



CLIMB

Collaborative Learning and Integrated Mentoring
in the Biosciences

What is CLIMB?

CLIMB is a professional development program that guides a diverse group of bioscience PhD students to develop advanced skills for collaborating, communicating and conducting research across disciplines, and to accelerate their scientific careers. This is accomplished through a two-year sequence of activities that supplement their training in their primary PhD programs.

Program benefits:

- Connect with fellow bioscience graduate students outside of your own PhD program and build a diverse network of colleagues and potential collaborators
- Attend workshops that help develop critically important communication skills for young scientists and enable collaborative learning with peers
- Receive mentoring and coaching from program leaders to maximize your success
- Access study groups for core courses with trained facilitators – a highly efficient way to master the increased complexity of graduate courses

CLIMB Leaders: Rick McGee, PhD, the Director of CLIMB, spent the first 20 years of his career as a successful academic bench scientist doing research in biochemistry, neurobiology and pharmacology. The second 20 years, he has devoted to leading and developing novel approaches to research training. In addition to CLIMB, he assists junior faculty in writing NIH research proposals and leads a team of social scientists that study how scientists develop. Stephanie Valtierra, PhD, the Assistant Director of CLIMB, completed her PhD in Northwestern University's Interdepartmental Neuroscience Program (NUIN) and was recruited back to Northwestern because of her interest in working with PhD students. Rick and Stephanie provide complementary expertise and insights as resources for CLIMB students.

Workshops: Monthly workshops will provide in-depth focus on topics critical to rapid development as a scientist and enable time to get to know others from an array of fields at your same stage of training. Some of the sessions will address smaller topics and give students a chance to learn strategies from each other. Weekday workshops will be 60- to 90-minutes long and replicated on both the Chicago and Evanston campuses to minimize student travel-time.

CLIMB Calendar (*adjustable according to students' needs and interests*)

First Year Workshops

FALL QUARTER

September CLIMB Kick-off: Excelling in the 1st year of graduate school

Week of Sept 17th, 4:30-6:30; Dinner provided.

- Introductions: Getting to know each other
- Transitions, transitions, transitions
 - Adapting to new teaching and learning approaches in graduate school
 - A novel approach to highly effective study groups
 - Balancing competing demands within and outside of graduate school
 - Excelling in research rotations and lab groups
- Choosing a PhD research mentor – a really critical decision in the life of a scientist
- Anything you want to ask, did not know who to ask, or were afraid to ask about graduate school
- Closing: Preparing for the unexpected

October Workshop: Maximizing connections with new faculty: building your professional/mentorship network

Week of Oct 15 (Mon-Wednesday); duplicated.

- Touching base – what’s working and what’s not
- Creating your professional persona
- Primary networks: Connecting with potential mentors, reference letters, etc.
- Intro to Dissertation lab decision making tool

November Workshop: Planning an effective poster presentation

Week of Nov 11 (Mon-Wednesday); duplicated

- Making a good and lasting impression – critical to your professional persona
- Fundamentals of highly effective oral communication
 - Dealing with stress during presentations
- Preparing and presenting a poster
- Exemplary poster presentations (3rd-4th year presentation)

Nov Individual Check-ins: One-on-one meeting with CLIMB leadership

- Opportunity to reflect on current research rotation (life sci.) or discuss choices for upcoming dissertation advisor decision (eng.)

December Social: TBA

WINTER QUARTER

January Workshop: The elevator speech

- The value in communicating your goals, interests, or research in 1-2 minutes
- The 2-minute thesis, a paper-napkin 'chalk talk', and the 30-second elevator speech

February Workshop: Honing your skills in written communication: Abstracts

- Elements of an effective abstract
- Fine-tuning abstracts for different audiences and purposes/goals
- Providing group feedback to any students currently working on abstract

March Workshop: Mentoring Networks (Developing your professional identity and network)

- What is a mentoring network
- How do we leverage a network for career planning
- Networking (In-person and online)
- Getting the most out of attending research meetings
- Becoming a respected and legitimate member of your scientific communities
- Recognizing and managing unconscious assumptions and biases

March Check-Ins: One-on-one meeting with CLIMB leadership

- Opportunity to reflect on current research rotation (life sci.) or discuss choices for upcoming dissertation advisor decision (eng.)

SPRING QUARTER

April: Dissertation Lab Decision Making Tool

- Touching base – what’s working and what’s not – learning from each other
- Working through the dissertation lab decision making tool

June: MBTI tool and communication

- Assessing communication strengths and working effectively with others – using the Meyers Briggs Type Indicator to help understand your preferred communication styles and those of others
- Social science theories that explain the invisible happenings during research training – yes, the social sciences provide amazing insights into the ‘communities’ you work in and how to excel within them
- Setting goals for the summer and the next academic year

SUMMER QUARTER

Effective Oral Communication: Creating a 10-minute Talk (weekly sessions)

Students create and present a short 10-15-minute talk in stages: introductions, design and method, then the full talk. Students receive feedback from CLIMB leaders and other students to improve presentation skills in a friendly, non-evaluative environment. The series also provides students with a venue to experiment with new presentation styles or approaches. Presentations are video recorded so that students can see what they look like to others – scary sometimes but REALLY helpful for honing skills among friends. From past experience, this does work well as a weekly meeting because students are presenting and giving feedback to each other, and the stress of first quarter adjustments are much reduced. As noted earlier, we are doing a good enough job of assessing and characterizing improvement. Our plan is to develop rubric tools for us and peers to identify strengths and areas for improvement, including a self-assessment element.

