Duke Biochemistry
Duke University School of Medicine

2019-20
Graduate Student Handbook

v.6.7.2019

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WELCOME TO DUKE BIOCHEMISTRY

The Duke Department of Biochemistry has a rich history of research accomplishments at the cutting edges of biological and chemical research. We also contribute to a broad educational mission, training and teaching undergraduate, graduate and medical students. Currently, the Department comprises 21 primary and 14 secondary faculty members, 6 active emeritus members, 2 adjunct members and ~50 graduate students and ~40 postdoctoral researchers and staff scientists. We occupy approximately 42,000 square feet of the Nanaline Duke Building and 5,000 square feet of the adjacent Sands Building.

Faculty Expectation for the Completion of a Ph.D. Degree

To earn the Ph.D. degree in Biochemistry at Duke University, the Faculty of the Department of Biochemistry expects each graduate student to produce an **independent body of original, high-quality scientific work.** Though circumstances vary, this work will result in authorship on typically two peer-reviewed publications, including those on which the student is first author, prior to or soon after graduation.

Timeline to Degree for Biochemistry Ph.D. Students

The Preliminary Examination for candidacy must be completed by the end of the student's third year (G3) and will expire after five years (G8). Extensions of the Preliminary Exam deadline beyond the end of G3 must be approved by both the DGS and Associate Dean for Academic Affairs, for an examination on a specific date in the fall semester of the fourth year. Students who have not completed their Preliminary Examination by the end of G4 will be withdrawn.

Dissertation examinations will be expected by the end of graduate year seven (G7) and **must be completed by the end of graduate year eight (G8)**. For students who will be in G8 prior to graduation, the annual progress report and a specific plan for completion of the dissertation must be signed by the student, committee chair and DGS and submitted to the Associate Dean for Academic Affairs. Extension requests must include a specific timeline for completion within the upcoming academic year, be signed by the student and committee chair, and be forwarded to the Associate Dean with the endorsement of the DGS. If this extension is granted and the dissertation is not defended and accepted by the new deadline, the student will be withdrawn from candidacy.

Department Contacts:

Biochemistry Graduate Studies Office (BGSO):

The DGS and DGSA serve as advocates for graduate students, who are encouraged to approach the DGSA & DGS with any school-related and/or personal concerns. All issues discussed will remain confidential. Students may either meet with the DGS and/or DGSA during their regular office hours or schedule an appointment.

Dr. Meta Kuehn, Director of Graduate Studies (DGS) – The Director of Graduate Studies is the official departmental or program administrator of the rules and regulations of the Graduate School, the designated advocate of the needs of the graduate program and graduate students both within the department and in the University, and the advisor of all matriculating graduate students prior to research group affiliation.

DGS: Meta Kuehn, PhD
Office: Room 220A Nanaline Duke
Phone: 919-684-2545
Email: kuehn@duke.edu

Amy Norfleet, Assistant to Director of Graduate Studies (DGSA) – The DGSA provides assistance with all graduate issues outside of the actual study of Biochemistry: registration, payroll, financial aid, visa services, health insurance, parking, program requirements, exam scheduling, room reservations, counseling, etc.

DGSA: Amy Norfleet
Office: Room 251 Nanaline Duke
Phone: 919-681-8770
Email: norfleet@duke.edu

Biochemistry Department Administrative Office:

Dr. Richard Brennan, Biochemistry Chair -- The Biochemistry Chair is the official link between the department and the dean. The Chair leads the department in planning, recommend allocation of space to their dean, and is responsible for budget preparation, annual faculty evaluations, evaluations of faculty for promotion and tenure, assignment of academic and nonacademic staff, assignment of teaching loads and student advising, and adherence to departmental bylaws.

BCH Chair: Dick Brennan, PhD
Office: Room 242A Nanaline Duke
Phone: 919-684-9471
Email: richard.brennan@duke.edu

Administrative Assistant to the BCH Chair: Peggy Wilkison
Office: 255 Nanaline Duke
Phone: 919-681-8804
Email: prw2@duke.edu

Department Business Manager: Esther Self
Office: 255C Nanaline Duke
Phone: 919-684-5519
Email: esther.self@duke.edu

Office Resources and Access:

DukeID Card and after hours door access: The DukeCard Office is located in the Telcom Building (rear entrance) off Research Drive. Your first DukeCard is free, and is a requirement for all students. **Please see the BGSO (Amy) prior to going to get your DukeCard.** You can also visit the following site for more information on your DukeCard: http://dukecard.duke.edu/

After hours door access: To obtain after hours door access, you will need to have a DukeCard that contains a Proxchip. If your card does not contain a Proxchip, please see Amy Norfleet. If you have a Proxchip DukeCard, please bring your card to Amy Norfleet and she will send a request for after hours access to the Nanaline Duke, Sands, Jones, & CARL buildings.

E-mail: Before you arrive on campus for Orientation, you should have already received your official Duke NetID email log-in and password. We encourage you to use this account, but should you change your email address, please notify the BGSO immediately. You will also use your NetID log-in to register for classes each semester.

Mail: All mail sent to the faculty, staff, department, DGS, BGSO or Administrative Office must include «Box 3711 Biochemistry» to guarantee delivery.

Computers/Phones: Computers and phones should be available for your use in your rotation labs and once you join a lab. We also have computers and printers located in 252 Nan Duke for student use (Biochemistry Student Lounge). The password for these computers is: *nd251bc*

Photocopiers: All of our departmental copiers require a pass code. To use the color copier near the cold room on the 2nd floor of Nan Duke, please use code 44120. To use the black & white copier on the 2nd floor of Nan Duke (near Oas lab), use code 4412.

Fax: The fax machine is located in the BCH Administration Office (255 Nanaline Duke) and is available during office hours. The fax # is 919-684-8885. If you have a long distance fax, you will need a long distance fax code that can be obtained from your lab manager/staff assistant.

Room Reservations

Please see below for contact information to reserve space in various rooms across campus.

Contact	***Room** (occupancy)*
Amy Norfleet 681-8770, norfleet@duke.edu **Marsha Brooks** 681-5282**,** mbrooks@duke.edu **Peggy Wilkison** 681-8804, prw2@duke.edu **Margot Wuebbens** 684-3120, wuebb001@duke.edu	**Nanaline Duke Buiding: (1st & 2nd floors)** **252B Nanaline Duke** (25) **247 Nanaline Duke** (20) **147 Nanaline Duke** (100-110) **209 Nanaline Duke** (10) **Sands Buiding:** **279 Sands** (18)
Joanne Bisson 684-2775, joanne.bisson@duke.edu	**248A Nanaline Duke** (20) (across from the Modrich lab)
Kelly Long, 684-8085 kelly.long@duke.edu	**Nanaline Duke Buiding: (3rd & 4th floors)** **384 Nanaline Duke** (25) **437/439 Nanaline Duke** (25-30) **Sands Buiding:** **465 Sands** (22) – left unlocked **472 Sands** (18) - locked
Jennifer Goins, 684-3578 immunologydept@mc.duke.edu	**117A Jones** (small room) **354 Jones** (small room) **321** Jones (small room)
Med Center Room Reservations: *25Live* https://25live.collegenet.com/duke For any questions, please call 684-9026 or email mcedrooms@mc.duke.edu	**Including:** **143 Jones** (150) **103 Bryan Research** (190) **001 MSRB** (70)
Duke University Event Management: http://events.duke.edu/facility/ Event Management offers a wide-range of facilities to accommodate any event from meetings to banquets to theater shows. Our department works to provide all clients with an appropriate facility with all amenities and technical support to assure the successful completion of your next meeting or event.	

