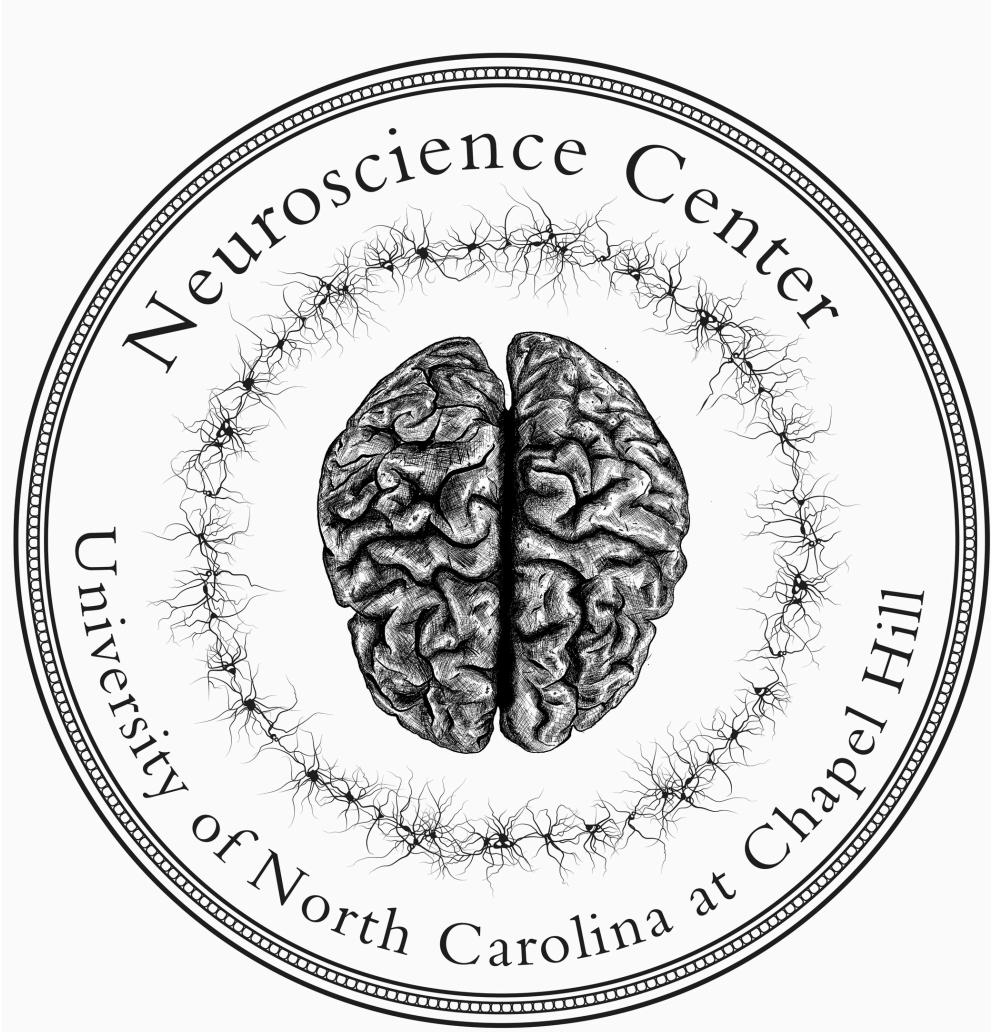

Student Welcome Packet

This information packet is to serve as a resource for students within the curriculum. This packet is **written by students for students**, so we hope to provide extra insights and information in a relatable and cohesive format.

WELCOME

TABLE OF CONTENTS

MEET THE CENTER

Mark Zylka, PhD

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Ben Philpot, PhD

Associate Director

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Jay Brenman

Director of Graduate Studies (DGS)

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Oversees first-year NBIO course, member on all committees for preliminary exams, teaches Grant Writing.

Sue Modlin

Student Services & Operations Manager

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Graduate Student issues or questions, SOM ID Badges, MEJ Facilities requests, Surplus & Equipment Requests

Sophia Berg

Administrative Assistant

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Parking Coordinator, Seminar coordinator, Neuroscience Curriculum courses, Calendar support for Mark & Ben

Laura Archambault

Pre-award Grants Manager

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Competitive grants submissions, Progress Reports, JIT Responses, Other miscellaneous sponsor communication as needed.