Second Year Workshops

FALL AND WINTER QUARTER

Skills for managing your mentoring relationships, “Mentoring Up and Down”

The logic for and basis of this workshop was described above in the Progress Report. The full case-based skill-development workshop created by the University of Wisconsin group requires 6-8 hours. We focus on about half of the topics most germane to PhD Students, including:

- October: Establishing and maintaining effective communication
- November: Aligning Expectations & Assessing Understanding

November: Individual Check-in - One-on-one meeting with CLIMB leadership

- Opportunity to reflect on research

December - Qualifying exams and dissertation projects

- Thinking ahead to qualifying exams
- Choosing approaches to define breadth and depth of your dissertation project
- Picking and using dissertation committees

WINTER AND SPRING QUARTER

February workshops: Grant writing and the peer-review process

The approach used in this workshop was specifically developed to help beginning researchers learn grant writing skills and is similar to what Dr. McGee uses with junior faculty at Northwestern who are writing early grant applications. The workshop covers basics of the peer-review process as well as the sections of research grant proposals, with a special emphasis on fellowship applications. Using the online video tools described in the Progress Reports, students are led through the sections of a funded proposal, deconstructing the elements that make it effective. In so doing, the common patterns and logic flow that NIH reviewers are expecting are revealed. By making those patterns visible, it becomes much easier to know how to approach writing. Anyone who is currently working on an NIH-style fellowship brings a draft of their Specific Aims ahead of time so that feedback can be provided during the workshop. The workshop also covers the non-science portions of fellowship applications and what you need to accomplish to turn reviewers into

advocates. We situate this workshop in winter quarter because several programs use a dissertation proposal for qualifying exams.

The writing begins with the research question/hypotheses which then leads into Specific Aims. The time spent on questions and Aims varies by stage of development, but invariably takes longer than people expect. During the group sessions, facilitated by Dr. McGee, students often end up needing to refine and rethink their questions and/or aims. Even for students who have had significant input from research mentors, the dialogue and iterative processes pushes them to REALLY understand what they are proposing and potential problems. The most powerful aspect of the process is that students see and participate in the development of multiple research questions and styles of writing, and surprisingly quickly start to provide insightful feedback to each other. This group mentoring approach quickly acquires a peer-mentoring component, and not infrequently new collaborations and interests emerge. We purposely do NOT go on to writing subsequent sections of a proposal until the questions and Aims are very solid. Still, as students move on to developing their research strategy, they often uncover new problems or findings that cause them to modify their proposals. We stress this is a perfectly natural part of research, and one of the added values of writing proposals.

Optional Winter Quarter Fellowship Writers Group: If there is interest after the Saturday workshop, Dr. McGee leads an ongoing Fellowship Writers Group where students who are actively working on a proposal come together on a regular basis to receive and give feedback on proposals as they are being written. Experience has shown, however, that not many are ready to put together real F31 applications yet which is why we are going to add Fellowship Writers Groups for 3rd and 4th year students.

SPRING AND SUMMER QUARTER

June: MBTI tool and communication

- Assessing communication strengths and working effectively with others – using the Meyers Briggs Type Indicator to help understand your preferred communication styles and those of others
- Social science theories that explain the invisible happenings during research training – yes, the social sciences provide amazing insights into the ‘communities’ you work in and how to excel within them
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July: Career Options I – Finding out more about them

- Options to continue doing research
- Variations on predominantly teaching positions
- Using and translating science – policy, writing, tech-transfer and others
- Informational Interviews

July: Constructing an Initial Career Plan

- What are you thinking of options right now – knowing they could easily change? Or maybe more than 1 option seems appealing.
- What do you know about the path to get there? What do you NOT know? How will you find out?
- Map out your next 5 years.
- When will you be ready to start writing papers?
- Are there fellowships you should be applying for?

How can you be a part of CLIMB?

At the start of every academic year, CLIMB accepts applications from all first year PhD students in

- Biomedical Engineering (BME)
- Driskill Graduate Program in Life Sciences (DGP)
- Chemical and Biological Engineering (ChBE)
- Interdisciplinary Biological Sciences (IBiS)
- Northwestern University Interdepartmental Neuroscience Program (NUIN)

If you are interested in being part of the CLIMB community of scholars, email your personal statement to the CLIMB Assistant Director at stephanie.valtierra@northwestern.edu

Your personal statement does not need to exceed one-page in length and will help CLIMB leadership get to know you and your goals for the program, consider including:

- what aspects of the CLIMB program motivate you to join
- which professional development opportunities are you most looking forward to or do you expect to find most helpful
- personal goals and how CLIMB can help you reach those goals

When submitting your personal statement please name the file: **LastName-FirstName_CLIMB-19** and include the following information before your written statement: **Name, NU Email, Graduate Program, and Student ID#** Email invitation will include template for your statement, which can be submitted as Word doc or PDF.