FINANCES, VACATION, and HEALTH INSURANCE

The Duke University Graduate School and the Biochemistry program offer a wide array of financial support. Funding is available from annually allocated awards funds, instruction, endowed fellowships, foundations and other private support, as well as federal research and training grants. Graduate School and University Contacts are listed in Appendix II.

Financial Support Summary

Financial support for continuing Ph.D. graduate students in the Department of Biochemistry is typically provided over a 12-month period. Financial support for the 2019-2020 Academic Year is as follows:

Stipend (12 months)	$31,800.00
Tuition (Yrs 1-3 only)	$55,680.00
Tuition Remission ($3,850/sem)	$11,500.00
Graduate Student fees	$1,500.50
Health Insurance (est.)	$3,535.00
Transcript Fee (Yr 1 only)	$40.00
Total (per year)	**$104,055.50**

Tuition is charged on a per semester basis for all graduate students. Entering Ph.D. students are assessed a tuition amount of $27,840/semester (fall and spring only), as well as a tuition remission in the amount of $3,850/semester (summer) for the 2019-2020 AY. A tuition award in the total amount of $67,180.00 will be paid directly to the Bursar's Office on your behalf. After the first 3 years of study, only tuition remission in the amount of $3,850.00/semester (2019-20 rate for fall, spring & summer) is charged for continuing Ph.D. students on a per semester basis. All tuition, tuition remission and fees will be paid at the beginning of each semester and charged directly to the institutional fund or grant that is supporting your funding.

Recreation fee:

The recreation fee for students in their first 5 years of study will be paid by the Graduate School for use of the campus recreation facilities. For the 2019-20 AY, students beyond their 5th year of study, who choose to use the campus recreation facilities during the academic year, must opt in to have this fee paid and continue their access to the recreation centers. All 5^{th} + year students will receive an email with information on how to "opt in" at the beginning of each academic year. If you choose to "opt in", your student account will be charged a recreation fee of $158.00 per six-month period (July 1–December 31 and January 1–June 30). The Department has decided to provide funding to pay this fee for students who choose to opt-in for the 2019-20 AY. This payment will be posted directly to your Bursar account. Please notfify the DGSA (Amy Norfleet) if you are a 5^{th}+ year student who is planning to opt-in.

Stipend Disbursement

Fellowship Stipend Payment Schedule: During the first two years of study, students are typically supported by a Graduate School Fellowship award and stipend. During your first year of study, your fellowship stipend paid to you over 13 months (Aug. 2019-Aug.2020), at a rate of $2,446.15/month(pre-tax). Graduate students in their second year of study will have their fellowship stipend paid over 12 months, at a rate of $2,650.00/month (pre-tax). Fellowship stipends are paid through the non-compensatory pay system, are paid on the last working day of the month, typically beginning in September of each academic year.

Research Assistantship Stipend Payment Schedule: Beginning in the third year of study, financial awards will be supported directly by PI grants & funding. The research assistantship will be funded directly from your research advisor and be paid through the monthly faculty staff payroll in 12 equal monthly payments on the twenty-fifth day of each month.

Monthly payroll schedules can be found at the following website:
http://finance.duke.edu/payroll/schedules/index.php

Award letters *will be sent to students, in May of each year, detailing new stipend and fee amounts.*

Students have ultimate responsibility for ensuring that their tuition and fees are paid. Students should review statements received from the Bursar's Office regularly and quickly resolve payment problems or issues that arise. Students with questions about their bursar accounts should contact the director of graduate studies assistant to the director of graduate studies in their department, the Bursar's Office, or the Graduate School Office of Budgets and Finance.

Students must be enrolled in the Graduate School in order to receive fellowship or assistantship support. It is the practice of our department to work cooperatively with the Graduate School and School of Medicine to ensure that you will be financially supported at the annual level for six consecutive academic years, provided that you continue satisfactory progress in our graduate program.

It is the practice of our department to work cooperatively with the Graduate School and School of Medicine to ensure that you will be financially supported at this level until the completion of your degree, provided that you continue satisfactory progress in our graduate program. As a member of an outstanding graduate community, we also strongly encourage you to apply for other institutional and outside fellowships. Awards of the type add distinction to your graduate record and enhance our ability to support additional highly qualified students in graduate programs at Duke.

Duke@Work

For those students that are paid on the 25th of each month, you will now have the option of accessing your pay statements through the on-line Duke@Work system (http://work.duke.edu).

You can also use Duke@Work to do any of the following:
- View current and past pay statements.
- Change your home address.
- Update your work address (physical location).
- Set-up or change bank accounts for direct deposit.
- Change Federal and North Carolina tax withholding amounts (if required).

Please note: The Duke Payroll system and the Duke Hub system are NOT connected. Any change in information submitted in one system will not automatically change the same information in the other. If you make a home address change in Duke@Work, you will need to make the same change in Duke Hub.

Duke Corporate Payroll

Stipend payments for graduate students are distributed from the Duke Corporate Payroll office. Corporate Payroll Services operates a customer service center which provides the following services: issuing payments for salaries and corresponding benefits, as well as voluntary and involuntary deductions; fellowship and scholarship payments to Duke students; distributing

annual tax forms, IRS Forms W-2, 1042S and 1099 forms; providing wage verification requests for mortgage companies or governmental agencies; and offering training for departmental payroll representatives, human resources managers, and business managers. Corporate Payroll can be contacted by phone at 919-684-2642 or by email payroll@duke.edu.

Taxes

Under the Tax Reform Act of 1986, both fellowship & assistantship stipends are taxable:
By IRS rules, scholarships and fellowships are reportable as income with the exclusion of tuition, fees, books and equipment required for educational support. The university has no reporting or withholding requirements on fellowships; however, you may choose to have taxes withheld from your fellowship by completing a W4 form with the payroll office. We encourage you to read the IRS' publication found at http://www.irs.gov/pub/irs-pdf/p970.pdf concerning Tax Benefits of Education and the taxation of scholarships and fellowships, or to consult with your tax advisor concerning this financial aid package, if necessary

For U.S. citizens, fellowship stipends may be reduced, for tax purposes, by the amounts paid for tuition, fees, and required books, supplies, and equipment. For general information about the taxability of scholarships and fellowships, students should see IRS publication 970.

For international citizens, stipend payments are subject to withholding of federal and state income taxes, based on the existing tax treaty between the student's country and the USA. In addition there is an IRS requirement that tuition payments for foreign students must be reported to the federal government. Please click the following link for more information on tax treaties. *Each student's tax situation is unique, and the Payroll Office at Duke provides assistance to enrolled students regarding withholding requirements.*

Graduate Student Vacation & Sick Leave Policy

The vacation policy was implemented to ensure that all Ph.D. Research Assistants (years 3+) are allowed a minimum amount of paid time off each year, and to outline the process for requesting such time away. This policy applies only to Ph.D. RAs since their research work does not necessarily correspond to the Academic Calendar. It is expected that Teaching and Graduate Assistants (years 1 & 2), and Duke funded fellows, will have ample vacation time during periods when classes are not in session.

I. Graduate students who are funded by research projects on a twelve-month stipend schedule are allowed, at minimum, two weeks (ten working days) of vacation each year. Students who wish to take vacation must apprise their advisor of their intentions at least two weeks before the planned absence.

II. Students wishing to take additional periods of time off, paid or unpaid, must receive the approval of their advisor. If payroll changes are necessary, the advisor will notify the department or program business office prior to the payroll deadline for the affected pay period of any such arrangements. Approval for additional periods of paid time off may be subject to funding agency restrictions.