Colton Reeves

Accounting Technician

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Neuroscience Shared Drives Access, Concur travel support, Liquid Nitrogen & Dry Ice

Tina Newman

Accounting Manager

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Finance Questions, Financial Systems Access: BuyCarolina, Pcards, T&E Cards

Josh Barrett

Accounting Processor

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JPcard reconciler – remember to send receipts to neuroadmin@unc.edu and include the funding details for where to charge the expense. Purchase Order processing, Graduate Student travel Support.

Tim Switzer

Business Manager

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STUDENT COUNCIL

Equity, Opportunity, and Access Committee (EOA)

We are committed to fostering an environment of equity and inclusion within the Neuroscience program where diverse perspectives are valued, and everyone is empowered to contribute and succeed.

Improvement Committee

The Center Improvement Committee aims to evaluate Neuroscience Center policies, practices, and curriculum to identify areas of improvement and implement solutions with community feedback in mind.

Social Committee

Our goal is to foster a vibrant and inclusive community within the Graduate Student Neuroscience Center. We understand the importance of balance in the demanding field of neuroscience and strive to create an atmosphere where students can relax, unwind, and build lasting friendships.

Career Committee

Our mission is to empower neuroscience students by fostering career development and providing valuable resources for future success. The committee organizes engaging speaker events where professionals from diverse fields share insights into their career trajectories.

Visit our website by following this link: https://neurosciencestuden.wixsite.com/uncneuro or scan the QR code on this page! Want to be involved? Join a committee that resonates with you by reaching out to Rachel Sharp at rsharp@unc.edu.

REQUIRED COURSES

Note: Dates for each course are the typical years/semesters students take these courses. Theses course may be taken anytime, but note some courses are only offered in the Fall or Spring.

Molecular and Cellular Neuroscience (NBIO 722)

Fall Year 1. NBIO 722 meets three times a week (MWF) from 10am-12pm in MEJ. The course is broken down into three to four units. Each unit is taught by multiple faculty members. Faculty members tend to teach one or two classes each on their area of expertise. After each unit, you will be given a take home exam, and have a set weekend to complete the exam. Each faculty member who taught the corresponding unit will submit questions for the exam. Therefore, the exam tends to be a mix of question styles, ranging from true/false to short essay. **Student Tip:** Block off the majority of your weekend to take the exam, but also make sure to take breaks as you go.

Systems and Translational Neuroscience (NBIO 723)

Spring Year 1. NBIO 723 is a continuation of NBIO 722. The course structure is the same. **Student Tip:** NBIO 722 and 723 allows you to meet many of the Neuroscience Faculty. This is a great opportunity to get to know faculty you might not usually correspond with.

Communication of Scientific Results (NBIO 850)

Fall Year 2. NBIO 850 is a combined class of Neuroscience Curriculum and Cell Biology and Physiology students. In this course, you will learn how to effectively communicate your science, make figures in BioRender and Adobe Illustrator (free to UNC students), and practice giving presentations. **Student Tip:** Try to focus on making figures that you know will be useful for your thesis! Don't know what your thesis is yet? In that case, make figures to describe key methods and findings or topics of study in your lab.

REQUIRED COURSES

Statistics for Lab Scientists (BBSP 710)

Fall Year 2. BBSP 710 is an introduction to statistical methods. This course may be substituted with higher level statistics course or modeling (advanced statistics/modeling/computer science substitute 700+; or STOR/COMP SCI 500+). If you choose to substitute a course, make sure to get it approved first by the DGS. Potential courses to sub:

- STOR 566: Introduction to Deep Learning
- STOR 565: Machine Learning
- STOR 557: Advanced Methods of Data Analysis
- STOR 556: Time Series Data Analysis

NBIO 893 Neuroscience Seminar Series

Year 2 and 3. NBIO 893 is the weekly department seminar series. This takes place on Thursdays from 12:30pm to 1:30pm. Free lunch is served before seminar at 12pm. Everyone is welcome to attend seminar, but only in year 2 and year 3 is attendance required. Additionally, each student in the program in year 3 or greater will present their thesis work once a year. Each student will have a 20 minute timeslot for presentation and questions.

CBPH 895 Refresher Course on Responsible Conduct of Research

Fall Year 4. This course is typically 6 total Fridays 2-3:30PM. This is a required refresher course to cover responsible conduct of research/ethics.

REQUIRED COURSES

NBIO 750 Neuroanalystics

Spring (even numbered years only). **This course is required for students supported by the T32.** This course counts as one of your two electives. In this course, you will learn how to analyze big experimental datasets and perform statistical tests. Emphasis is placed on proficiency in data wrangling in R Studio.

