Coursework
   - Chem. Biol 501/502
   - Chem. 548 “New Frontiers at the Chemistry/Biology Interface” course
   - Chem. 751
   - PEERS
   - PIBS 501/503 or One course in research responsibilities
   - Two-term enrollment in a one unit advanced seminar course

CBI Training Program Course Electives:

- Cell and Developmental Biology ANAT 530
- Critical Discussions in Bioinformatics BIOLCHEM 511
- Survey in Bioinformatics BIOLCHEM 526
- Biology & Chemistry of Protein Cofactors BIOLCHEM 528
- Protein Structure and Function BIOLCHEM 550
- Ligand Binding and Kinetics BIOLCHEM 673
- Signal Transduction BIOLCHEM 576
- Cell Cycle Regulation BIOLCHEM 585
- Special Topics in Signal Transduction BIOLCHEM 590, 591
- Signal Transduction and Regulation of Gene Expression During Development BIOLCHEM 645
- Prokaryotic Gene Expression BIOLCHEM 651
- Eukaryotic Gene Expression BIOLCHEM 652
- Kinetics and Mechanism BIOLCHEM 673
- Enzyme Mechanism BIOLCHEM 674
- Advanced Topics in the Secretary Endocytic Pathway BIOLCHEM 675
- Inorganic Chemistry CHEM 507
- Biophysical Chemistry CHEM 520
- Synthetic Organic Chemistry CHEM 541
- Applied Physical Methods in Organic Chemistry CHEM 542
- Reaction Mechanisms CHEM 543
- Molecular Genetics HG 541
- Gene Expression Module III HG 653
- Bioorganic Principles of Medicinal Chemistry MEDCHEM 532
- Survey of Medicinal Chemistry MEDCHEM 533
- Modern Tools of Drug Discovery MEDCHEM 534
- Gene Expression Module I MICRBIOL 651
- Principles of Pharmacology PHARM 611
2. Requirements for Appointment

After receiving the student nominations, a selection committee will be convened, which will set a date to interview potential trainees. It is expected that trainees will be appointed for a 20-month period (probably starting in September with the possibility that one student begins training in January). This tenure may be extended if the number of training slots for our program is increased during the next budgetary cycle.

Faculty from all of our parent programs are encouraged to submit nominations. We are striving to develop diverse group of trainees, with expertise across the Chemistry/Biology Interface. We also strongly encourage Faculty to consider nominating students from groups that are traditionally underrepresented in the sciences.

Initial Responsibilities

- Research interest in studies and desire for broader training at the interface of Chemistry and Biology.
- Willingness to complete course work required for the Program.
- Strong letter of recommendation by present mentor and other U of M faculty.
- Strong Undergraduate and Graduate Achievement.
- Interviews by Trainee Selection Sub-committee.
- Balance of coursework is maintained within the Program so that all different disciplines have reasonable representation.

Ongoing Responsibilities

- Students will be expected to present results in poster format annually at the Annual CBI Symposium that is associated with the last seminar of the year for students in the advanced seminar course.
- Students will be requested to provide a short summary of research progress toward the degree each winter term and either meets with a subset of the program committee, or their thesis committee, to ensure progress toward the degree is accomplished.
- Students are required to attend regularly scheduled departmental seminars and monthly Chalk Talk Sessions.
- Students must be willing to serve as a student representative on the Leadership Committee and/or Program Committee.
- Student Assessment at 9 AND 21 months after appointment by the Program Director and Program Committee.
- Students will also be required to fill-out or update Biographical forms as part of their progress reporting process.
- Attend annual meeting with the program Director subsequent to the annual Progress Report submission. The fellow’s advisor may also attend this meeting.
- Satisfy the Student Sabbatical requirement.
- An allowance of $300 travel annually is to be utilized for the student sabbatical or to attend a research conference. These funds must be utilized by May 31 of each year of your appointment or you forego these funds.
- 4th year students or beyond should provide a paragraph describing your career objectives after you graduate and your immediate career plans upon graduation (do you have a post doctorate or other job lined up yet? If so, where and doing what). All students within six months of projected graduation should give a detailed response to these issues.
- Graduating fellows will maintain their contact information with the program for 10 years from graduation.
3. Annual Student Progress Report

Deadline: MARCH

Following admission to candidacy, which normally occurs at the end of the second year, students are monitored by thesis and dissertation committees within their home departments; thesis committees must contain one faculty member from the CBI in addition to the mentor; dissertation committees must contain one faculty member from the PSTP in addition to the mentor. Advisors/mentors will receive email correspondence regarding the student progress reports.

All students that have been supported by the training grant must provide this information even if you are not presently being supported by training grant funds.

- Title
- Your name, years supported by CBI, and research advisor.
- A brief summary of the goals and importance of your project (a couple of paragraphs).
- A brief summary of the achievements that you have made during the past academic year (up to a page, a figure or two can be included).
- A brief summary of what you plan to work on for the following year (up to a page).
- An estimated time for completion of your degree.
- A list of any publications or presentations during the past year (remember that the CBI program should be acknowledged for support even if you are not being paid by the grant when the paper is submitted or published).
- If you joined the program after the student sabbatical was required, you should indicate whether your sabbatical has been completed, is in progress, has been approved, or will be submitted to the program committee during the next year.
- Audit of CBI course requirements and timetable.