III. University observed holidays and time away for professional activities (conferences, workshops, interviews, for instance) do not count against vacation. Ph.D. Research Assistant holidays will follow the Holiday Schedule for University Staff, which can be found at: http://hr/benefits/time_away/university/holidays/index.php - university. Note also that the Graduate School policy on religious holidays corresponds broadly to that of Trinity College: students who wish to observe religious holidays must inform their advisor in advance, must

plan to make up any missed work, and cannot be required to take the religious holiday as a vacation day.

IV. Unclaimed vacation cannot be carried over to a subsequent year nor will any unclaimed vacations days be paid out if not used by the year-end or upon termination of the research position. The annual cycle for determining available vacation will be September 1 to August 30 of the following year.

V. Sick Leave Policy: Graduate students are allowed a minimum of 12 working days per year. Students wishing to take additional periods of sick leave, paid or unpaid, must receive approval from their advisor. Please note: You cannot carry over or payout unclaimed sick days.

Health and Dental insurance and Health Fees

Health insurance is required for all Duke students. If you choose to enroll in Duke's student medical insurance plan (Duke SMIP), the Graduate School will cover the cost of your premium. Information on the Duke SMIP can be found on the Duke Student Health website: http://studentaffairs.duke.edu/studenthealth/health-insurance.

International students, those holding F-1 or J-1 visas, are required to enroll in the Duke SMIP. Domestic students may choose not to enroll in the Duke plan; however, those who do not enroll must meet the waiver criteria and provide proof of comparable alternative insurance coverage. If you do meet the waiver criteria and choose to waive the Duke SMIP, the Graduate School will provide a $600 stipend supplement that will be included in your October paycheck.

At the beginning of the fall semester Duke students must provide proof of coverage by an adequate medical insurance policy or purchase the Duke-sponsored medical insurance plan. If you have a medical insurance plan based in the United States, it is important to review your policy to assure proper coverage. Always have your insurance card and prescription drug card with you when seeking health care to facilitate the filing of insurance claims.

Leaves of absence, graduation, and terminations: Students who terminate from the Ph.D. program, take a personal leave of absence, or complete their degree/graduate will have the option to continue their health insurance coverage for the remainder of the plan year at their own pro-rated expense. Otherwise the Graduate School payment of the premium will continue through the last day of the month during which the graduation became effective (see more detailed info p. 50). If a student chooses to maintain his/her Duke medical insurance coverage, the student will be charged for, and expected to pay, the balance of the plan term premium through his/her Bursar's account. If the student wishes to terminate his/her Duke insurance plan, he/she must complete the Petition to Terminate Coverage form and submit it to the Student Health Insurance Manager in the Student Health Center.

Questions concerning enrollment and termination of the Duke Student Medical Insurance Plan should be directed to insurance@studentaffairs.duke.edu or 684-1481, in the Duke Student Health Center (http://studentaffairs.duke.edu/studenthealth/health-insurance). You can contact the Duke Student Health Center directly at (919) 681-WELL.

Dental Insurance: Dental services are available through Duke Wellness Center. All students enrolled in the Student Health Insurance Plan are also eligible for discounted dental visits

through BASIX. DentalBlue dental insurance is also available for purchase at the following site: *http://www.bcbsnc.com/content/plans/dentalblue/index.htm*

Health Fee: Ph.D. students in Biochemistry have their health fee and health insurance paid for by the University and/or their faculty advisor for their first 6 years in the doctoral program. The health fee is separate from comprehensive health insurance and covers most of the services at the Student Health Center (SHC), if medically indicated and rendered by a Student Health Provider.

Duke Student Health

It is important to take responsibility of your health and wellness. The friendly and knowledgeable staff at the Duke Student Health Center is here to help you with your healthcare needs during your time at Duke.

***Health Information for New Students**: http://studentaffairs.duke.edu/studenthealth/new-students*

Web: http://www.studentaffairs.duke.edu/studenthealth

Location: 305 Towerview, next to Penn Pavilion.

To make a regular appointment, please call 919-681-WELL (9355) Option #1 or book online through Duke MyChart

Same Day / Urgent Care Visits: If you have an urgent medical concern and need to be seen the same day, please call the triage line at 919-681-9355, Option #2.

Student Health Services (SHS) at Duke University is jointly supported by the Division of Student Affairs and the Department of Pediatrics. The Duke Student Health Center is the primary source for a wide range of healthcare services, many of which are covered by the Student Health Fee. The Duke Student Health Center's mission is to provide a compassionate, non-judgmental environment that allows for comprehensive, first-class health care and patient education in a manner that is respectful of diversity. At Student Health, the goal is to provide convenient and comprehensive healthcare to all Duke students. Medical issues can arise at any time, sometimes without warning. Student Health's urgent care services allow students to see a healthcare provider and receive assessment and treatment in a timely fashion - usually same day or within 24 hours - depending on visit availability. Students needing urgent care for illness or injuries will be given priority. For non-urgent health concerns or chronic medical problems, students should make a regular appointment.

Medical Services are provided by board-certified faculty physicians, physician assistants, nurse practitioners, and resident physicians under faculty supervision. Students are encouraged to use our center as their medical home and to access other health resources as needed, including the specialty clinics at Duke University Medical Center. This will help with coordinating and providing cost-effective healthcare.

Student Health Services offers general medical care, nutritional counseling, laboratory services, immunization and allergy clinics, sexual health counseling, and a variety of other services.

- Allergy Clinic
- Campus Center Pharmacy

- Dental Care
- Immunizations
- International Travel Clinic
- Laboratory
- Physical Therapy
- Primary Care

Individuals with Disabilities

The Duke Biochemistry Department is committed to providing reasonable accommodations for qualified individuals with disabilities in compliance with Section 504 of the Federal Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990 and the ADA Amendments Act of 2008, as well as applicable state regulation and federal and state privacy laws.

Student Disability Access Office: Our goal is to provide and coordinate accommodations, support services and programs that enable students with disabilities to have equal access to all Duke University programs and activities. Services and accommodations are provided to students with a variety of disabilities including Asperger's Disorders, Attention Deficit Hyperactivity Disorders, blindness/low vision, deafness/hard of hearing, learning disabilities, mobility and chronic health, psychological disorders and other impairments.

If you believe you may need and qualify for reasonable accommodations, please visit Duke's Disability Management System at http://www.access.duke.edu/students/index.php for detailed information and procedures.

LIVING IN AND AROUND DUKE

Living at Duke is about the people, places and opportunities overflowing on campus. It is also about you. So take a look around, take advantage of all that life on campus has to offer, and don't forget to take care of yourself.
Web: http://studentaffairs.duke.edu/living-at-duke

Dining

Duke Dining Venues and Menus: http://studentaffairs.duke.edu/dining/venues-and-menus
Merchant-On Points: http://studentaffairs.duke.edu/dining/merchants-points
Shabbat Dinners: http://studentaffairs.duke.edu/jewishlife/shabbat-and-holidays#node-637

Getting Around

Campus Map: http://maps.duke.edu/
Duke Buses: http://parking.duke.edu/buses_vans/bus_sched/index.php
WeCars: http://parking.duke.edu/alternative_transportation/wecar/index.php
Bull City Connector: http://parking.duke.edu/buses_vans/bull_city.php
Triangle Region Transportation & Routes: http://www.gotriangle.org/transit/maps-and-schedules/

Important Student Information Resources

Graduate Student Affairs: http://gradschool.duke.edu/gsa/index.php
Graduate and Professional Student Council (GPSC): http://gpsc.duke.edu/
Other campus offices and information: http://students.duke.edu/