Two Electives

In addition to the above required courses, each student is required to enroll in two electives. If you take NBIO 750, this counts as one of your two electives. The other electives may be found on the Neuroscience Curriculum Website. The electives are flexible and can also be taken in different departments. Many students enroll in the Grant Writing class (recommended; joint with CBP) as an elective, or use a course for a certificate program as one of their electives.

Additional Notes

If BBSP students take courses in cell biology, genetics, or pharmacology in the first year and decide to enroll in Neuroscience, these students must enroll in NBIO 722 and NBIO 723 in year 2. In this case, the courses taken during the first-year count towards your two electives.

MD/ PhD students joining NBIO will take NBIO 722 and 723 when they begin PhD work after the 2nd year of medical school. Elective requirements only are waived for MD/PhD students.

THESIS TIMELINE

01

3-4 Rotations

Year 1. Each student is required to do three lab rotations within the first-year. These rotations can be across departments/centers.

02

Lab Selection

Year 1 (April). After the last rotation, students will have one week to submit their lab selection form.

03

Preliminary Exam

Year 1 (July-August). Students are given a neuroscience paper to critique. Consists of written and oral components.

04

Thesis Committee Formation

Year 2. Students select a thesis topic and their thesis committee members. Students may choose to have a meet & greet with their committee before the proposal date.

05

Thesis Proposal

Year 3. Students write a NIH style grant as their written thesis proposal. Then, students give an oral presentation for their committee.

06

Thesis Defence

Year 4-6. Written and oral defense of thesis work.

ROTATIONS

1 week break

Rotation 3

1 week break

Rotation 2

1 week break

Rotation 1

ROTATIONS

What to consider?

Need more guidance? Reach out to the faculty or peer mentors in your BBSP First Year Group.

ASK QUESTIONS

Before committing to a rotation, meet one-on-one with the PI and ask questions. Questions: Do you have funding for a student? Do you use hands-on or hands-off mentoring? How often do you meet with your students? What qualities do successful graduate students possess? How do you measure success for graduate students? Do you expect students to apply for funding? Have you graduated students in the past? If so, where did they go to next? Additional expectations?

VARIETY

If you are unsure if you want hands-on/hands-off mentoring, big/small lab, or a specific research area, consider rotating in a variety of lab types to get a range of experiences.

TALK TO STUDENTS

One of the best ways to find out about labs you may be interested in is by talking to students in the neuroscience program. Additionally, if you do not know what labs to rotate in, students can let you know which labs best overlap with your interests. All of the students in our program would be happy to provide advice/guidance on this (we were all recently in the same exact spot and know how tough it can be). Reach out by email.

LAB SELECTION

Consider the following . . .

01

Advisor

Funding, any previous graduate students, how much time is committed to mentoring, hands-off or hands-on, method of feedback, communication

02

Lab Environment

Other graduate students, post-docs, lab managers. Sociability, interaction, method of interaction, lab meetings, lab journal clubs, expectations (arriving at certain time? leaving at certain time?) Where will you thrive?

03

Research Interest

Stay in similar research as previously done or do something new?

04

Career Goals

Methods, analysis, support from PI for seeking non-academic career goals. (Time for internship? Certificate?)

05

Day-to-Day

What does day-to-day life look like? Do you enjoy this?

LAB SELECTION

Fill in the chart with your rankings!
How do your lab rotations rank?

1 2 3 4 5

Not ideal fit → **Ideal fit**

Rotation #	Advisor	Environment	Interest	Career Goals	Day-to-Day	Sum!
Rotation 1						
Rotation 2						
Rotation 3						

Optional: If one category holds more weight for you than another, then assign each category a weighted percent and recalculate sum.
For example: If you prioritize the environment and your career goals over the other categories, you could weight those categories to account for 30% of each rotation score, and all other categories 13.33% each (total 100%).

Advisor*.1333 + Environment *.3 + Interest*.1333 + Career*.3 + Day*.1333 = total

LAB SELECTION

What questions should you ask?

The following questions come directly from the Office of Intramural Training and Education (OITE) at the National Institutes of Health. They cover four categories and give good examples of questions to ask potential PIs, bench mentors, and current students in labs of interest. For a complete list of questions, please see the OITE article "Find a research group for a postbac, grad student, or postdoc position."