Please send this information as a hard copy to Dr. Pecoraro in the Chemistry Department.
4. Student Sabbatical

**Deadline:** Proposal due by July 1 (End of First Year of Appointment)

The University of Michigan envisions that the sabbatical period be completed during the third year of residency of the CBI supported trainee. The trainee will submit the proposal, in its entirety, to the Program Committee for approval. The requirements of the application process are as follows:

- Students will write a proposal that outlines an “advanced rotation experience”, preferably in a research collaborators laboratory. The site of the 8-10 week sabbatical may be in academe, industry or government laboratories. These laboratories may be physically located in Ann Arbor or other places in Michigan as well as in more distant sites, including overseas.
- Regardless of the site for the sabbatical, it is expected that the student will physically move to the laboratory of the collaborator for the period of the sabbatical. If necessary, the sabbatical may be done over more than one visit.
- The proposal should describe a self-contained project that is relevant to the student’s thesis work.
- A letter of approval by the advisor shall be obtained and submitted within the package.
- A letter of agreement from the host scientist shall be obtained and submitted within the package.
- At the end of the sabbatical, a short report of research experience will be submitted to the program committee. This report is due within one month of completion of the Sabbatical.
- Advisors for each fellow will receive correspondence on all communications regarding the sabbatical.

Examples of topics might include a synthetic chemist bringing compounds that were prepared to a laboratory to carry out biological evaluation, or an individual working on catalysis spending time in a computational laboratory to understand enzyme mechanism. Student support during this period will be the responsibility of the training grant, the research mentor, and institutional sources, such as the Rackham Graduate School.

**Please send this information as a hard copy to Dr. Pecoraro in the Chemistry Department.**
5. Yearly Research Summary

Deadline: November 1

Training grants are not static, but are evolutionary. For this reason, we are constantly evaluating whether our training objectives are being satisfied. This evaluation is done by the Director, the Program Committee, the Student Leadership Committee, and the faculty as a whole. Each November, all supported students are required to submit a summary of their progress to the Program Director. The Program Director then reports to the Program Committee, and ultimately presents at the Annual Symposium, providing a summary of the year’s accomplishments. The supported students offer feedback as to how to improve the every aspect of the Training Program, such as modifications to the Annual Symposium, enhancement of the Student Sabbatical experience, optimization of the core course Chem 548, increasing the effectiveness of the minority recruitment process, or just how to strengthen the moral of present and past trainees. This information is gathered and analyzed in such a way so that each students’ ideas and concerns are addressed to better our Program as a whole.

All students that have been supported by the training grant must provide this information.

- Title
- Your name, years supported by CBI, and research advisor.
- A brief summary of the goals and importance of your project (a couple of paragraphs).
- A brief summary of the achievements that you have made during the past academic year, and a brief summary of what you plan to work on for the following year (up to a page).
- A brief summary of any improvements to the CBI TP deemed necessary to facilitate the requirements of your Doctorate Degree.

Please send this information as a hard copy to Dr. Pecoraro in the Chemistry Department
6. Contract for Trainee Appointment

Requirements for Appointment:

- Research interests aligned with the goals of the CBI TP
- Desire for broader training at the interface of Chemistry and Biology
- Willingness to complete course work required for the Program
- Present a poster or seminar at the Annual CBI TP Symposium for the duration of their PhD (not only while being financially supported by CBI TP)
- Attend monthly meetings of CBI TP trainees (Sept-May) for the duration of their PhD (not only while being financially supported by CBI TP)
- Willingness to complete a Student Sabbatical at some point during the Ph.D. and to provide a proposal for the sabbatical to the Program committee at the end of the first year of their appointment
- Provide a yearly Progress Report (due in March) to the Program Director for the duration of their PhD (not only while being financially supported by CBI TP)
- Willingness to assist the CBI TP, e.g.
  - Assisting with operation of the Annual Symposium
- Serving as student representative on Leadership Committee or Program Committee
- Agree to provide education/employment data to the Program Director for up to ten years after receiving the Ph.D.

Student Assessment:

- Students are reviewed at approximately 9 and 21 months after appointment by the Program Director and the Program Committee. Review addresses research performance and progress towards degree.
- Following admission to candidacy, which normally occurs at the end of the second year, students are also monitored by dissertation committees within their home departments; Dissertation committees must contain one faculty member from the PSTP in addition to the mentor.

Student Support:

- The responsibility to pay any shortfalls for student stipend or tuition support is the responsibility of the research mentor. Students receiving greater than 17 months of stipend support from the CBI TP agree not to receive support from other training grants on the U of M, Ann Arbor campus without specific approval of the CBI TP Director.

Signature of Prospective Trainee ____________________________________________ Signature of Trainee Mentor ____________________________________________
Printed Name of Trainee ____________________________________________ Date __________________________
Printed Name of Mentor ____________________________________________ Date __________________________