Engaging in the Community

The Oasis: http://studentaffairs.duke.edu/duwell/about-us#node-626
Outdoor Adventure Series: http://studentaffairs.duke.edu/ucae/programs/outpost-duke-bikes/outdoor-adventure-series
DukeGroups: http://studentaffairs.duke.edu/ucae/student-organizations#node-1524
The Hub: http://studentaffairs.duke.edu/ucae/programs#node-1597
The Outpost & Duke Bikes: http://studentaffairs.duke.edu/ucae/programs#node-1589
Duke Intramurals: http://recreation.duke.edu/recreation/intramurals/
Jazz at the Mary Lou: http://studentaffairs.duke.edu/mlw/programs-services#node-1360

Safety and Conduct

Duke Community Standard: http://studentaffairs.duke.edu/conduct/about-us#node-950
Safety & Security at Duke: http://www.duke.edu/services/safety/index.php
Incident Reporting: http://studentaffairs.duke.edu/conduct/report-incident
Conflict Mediation: http://studentaffairs.duke.edu/dos/offices#node-765
Duke Vans: http://parking.duke.edu/buses_vans/duke_vans.php

Help Resources

Transitioning and Succeeding: http://studentaffairs.duke.edu/caps/self-help#node-897
Managing Stress: http://studentaffairs.duke.edu/caps/workshops-and-discussions#node-893
Counseling & Psychological Services: http://studentaffairs.duke.edu/caps
DukeReach: http://studentaffairs.duke.edu/dos/dukereach
Gender Violence Prevention and Intervention: http://studentaffairs.duke.edu/wc/gender-violence

Substance Abuse Prevention: http://studentaffairs.duke.edu/duwell/individual-wellness-planning
Center for LGBT Life: http://studentaffairs.duke.edu/lgbt
Duke Police: http://www.duke.edu/police/index.php
Duke EMS: http://duems.groups.duke.edu/

Housing

Housing, Dining, & Residence Life (HDLR) is a campus resource, within the office of Duke Student Affairs, for Duke University students to find rental housing in the Durham area.

Most graduate students rent **off-campus housing** from private landlords in Durham. HDRL maintains an online database of available rentals to assist students in their searches: http://studentaffairs.duke.edu/hdrl/living-campus#node-1483.

Off-Campus Housing for Graduate Students

For those seeking off-campus accommodations, Duke provides Duke Community Housing as a resource for students, faculty, and staff to find and advertise rental-housing options in the Durham area. Duke offers these listings only as a service and does not screen landlords nor guarantee the quality of the housing listed. These listings are not comprehensive.

You may never have rented real estate before – and renting in the Durham area may be different in important ways from renting in your hometown. We've put together this guide to help you have a trouble-free experience. *Apartments near Duke (and popular with current students) are listed on the next several pages*. To search for properties and rooms for rent, visit the following sites:

offcampushousing.duke.edu
http://studentaffairs.duke.edu/forms/chouse/search.php
http://studentaffairs.duke.edu/hdrl/living-campus
http://gpsc.duke.edu/resources-and-advice/housing-guide/
http://www.chroniclehousing.com/
http://dukelist.duke.edu/
www.forrent.com/search-apartments-near-colleges/NC/Duke-University.php

On-Campus Housing for Graduate Students

Limited **on-campus housing** is available to full-time graduate students. Central Campus currently provides housing for 1,000 students. These apartments include efficiency, one-bedroom, two-bedroom, and three-bedroom units and are fully furnished. Priority for housing assignment will be awarded to graduate students who arrive from abroad on student visa status AND it is their first time attending school outside of their home country. Assignments are made in the order of receipt of completed applications.

Web: http://studentaffairs.duke.edu/hdrl/graduate-professional-students
Graduate Housing Application: https://duke.qualtrics.com/SE/?SID=SV_6fDaLA0J14cqNVy

Parking at Duke

Most Graduate and Professional students commute from off campus to Duke. Parking is provided to graduate and professional students in mid- to low-priced commuter lots throughout

campus (http://www.parking.duke.edu/parking/zones_lots/full_listing.php#proximate). Please visit the Duke University Parking and Transportation Services website for information on how to acquire a permit for on-campus parking: http://www.parking.duke.edu/. Parking permit fees are charged to each student's Bursar account for payment.

Contact: 919-684-PARK (7275) or tranpark@duke.edu

Location 1: Room 04230 Duke Clinics (adjacent to Medical Center Bookstore)
Office Hours: Monday-Friday, 7:30 a.m. – 3:00 p.m.

Location 2: 210 Campus Drive
Office Hours: Monday-Friday, 10:00 a.m. – 3:00 p.m.

For information about Durham bus stops and routes that serve apartment communities, go to Duke Parking & Transportation: http://parking.duke.edu/buses_vans/bus_sched/index.php

Graduate Student Fellowships and Funding Opportunities

Department of Biochemistry: Fellowship for Graduate Studies

Any Biochemistry graduate student, currently in good standing with the department, is eligible for a Biochemistry Fellowship for Graduate Studies. This award will consist of a fellowship, to cover the balance of stipend not covered by Graduate School or PI resources. This fellowship is offered to students to aid in the pursuit of their education. No work services are expected of them in return.

Internal and External Competitive Funding Opportunities for Graduate Students

Biochemistry graduate students are urged to compete for Duke University, national, international, and foundation awards available for graduate study. These awards reflect well on the students' graduate record and often provide additional funding for conferences and educational resources.

The Department of Biochemistry provides a **$3,000 bonus** to any graduate student, who obtains an external graduate fellowship that covers at least two years of her or his graduate career.

IMPORTANT: Please notify your lab grant manager when you apply for any outside funding award/fellowship. You will also need to notify your grant manager the outcome of your application (if you have or have not received the award/fellowship).

Duke Competitive Fellowships for Continuing Students
Applications for 2019-20 will be available in mid-September. Fellowship awardees are notified in late-March. More information about the types of fellowships offered can be found at the following site: http://gradschool.duke.edu/financial-support/find-funding

Office of Research Support (ORS):
Duke's ORS lists awards available from a variety of federal and private sources, as well as awards funded by the university. External awards typically replace departmental or Graduate School awards: https://ors.duke.edu/orsmanual/graduate-and-professional-student-funding

Conference Travel Awards & Fellowships

Graduate School – Conference Travel Fellowship:

The Conference Travel Fellowship is available to any graduate student enrolled in a Ph.D. granting program or department, who has passed all parts of the preliminary exam and is actively participating in a conference (i.e., presenting a paper or poster, or leading a discussion). Students are limited to one conference travel fellowship per year (June 1 – May 31). If awarded, the fellowship will provide up to $525 for domestic and $700 for international travel and will include the cost of registration fees, primary travel, three nights of lodging, and meals for four days (up to $25/day). The application must be complete and submitted at least one month prior to the date of the conference and can be found at the following Graduate School website: http://gradschool.duke.edu/financial-support/find-funding/conference-travel

Biochemistry Department – Kamin Travel Fellowship:

Any biochemistry graduate student who is awarded a Graduate School Conference Travel Fellowship will be automatically eligible for an additional Kamin Fellowship for up to $400. As the Graduate School Travel Fellowships cover up to $525 of the cost of travel to a conference, the additional Kamin Fellowship should cover most or all of any remaining expenses. Please submit a copy of your completed Graduate School Conference Travel Application and approval along with the Kamin Travel Application to the BGSO (Amy Norfleet) in room 251 Nanaline Duke. Please contact the BGSO for a copy of the application.

Note: Graduate students who are unable to obtain a Graduate School Travel Fellowship can apply for a Kamin Travel Fellowship by submitting this application to Amy Norfleet, but the award is not automatic. In this case, you should also include a brief letter of intent with relevant details of the trip and the reason(s) for not applying or receiving the Graduate School award.