The type of research being done in the group

- Are you excited about possible projects, including the questions asked, the approaches used, model systems and research skills you will learn?
- Do the skills you will learn lay a solid foundation for the type of work you wish to do in the long-term? This is an especially important consideration for more senior trainees and fellows.

The culture of the research group

- Is the group supportive of each other and welcoming of people with different identities, experiences, backgrounds, and cultures?
- How do members of the group support each other in their work? Do they embrace collaboration, work independently, or tend to compete?
- Are there productive group meetings where the group addresses issues and debates research questions in healthy ways?

LAB SELECTION

What questions should you ask?

The management style of the PI

- Are there others who serve as managers (or surrogates) on behalf of the PI? How does the PI work with these individuals to provide oversight to the group?
- Does the PI regularly meet with individuals and teams?
- Does the PI engage and support team members in having difficult conversations and resolving conflict?
- Is the PI concerned about issues of diversity and inclusion? Are they supportive of people with diverse backgrounds through their actions and words?
- Does the PI tend to play favorites, focusing more resources on some projects and people?
- Is the PI responsive to requests and transparent about decision-making whenever possible?

The mentoring philosophy of the PI

- Does the PI provide a balance of supervision and independence appropriate to your training level and background knowledge?
- Is the PI supportive of a diversity of career outcomes? Do people in the group get the same support regardless of their long-term career goals? Do you feel comfortable talking about your career goals with the PI, or are you hiding important information, even during the interview?
- Is the PI attentive to hours that individuals work and supportive of setting healthy boundaries and taking leave?
- Does the PI have good active listening skills? Do they ask you about your expectations and need?

PRELIMINARY EXAM

SCHEDULING

IN JUNE, SUE WILL REACH OUT TO YOU WITH A PROPOSED EXAM DATE AND EXAM DETAILS. IF YOU HAVE SUMMER PLANS, REACH OUT TO SUE IN MAY WITH DATES YOU WILL BE UNABLE TO TAKE THE EXAM. EXAMS TAKE PLACE OVER A TWO WEEK PERIOD IN JULY AND/OR AUGUST. COMMITTEE ASSIGNMENTS WILL BE PARTLY BASED OFF AVAILABILITY OF FACULTY AND STUDENTS.

WRITTEN EXAM

YOUR COMMITTEE IS COMPOSED OF A CHAIR (EACH FACULTY MEMBER WHO ACCEPTED A STUDENT IN YOUR COHORT MUST CHAIR A COMMITTEE), A SECOND FACULTY MEMBER, AND THE DGS. YOUR CHAIR SELECTS THE PAPER YOU ARE ASSIGNED TO READ. YOU HAVE 1 WEEK TO READ, SUMMARIZE, AND CRITIQUE THE ASSIGNED PAPER **(OUTSIDE OF YOUR FIELD)** IN WRITTEN FORMAT. AT THE END OF WEEK 1, YOU SEND YOUR WRITTEN EXAM TO YOUR COMMITTEE BY EMAIL.

ORAL EXAM

ONE WEEK AFTER YOUR WRITTEN EXAM SUBMISSION. YOU WILL HAVE 10 MINUTES TO WRITE NOTES OR DIAGRAMS ON THE BOARD PRIOR TO THE START OF THE EXAM. YOU THEN LEAVE THE ROOM AND THE COMMITTEE DISCUSSES YOUR WRITTEN COMPONENT AND GENERAL CLASS PERFORMANCE PRIOR TO THE START OF THE EXAM. FOR THE FIRST FIVE MINUTES OF THE EXAM, YOU WILL HAVE A CHANCE TO SUMMARIZE THE PAPER AND WRITTEN EXAM. THE REST OF THE EXAM WILL CONSIST OF ANSWERING COMMITTEE MEMBER'S QUESTIONS TO TEST YOUR UNDERSTANDING OF THE PAPER AND APPLICABLE NBIO CONCEPTS. AT THE END OF THE EXAM, YOU WILL LEAVE THE ROOM AND THE COMMITTEE WILL DISCUSS YOUR PERFORMANCE.

PRELIM EXAM TIPS

Read recent review articles

To get started on researching your paper, identify key words used in your article. Then find review articles on these topics to gain a comprehensive understanding. Then, later dive into the primary literature. Add in visuals to your written exam to help make points.

Be prepared to not have an answer to every question

It is common to not know the answer to every question. Depending on the context of the situation, it is okay to say you do not know or you do not know but you think X because of Y.