Important information for International Travel: Students who are traveling internationally are required to complete the Graduate & Professional Students Travel Registration form: https://travel.duke.edu/index.cfm?FuseAction=Abroad.ViewLink&Parent_ID=0&Link_ID=0A0EB6FB-5056-BA1F-72B7EF6E347897BA. Make sure to have your flight, destination and passport information available before you log in (per the Duke Travel Policy).

GRADUATE STUDENT REPRESENTATION, COUNSELING & PEER SUPPORT

Biochemistry Graduate Student Council (BGSC)

The Biochemistry Graduate Student Council (BGSC) is composed of five members who are elected to represent the Biochemistry graduate student body in an annual, student-wide election. Four members serve as core BGSC representatives, while the fifth member is the Graduate and Professional Student Council (GPSC) Biochemistry representative.

At their monthly meetings, BGSC and interested students gather to discuss upcoming events hosted by the BGSC, which include science-oriented volunteer activities, social events, and Duke student life activities. BGSC also helps to identify and solve issues related to graduate student life by communicating with the department and with the Graduate School.

For more information on how to participate in this group please refer to the official bylaws. For information on upcoming and past events hosted by the BGSC, visit the official Facebook page. Please feel free to contact the BGSC at DukeBiochemGSC@gmail.com with ideas for events or any concerns or questions.

Graduate and Professional Student Council (GPSC)

The Graduate and Professional Student Council of Duke University (GPSC – pronounced 'gypsy') is the umbrella student government organization for Duke's nine graduate and professional schools.

Location: 101-3 Bryan Center
GPSC website: http://gpsc.duke.edu

Our purpose is to:

- represent and advocate on behalf of graduate and professional students at Duke University;
- serve as a liaison among the student governments of the graduate & professional schools;
- serve as a liaison between graduate & professional students and the University Administration;
- nominate graduate and professional student representatives to University committees;
- program events of interest to the graduate and professional student community;
- and financially support the programming of graduate and professional student groups.

The **Duke Student Survival Guide** is a wiki resource that any Duke student may log into to both post and access useful information about life at Duke and in Durham. It currently has information about topics ranging from parking on campus to coffee shops around town and everything in between. To access the site, go to tinyurl.com/DukeSurvivalGuide and log in with your Duke NetID and password.

Office of Biomedical Graduate Education (OBGE)

Website: https://medschool.duke.edu/education/degree-programs-and-admissions/office-biomedical-graduate-education

The Office of Biomedical Graduate Education in the Duke School of Medicine coordinates activities that are not specific to individual programs but impact all graduate students in the School of Medicine. These activities include the Responsible Conduct of Research retreat each

fall for new students and the Chancellor's Scholars Program, which is funded by the Chancellor for Health Affairs and awards fellowships to outstanding international and domestic students. It also serves to implement and regularize policies within the biomedical graduate programs and is the administrative home for the **Office of Biomedical Graduate Diversity**. The office is also the administrative home for several of the interdisciplinary programs.

The Office of Biomedical Graduate Education is directed by the Associate Dean for Research Training, Christopher Nicchitta, Ph.D. (christopher.nicchitta@duke.edu), and the Director of Biomedical Graduate Development, Lillian Zwemer (lillian.zwemer@duke.edu).

Biomedical graduate education encompasses eleven programs that confer a PhD degree. Seven reside in the School of Medicine and include Biochemistry, Cell Biology, Immunology, Molecular Genetics and Microbiology, Neurobiology, Pathology, and Pharmacology & Cancer Biology. Four (Computational Biology and Bioinformatics, Medical Physics, Molecular Cancer Biology, and the University Program in Genetics and Genomics) are interdisciplinary programs that have a substantial component in the School of Medicine but whose students also work with mentors in the Trinity College of Arts & Sciences, the Pratt School of Engineering and Nicholas School of the Environment. In addition to the PhD-granting programs, there are five "admitting programs" which matriculate students and provide interdisciplinary course work but whose students affiliate with a PhD granting program after the first year or two. These admitting programs include Cell and Molecular Biology, Cognitive Neuroscience, Developmental & Stem Cell Biology, Integrated Toxicology & Environmental Health, and Structural Biology & Biophysics. Admission to all PhD programs is through the Duke Graduate School.

Office of Biomedical Graduate Diversity (OBGD)

Website: https://medschool.duke.edu/about-us/diversity-and-inclusion/office-biomedical-graduate-diversity

The Office of Biomedical Graduate Diversity (OBGD) contributes to the diverse scientific climate within the Biomedical Graduate Programs in the School of Medicine and School of Nursing. The office works to bring talented underrepresented graduate students to Duke and to enrich their experiences over the course of their doctoral studies. OBGD hosts a series of programs including professional development opportunities, academic enrichment groups, mentoring programs, and social activities. The OBGD is dedicated to maintaining a climate of inclusiveness and celebrating the richly unique scientific community at Duke University.

BioCoRE (Biosciences Collaborative for Research Engagement)

Website: https://biocore.duke.edu/graduate-engagement

Duke BioCoRE is an institution-wide program designed to unify and enrich the bioscience community across the School of Medicine, the Graduate School, Trinity College, and the Pratt School of Engineering. The program is funded by an NIH Initiative for Maximizing Student Development (IMSD) award and supported by Duke University.

BioCoRE boasts a wide variety of scientific programs, including community-building activities, paid research opportunities, conference travel, symposia, and seminars that will benefit all student and faculty BioCoRE members. BioCoRE is open to all members of the Duke biosciences community, and both undergraduate and graduate scholars will be selected on a competitive basis. Duke BioCoRE program is committed to increasing every aspect of diversity within Duke's bioscience community. Our society is increasingly enriched by the unique ideas and perspectives of individuals from different backgrounds and life experiences, and this diversity of experience results in novel ideas and theories that ultimately propel academia

forward and benefit society as a whole. All students who are committed to diversity in the sciences are encouraged to apply for a slot as a BioCoRE Scholar!

Benefits of BioCoRE include: Early Start - full stipend for August of first year, beginning your research project during Early Start, community building activities during Early Start, enhanced advising and specialized mentoring, funds for scientific conference travel, scientific and career development programs, social gatherings with BioCoRE community, synergy with PhD Graduate Programs.

Counseling & Psychological Services (CAPS)

https://studentaffairs.duke.edu/caps

Counseling and Psychological Services (CAPS) helps Duke students enhance strengths and develop abilities to successfully live, grow, and learn in their personal and academic lives. We offer many services to Duke undergraduate, graduate, and professional students, including brief individual counseling/psychotherapy, consultation, couples and group counseling, assistance with referrals, and more. CAPS staff also provide outreach education programs to student groups, particularly programs supportive of at-risk populations, on a wide range of issues impacting them in various aspects of campus life.

Duke Reach

DukeReach directs students, faculty, staff, parents, and others to the resources available to help a student in need. DukeReach is located in the Dean of Students Office and works with departments and groups across campus and in the community, including Housing, CAPS, Student Health, community health providers, the Academic Resource Center, and more.

Are you concerned about your physical or mental health? Has a fellow student's behavior caused you to worry about his or her potential future actions? Through this website we hope to provide you with the resources you need to assist a student or get the appropriate help so that someone else may do so. All of us at Duke care deeply about the success and well-being of our students.

Resources for Assistance

Below is an alphabetical listing of resources to assist you in solving the problem, concern, or conflict you are facing. If you are not sure where to begin and would like to speak to someone during regular business hours, contact the main DukeReach line (919-681-2455) or the Dean of Students Office (919-668-3853). For emergencies after business hours, contact the Dean on-Call pager (919-970-4169) or Duke Police (919-684-2444).

Academic Resource Center: The Academic Resource Center assists students with time management and provides peer tutoring as well as special services for students with ADD or ADHD. The Academic Resource Center is available to assist all students, and it is located on the second floor of the Academic Advising Center on East Campus. Phone: 919-684-5917

Career Center: The Career Center provides a wide range of services attending to all aspects of students' career development and life planning. The Career Center can help a student learn about their options and make decisions regarding their future. There are many resources a student can access including information about internships, Career Week, choosing a major, life after graduation, the job search, and career counseling. Phone: 919-660-1050

Center for Sexual and Gender Diversity: The Center for Sexual and Gender Diversity is dedicated to providing advocacy, education and resources for faculty, staff, students and alumni. If you are working with a student who is struggling with sexual identity or experiencing conflict in class as a result of tension related to homophobia or sexual orientation, the Center can help. Additionally, the Center provides programs and resources for the entire community. Phone: 919-684-6607

DuWell: The DuWell works with Duke students and administration to promote good decision making around health issues, alcohol and substance use. These include campus-wide discussions and programs in concert with faculty and staff with an emphasis on a cultural awareness of the impact that high-risk substance use/abuse has on a community. Additionally, the Center provides an abundance of resources to link students to programs and services. Phone: 919-681-8421

The Graduate and Professional Student Council (GPSC) is the umbrella student government organization for Dukeâs nine graduate and professional schools. GPSC represents and advocates on behalf of graduate and professional students; programs events of interest to the student community; and financially supports the programming of student groups.

International House: The mission of the International House is to provide educational services and advocacy to the international population at Duke as well as outreach to the Durham community. The I House offers extensive cross-cultural programming and information to enhance the global mission of the university. Phone: 919-684-3585

Jewish Life at Duke: Jewish Life at Duke strives to enrich the lives of Jewish students through social, educational, religious, cultural, social-action, and community-service activities. Jewish Life at Duke provides programs, Shabbat and holiday services, and resources for students. Phone: 919-684-6422

Mary Lou Williams Center for Black Culture: The Mary Lou Williams Center for Black Culture provides programs and resources for faculty, students, and staff. Programs and services are designed to deal creatively, critically, and supportively with individuals and entities in order to foster consciousness about the significance of Black experiences. Phone: 919-684-3814

Center for Multicultural Affairs: The Center for Multicultural Affairs (CMA) works to support students of color and cultural communities. The Multicultural Center provides programs and services and a variety of resources for the Duke community. Phone: 919-684-6756

Ombudsperson: Phone: 919-684-5917

- Provides a neutral, safe, and confidential environment to talk
- Listens to concerns and complaints and discusses appropriate options
- Helps to evaluate those options
- Assists students in resolving problems
- Mediates conflicts, convenes meetings, engages in "shuttle diplomacy"
- Refers students to appropriate campus resources
- Provides information about university resources

Office of Institutional Equity: Under the auspices of the President, the Office for Institutional Equity (OIE) provides institutional leadership in sustaining a respectful and inclusive environment. OIE can provide information for faculty, students, and staff regarding Diversity and

Equity, EEO/Affirmative Action, Harassment Prevention, Policies, and Resources. Phone: 919-684-8222

Religious Life: Religious Life is part of the Duke Chapel and provides resources and connections to over 25 campus ministries affiliated with Duke University. Additionally, Religious Life provides the Pathways program to help college students engage in their spiritual development. Phone: 919-684-2909

Housing, Dining & Residence Life: Housing, Dining & Residence Life (HDRL) provides on-campus housing for undergraduates and some graduate students. Undergraduate students can live on East, West, or Central Campus; please see the Programs and Services link for more information. HDRL has several other resources that may assist you. Phone: 919-684-4304

Student Disability Access Office: The Student Disability Access Office (SDAO) is charged with the responsibility of exploring possible coverage and reasonable accommodations for students for purposes of the Americans with Disabilities Act (ADA) and the Rehabilitation Act. The mission of the SDAO is to provide and coordinate accommodations, support services, and auxiliary aids for qualified students with disabilities. In order to begin the process a student must provide documentation. Faculty may find this page useful in working with students with Disabilities. Phone: 919-668-1267

Women's Center: Through education, outreach, and advocacy, the Duke University Women's Center fosters diverse learning and living environments that are safe and empowering for all women and men in the Duke community. The staff is committed to a campus culture that provides all students access to a full range of personal and professional choices, fosters agency and self-determination for all, and creates transformative experiences to understand and resist patriarchal oppression in our lives and the world. The Women's Center provides programs and services, resources, publications, and a book exchange for faculty, students, and staff. Phone: 919-684-3897. (After hours: 919-970-2108 (pager).)

Gender Violence Services: Gender Violence Services are offered at Duke through the Office of Gender Violence Prevention and Intervention in the Women's Center. If you are a student at Duke University (of any gender) and are a victim-survivor of gender violence, you can contact us 24/7: Monday-Friday, 9am-5pm: Call 919-684-3897, email WCHelp@duke.edu, or walk in at no appointment necessary. After hours, weekends, holidays: Page Women's Center staff at 919-970-2108 or email WCHelp@duke.edu. If this is an emergency situation and you feel you are in danger, call 911 or Duke Police at **919-684-2444**.

Duke Student Affairs

The mission of Duke Student Affairs is to inspire students to make meaning in their lives through community engagement, experiential learning, and reflection.

The Division of Student Affairs is critically engaged in all aspects of students' lives and collaborates with students, faculty, staff, alumni, parents, and many others in the delivery of key services and support to students and all whom the Division serves.

Student Affairs provides programs and services that support the optimal growth of Duke students, enhance their intellectual, social, cultural and physical development, and complement Duke's academic excellence by providing opportunities for students to experience education and

explore interests beyond the classroom. The Student Affairs strategic planning document goals and objectives latest updates and announcements posted to the strategic planning site.

Website: http://www.studentaffairs.duke.edu/
Website for Graduate & Professional Students: http://studentaffairs.duke.edu/graduate-professional-students
Contact: phone: (919) 684-3737 or studentaffairs@duke.edu
Location: 102 Flowers Building, Box 90937, Durham, NC 27708

Career Development Resources and Certificates

Professional Development Series

This event series includes individual workshops and talks as well as groupings of presentations on closely related topics that can help students evaluate and prepare for the range of professional doors that their graduate degrees will open for employment. This series is designed to broaden graduate students' career perspectives and develop competencies in communication, self-awareness, professional adaptability, and leadership. Events in the Professional Development Series are offered on a two-year planning cycle and change each semester. Over the course of each two-year cycle, the Series will include opportunities to learn about career paths in each of the five major career sectors available to master's and doctoral degree graduates: academia, business, entrepreneurship, government, and nonprofit. Questions or suggestions? Contact Dr. Melissa Bostrom, Assistant Dean for Graduate Student Professional Development. Additional information can also be found on the Graduate School Professional Development site: http://gradschool.duke.edu/professional-development

Curriculum Enhancement Programming

Certificate in College Teaching (CCT): This approximately one-year-long program prepares PhD students to teach and provides formal documentation upon completion of the program, which helps make makes the students more competitive when applying for faculty positions. *Specific information can also be found in the Appendix III of this handbook.*

Emerging Leader Institute: This program—open to students at The Graduate School and postdocs—helps participants develop their skills in communication, self-awareness, professional adaptability, interdisciplinary teamwork, and leadership.

Preparing Future Faculty (PFF): This yearlong program provides graduate students and postdocs with workshops and mentors to prepare them for the multiple roles they may have to play as faculty members at a variety of academic institutions.