Draw on the whiteboard for your oral exam

You are allowed to prep materials on the whiteboard **10 min** before the exam starts. Get creative! If you have something you want to talk about (maybe your strongest points), draw/diagram them on the board to guide conversation in a way that is helpful for you.

Pay attention to animal models

Animal models and genetics are covered early on in NBIO, but faculty love to ask questions about these. Make sure you know what animal models are used in your paper and how you can make these animal models.

- Genetic knock-in, knock-out, Cre-expression, CRISPR

Practice your 5 minute summary pitch

The exam will start with your pitch. If visuals are helpful for you, reference diagrams on the whiteboard to help guide your pitch. Think about the pitch like a verbal paper abstract, but add in your critiques as you go. What else could they have done to further support their findings?

Practice talking about the paper and your critiques

One way to practice is by acting like you are leading a journal club on the paper. Go through each figure, and talk out loud about what the figure accomplishes, what methods they are using, and how it fits into the main story.
.

Note: Do not assume the faculty on your committee will read your written exam. Have printed copies for them with you. Consider printing copies of the rubric for faculty as well.

PRELIM EXAM OUTCOMES

PASS

THE COMMITTEE THINKS YOU HAVE SUBSTANTIAL UNDERSTANDING OF THE TOPIC.

CONDITIONAL PASS

THE COMMITTEE WOULD LIKE YOU TO IMPROVE ON ONE OR MORE AREAS OF NEUROSCIENCE RELATED TOPICS. THIS OUTCOME HAPPENS ABOUT ONCE PER YEAR, AND IS NOT UNCOMMON. USUALLY THIS DEPENDS ON A MIX OF FACTORS: YOUR EXPERIENCE WITH DIFFERENT SUBSETS OF NEUROSCIENCE AND YOUR ASSIGNED COMMITTEE. USUALLY YOU WILL BE REQUIRED TO ADD ON A LITERATURE REVIEW TO YOUR WRITTEN EXAM OR TAKE AN ADDITIONAL CLASS.

NOT PASS

THIS WOULD REQUIRE THE REASSIGNMENT OF A NEW COMMITTEE AND A NEW PAPER. THIS OUTCOME IS VERY RARE.

Student Insight: If you need support after taking the exam, please reach out to member on the Neuroscience Student Committee Council. We have all been through the same process.

THESIS COMMITTEE

A typical thesis committee will be composed of the student's advisor, a Chair of the committee (selected by student), and three additional committee members (selected by student)

Composition of thesis committee must meet the following requirements:

Must have at least 3 Regular Neuroscience Curriculum faculty: https://www.med.unc.edu/neuroscience/curriculum/research/

Must have at least 5 members total
(meaning 2 members can be outside the department or from another University)

Your advisor counts as one of your members, but cannot serve as the Chair of your committee

Once your committee is formed, email the DGS the members of your committee.

THESIS COMMITTEE

Your thesis committee will approve milestones, provide feedback, and evaluate your thesis. What should you consider when selecting your committee?

#1. Area of Expertise

Consider adding a member for each area of expertise you have in your thesis.

#3. Expectations

Different faculty may have varying expectations for a student's timeline/goals.

#5.Time Availability

You may consider the time commitment members may be able to give depending on their academic responsibilities.

Student Tip: Meet with faculty before asking them to be on your committee to see if it is a good fit.

#2. Feedback Method

Consider the type of feedback each member will give you. Think about what is most helpful for your success.

#4. Communication

Faculty have differing communication styles, think about what will be most helpful to you.

THESIS PROPOSAL

SCHEDULING

YOU ARE RESPONSIBLE FOR COORDINATING AND SCHEDULING YOUR THESIS PROPOSAL EXAM DATE. STUDENTS SHOULD AIM TO PROPOSE THEIR THESIS BY THE END OF THE FALL SEMESTER IN THE THIRD-YEAR. REACH OUT TO FACULTY EARLY, AS IT CAN BE DIFFICULT TO FIND OVERLAPPING AVAILABLE TIMES. **EMAIL SUE MODLIN AS SOON AS THE EXAM IS SCHEDULED TO COMPLETE REQUIRED PAPERWORK.**

WRITTEN EXAM

THE WRITTEN PORTION OF YOUR EXAM IS TO BE EMAILED TO YOUR COMMITTEE ONE WEEK BEFORE YOUR COMMITTEE MEETING. THE WRITTEN PORTION FOLLOWS THE FORMAT OF A NRSA FELLOWSHIP, INCLUDING SPECIFIC AIMS, BACKGROUND/SIGNIFICANCE, PRELIMINARY STUDIES, RESEARCH (EXPERIMENTAL) DESIGN, AND REFERENCES. THIS SHOULD NOT EXCEED 10 SINGLE SPACED PAGES (NOT INCLUDING REFERENCES).