Bass Instructional Fellowship Program: This program provides endowed fellowships for graduate students to gain high-quality teaching experience as instructors of record, instructional teaching assistants, and online apprentices.

To see a chronological list of the Professional Development Series workshops and events, visit the Graduate School's professional development events calendar. More opportunities are added throughout the semester!

The Graduate School Scientific Writing Resource: The Scientific Writing Resource is online course material that teaches how to write effectively. The material is not about correctness (grammar, punctuation, etc), but about *communicating what you intend to the reader*. It can be used either in a science class or by individuals. It is intended for science students at the graduate level.

More information can be found on their website: https://cgi.duke.edu/web/sciwriting/index.php

WISE (Women in Science and Engineering) holds Successful Grant Writing for Graduate Students workshops each year. Graduate and Profession Women's Network welcomes all advanced graduate students to attend a presentation by Dr. Ashutosh Chilkoti on grant writing: where to find them, how to write them, and how to get them accepted. Dr. Chilkoti is the Professor of Biomedical Engineering and the Director for Graduate Program and Center for

Biologically Inspired Materials and Material Systems. He has been successful in obtaining peer-reviewed funding and served on a number of national and international reviewing bodies for many years. There will be plenty of time for a Q&A following the presentation. Check the website Events Calendar for workshop dates: http://wise.pratt.duke.edu/professional-development

Duke University School of Medicine Gopen Writing Seminars: Held annually in Oct./Nov., this four-part seminar series focuses on writing from the reader's perspective. The series is based on the concept that in order to improve writing, it is first necessary to understand the process of reading. The ideas presented in this series of workshops have changed participants' writing habits permanently, often resulting in improved grant-writing and publication success. The 12-hour workshop is divided into 4 sessions, each one building on the one before. For maximum benefit, those who register should plan to attend all four sessions.

Registration for Writing from the Reader's Perspective typically opens 6-8 weeks prior to the first session. Exact program and registration dates are posted on the upcoming events page as soon as they are available. Registration is on a first-come, first-served basis.

Duke Continuing Studies & the Duke Thompson Writing Program, offers the 0056 Grant Writing 101 course: If you are a beginning grant writer, this course will provide you with the essential tools needed to write a successful grant proposal from start to finish. For those more experienced, this workshop will sharpen your skills and keep you up-to-date through discussions of current grant writing trends. Learn about the grantsmanship process - from foundation research and cultivation to the development and writing of a winning proposal. You will learn about the typical questions funders ask when considering a proposal and the criteria used. Class participants will have an opportunity to review and critique a proposal. Tips for ensuring grant compliance and improving your chances of future grant success will be discussed. This course is included in the Duke Thompson Writing Program for undergraduate students, but is also open to graduate students.

They also offer Writing Studio Handouts, including Scientific Writing for Scientists, which can be downloaded at the following site: http://twp.duke.edu/uploads/media_items/science-for-scientific-writing-handout.original.pdf

Student Affairs Career Center: The Career Center provides services, programs, events, online tools and resources for undergraduates, graduate students and alumni up to four years after graduation from Trinity College, Duke's Pratt School of Engineering and the Graduate School. Website: http://studentaffairs.duke.edu/career & **Career Counseling for Graduate Students**

Biochemistry Department Annual Academic & Social Events

Biochemistry Department Seminars: Seminars are scheduled on Fridays at 12:00 noon in room 147 Nanaline Duke Bldg. unless otherwise noted in the schedule. Coffee is served in the lobby at 11:45 am. The seminar schedule is updated each term and can be found at: https://www.biochem.duke.edu/biochemistry-seminars

Biochemistry Department Research Forums: Each semester, these Friday seminar presentations highlight recent research accomplishments and ongoing research activities of the faculty and their research groups. Scheduled forums can be found at: https://www.biochem.duke.edu/biochemistry-seminars

Nozaki Distinguished Lecture Series: The Nozaki Committee, made up of current Biochemistry graduate students, solicit nominations from the students, select, invite, and host a distinguished speaker to visit the department and present a seminar as part of the Biochemistry Distinguished Lecture Series. This Lecture is supported by the Dr. & Mrs. Yasuhiko Nozaki Lectures Fund of Triangle Community Foundation.

Annual Department Retreat: Each year, members of the department, including faculty, students, post-docs, and technicians attend a departmental retreat. In the past, these trips have been held at the beach and mountains of North Carolina. First-year students and first-year program students are especially encouraged to attend. This weekend is full of poster sessions, lab presentations, karaoke, and fun. Details regarding the annual Retreat will be sent to all department members in late-August. This year's retreat will be held at Wrightsville Beach, NC.

Recruitment Weekends/Visits: During spring semester the department hosts potential graduate students who have applied for admission to the Duke Biochemistry Ph.D. program. Recruitment weekends are an educational and exciting time when current and prospective grad student have the opportunity to meet, talk about the department's research opportunities, and we can show off Duke and Durham's unique culture and community. Our recruitment weekends our usually held late-January through mid-February. If you would like to volunteer to help with recruitment events, please contact the BGSO.

Duke Basketball Campout: All graduate students have the opportunity to participate in the annual Duke Basketball Season Ticket Campout. For one weekend early in the Fall semester all interested graduate and professional students at Duke gather on campus with the hopes of winning an opportunity to purchase season basketball tickets. The rules are simple: make it through the weekend without missing two attendance checks and your name is entered into a lottery. Lottery winners are drawn and these individuals are eligible to buy one of the 725 graduate and professional season tickets. But Campout isn't just about basketball tickets. With around 2,500 students representing nearly every program and department at the University in attendance, this is also the premier graduate and professional student social event of the year. Campout is an excellent opportunity to bond with your students in your own program and make friends in other programs. Campout will be held in the Blue Zone parking lots on Wannamaker Drive near Duke University Road. There is space at this location for students to set up tents or park rental trucks and RVs for the weekend. To register, click on the "Register for Campout" link which can be found at the following website: http://www.dukegradcampout.org/. Keep up with the latest Game Day promotions from our Facebook page: Duke Graduate Student Game Day

Happy Hour: Socialize with your fellow department members! The first Friday of each month at 4:00 pm, the department sponsors Happy Hour on the Nanaline Duke Patio (or on the 1st floor lobby of Nanaline Duke, weather permitting). The department provides an assortment of beverages (beer, wine and sodas) and snacks. Everyone is welcome!

Holiday Party: The Biochemistry department hosts an annual pot-luck party for department members and their families in early-December, just before everyone travels home for the winter holidays. If you enjoy cooking, it's a great chance to share your favorite dish with your Departmental family, or just pick up something convenient on the way there. Join us for food, dancing, fun and door prizes!

Biochemistry Department Night at the Durham Bulls: This family-friendly event in the late spring/early summer includes seats to watch the baseball game in a reserved party deck, dinner, beverages and fireworks after the game. Park gates open at 5:30 pm, games starts at 6:30 pm, and dinner is served from 6:00-8:00 pm. Fireworks start at the conclusion of the game. To reserve tickets, contact Margot Wuebbens in room 234 Nanaline Duke or at wuebb001@duke.edu.

Biochemistry Department Core Facilities:

Faculty and students have access to state-of-art instrumentation, including X-ray crystallography, cryo-electron microscopy, protein and lipid mass spectroscopy, multidimensional nuclear magnetic resonance, computer graphics, circular dichroism spectroscopy, electron microscopy, isothermal calorimetry, and support facilities like peptide and oligonucleotide synthesizers, sequencing, RNA center, optical microscopy and imaging systems.