ORAL EXAM

AT THE START OF YOUR EXAM, YOUR PI WILL BE ASKED TO STEP OUT OF THE ROOM. HERE, YOU WILL BE ASKED IF YOU HAVE ANY CONCERNS. THEN, YOU WILL BE ASKED TO STEP OUT SO THE COMMITTEE CAN DISCUSS YOUR PROGRESS. FOLLOWING, YOU WILL PRESENT YOUR PROPOSAL PRESENTATION, TAKING ON THE GENERAL FORMAT OF YOUR WRITTEN EXAM, COMMITTEE MEMBERS MAY ASK QUESTIONS THROUGHOUT AND/OR AFTER YOUR EXAM.

THESIS DEFENSE

Report of Final Dissertation Written

Specific formatting instructions for your written thesis can be found using the QR code link. UNC also offers a Dissertation Writing Bootcamp.

Report of Final Oral Exam/Thesis Defense

1. Closed private meeting

Written exam should be submitted to the thesis committee 2 weeks prior to the closed private meeting defense. You should plan to submit early so that you can address feedback and add in suggested edits. During this private thesis defense, you will be questioned extensively by your committee.

2. Public Seminar

After successfully completing the closed private thesis defense, you should schedule your public seminar defense. At this time notify Sue to publicize the event.

DEPARTMENT EVENTS

Monthly Breakfast Socials

Located on the 6th floor of MEJ, lookout for email announcements for the dates!

Social Events (2-3x per semester)

Located on or off campus and organized by the Student Council Social Committee! These events will have food/drinks and are open to everyone in the curriculum! (Including faculty)

Career Lunch & Learn Series

Held 2-3x per semester. These events are organized by the Student Council Career Committee! Professionals from non-traditional academic careers are invited to talk to students about their work. Lunch is provided!

Annual Neuroscience Retreat

This is an annual event where the entire department is invited! During the retreat, new students introduce themselves, members of the department give talks, a guest speaker from a visiting University joins us for a keynote talk, and there is a poster session (required for second years). Between events, there is free time given to explore the retreat area, play games, and/or relax. The last night ends with a large bonfire.

RESOURCES

NEUROSCIENCE CENTER FACULTY

THIS WEBSITE INCLUDES ALL NEUROSCIENCE CURRICULUM FACULTY MEMBERS: HTTPS://WWW.MED.UNC.EDU/NEUROSCIENCE/CURRICULUM/RESEARCH/FACULTY/

CORE FACILITIES

UNC HAS MANY CORE FACILITIES AND SERVICES TO ASSIST YOU IN YOUR RESEARCH. ADDITIONALLY, THE NEUROSCIENCE CENTER HAS A MICROPSCOPY CORE LOCATED IN MEJ! LINK: HTTPS://WWW.MED.UNC.EDU/COREFACILITIES/FIND-A-CORE-FACILITY/

UNC EVENTS

UNC HOSTS MANY EVENTS FROM CONCERTS, ART SHOWS, DANCE PERFORMANCES, AND WORKSHOPS. SEE THE UNIVERSITY CALENDAR: HTTPS://CALENDAR.UNC.EDU/

WELLNESS & MENTAL HEALTH

EMAIL THE BBSP EMBEDDED COUNSELOR, ZOE SILVERMAN, AT ZOE.SILVERMAN@UNC.EDU FOR AN INITIAL ASSESSMENT OF NEEDS, INDIVIDUALIZED TREATMENT PLANNING FOR REPORTED CONCERNS, INITIATING ENGAGEMENT IN BRIEF THERAPY, CONNECTION TO GROUP THERAPY SERVICES, MEDICATION MANAGEMENT, AND REFERRAL COORDINATION. FOR CRISIS OR 24/7 SUPPORT, CALL UNC CAPS AT 919-966-3658 OR CALL/TEXT 988 FOR THE SUICIDE AND CRISIS LIFELINE. SEE RESOURCES: HTTPS://BBSP.UNC.EDU/WELLNESS/