Cryo-Electron Microscopy Center:

Duke's **Shared Materials Instrumentation Facility** is home to a new cryo-transmission electron microscope: the **FEI Krios**. The microscope joins the **FEI Talos Arctica** (located at the the **National Institute of Environmental Health Sciences, NIEHS)** as part of the **Molecular Microscopy Consortium (MMC)** in the Research Triangle. This consortium is a partnership between NIEHS, Duke University, and the University of North Carolina at Chapel Hill. The mission of the MMC is to enable the use of single particle cryo-electron microscopy (cryo-EM) and other tools in molecular microscopy to researchers across North Carolina. Cryo-EM is increasingly being used to determine the structure of macromolecules at atomic resolution. There is also emerging interest in applying the technology to the ultrastructure analysis of cellular compartments. The MMC was established to meet the growing demand for instrumentation and expertise in this area.

Director **Mario Borgnia** leads the MMC and is supported by a Core Team of expert personnel from each participating institution. The MMC functions as a space where projects are carried out as scientific collaborations with members of the Core Team.

3D Macromolecular Structure Analysis & Kinemage

3D Macromolecule Analysis & Kinemage at the Richardson Laboratory. More information can be found at http://kinemage.biochem.duke.edu/

Duke Magnetic Resonance Spectroscopy Center

https://sites.duke.edu/nmrcenter/

The Duke Magnetic Resonance Spectroscopy Center (DMRSC), located at B139 LSRC, provides access to highfield NMR instrumentation, training in the use of NMR methods, and expert consultation on advanced NMR applications. The Center serves as a research resource and shared instrument facility for research programs at Duke and in the Southeastern region. The Center was established with funding from the National Science Foundation, the Biomedical Research Support Shared Instrumentation Grants Program of the National Institutes of Health, the North Carolina Biotechnology Center of the State of North Carolina, and Duke University and has subsequently received additional support for new instrumentation including an 800 MHz spectrometer from these agencies and the Howard Hughes Medical Institute.

X-Ray Crystallography Center

https://shared-resources.dhvi.duke.edu/dhvi-core-facilities/dhvi-crystallography

The DHVI Macromolecular X-ray Crystallography Shared Resource offers services in determining and publishing macromolecular crystal structures. We offer everything from crystallization trials through data collection, structure phasing, refinement and analysis on a fee-for-service basis. Facility staff can assist with any and all steps in the process as needed.

ANNUAL TIMELINES FOR BIOCHEMISTRY STUDENTS

2019-20 IMPORTANT DATES FOR 1ST YEAR GRADUATE STUDENTS (G1)

August 19 – 22	New Student Orientation & Course Registration
August 23 – 24	RCR Ethics Retreat – Greensboro, NC
August 26	Monday – Fall Semester classes begin. 1st Lab Rotation forms are due to the BGSO by August 31st
Sept. 2 – Oct. 18 or Nov. 1	1st Rotation. 2nd Lab Rotation forms are due to the BGSO by November 1st –
October 30th	Spring 2020 Registration begins; 1st year Advisory committee meeting early November
Oct. 21 or Nov. 4 – Dec. 15 or Jan. 16	2nd Rotation. 3rd Lab Rotation forms are due to the BGSO by December 13th –
October 31st 30th	Spring 2019 2020 Registration begins
Jan. 8 or Jan. 15 –Mar. 6	3rd Rotation
March 7 – 15	No Classes - Spring Break
March 16th	Advisor/Lab Choice *or* 4th Rotation Forms are due to the BGSO
April 1st	Lab choices may begin to be approved by the DGS and Chair. Financial Support Forms are given to students to be signed by Department officials.

2019-20 IMPORTANT DATES FOR 2nd YEAR GRADUATE STUDENTS (G2)

Before November 1st	Student submits a Committee Nomination Form to the Biochemistry Graduate Studies Office (BGSO) with recommend faculty for Supervisory Committee.
December	DGS approves the Committee and assigns one of the Biochemistry faculty from each student's Prelim Committee to be the Prelim Chair
Winter/Early Spring	Student begins to formulate research objectives with their research advisor and other faculty such as their newly appointed advisory committee.
January-February	Student begins contacting committee members to schedule the Initial Committee Meeting for March- May. Student reserves a room for a 1-hour meeting. Once scheduled, the student informs the BGSO of the scheduled date.
1-2 months prior to Initial Meeting	Student is encouraged to prepare an Individual Development Plan (IDP) online. See Third Year for IDP Description and Online Resources.
At least 1 week prior to Initial Meeting:	Student submits 2-3 page written document which includes an Introduction to the Thesis Area and Preliminary Aims to all committee members.
Before May 8th	Student holds Initial Committee Meeting (Pre-prelim), 1 hour (max).

2019-20 IMPORTANT DATES FOR 3rd YEAR GRADUATE STUDENTS (G3)

No later than September 6th	Student schedules oral preliminary exam and informs BGSO of the date.
At least 6 weeks prior to exam:	Student submits written prelim exam proposal to BGSO for format check.
At least 4 weeks prior to exam:	Student submits the format-approved Written Proposal to all Committee Members.

1 week after submission:	Student requests feedback from the Prelim Committee Chair to ask whether the Written Proposal is Accepted or Needs Revision.
At least 1 week prior to Oral Exam:	Student submits revised Written Proposal to all Committee Members (if necessary). Student sends a reminder to all members of their Committee informing them of the Date/Time/Place of the Exam.
No later than December 16th	Supervisory Committee administers the Preliminary Exam.
May/June	Complete required 4 credit-hour RCR course **GS 713** and IDP.

2019-20 IMPORTANT DATES FOR 4th YEAR GRADUATE STUDENTS (G4)

Before Feb 28th	Student updates their IDP, schedules and completes the Annual Progress Meeting with their Ph.D. Supervisory Committee. BGSO should be notified of meeting date.
At least 1 week prior to meeting:	Student submits 2-3 page written summary to all committee members. Student picks up file from DGSO before Annual Progress Meeting

2019-20 IMPORTANT DATES FOR 5th+ YEAR GRADUATE STUDENTS (G5+)

Before May 8th	Student updates their IDP, schedules and completes the Annual Progress Meeting with their Ph.D. Supervisory Committee. BGSO should be notified of meeting date.
At least 1 week prior to meeting:	Student submits 2-3 page written summary to all committee members. Student picks up file from DGSO before Annual Progress Meeting

2019-20 IMPORTANT DATES FOR THE DISSERTATION & DEFENSE

Graduation Date	Submission of the **Intention to receive degree**[1]	Submission of the **Initial Electronic Dissertation**[2]	Final Day to hold the **Oral Defense**[3]	Final Submission of the **Dissertation** and **Exam Card**[3]
December 2019	Oct 25	Nov 4	Nov 18	Dec 2 3PM/5PM
May 2020	Jan 24	March 13	March 30	April 13 3PM/5PM
September 2020	June 15	July 6	July 20	Aug 3 3PM/5PM

[1]***Submission of the Intention to receive degree***

Student must file an intention to receive degree on-line: Log-in to Duke Hub and click on the "Forms and Requests" tab. Then click the "Apply for Graduate" button.

[2]**Initial Electronic Submission of the Dissertation Defense**

At least two weeks before your defense, but prior to the ***initial submission deadlines*** for each semester, submit your dissertation to UMI/ProQuest: http://dissertations2.umi.com/cgi/login.cgi

[3]**Dissertation Defense Date/ Submission of the Exam Card/Final Submission of the Dissertation**

Final submission of your signed Exam Card & dissertation must occur within 30 days of your defense; however, if you defend within 30 days of the semester deadline of your graduation date, you must adhere to semester deadline, and do not have 30 days to complete your final submission. Final version of dissertation is due to UMI/ProQuest by 3:00 pm and Final Exam card is due by 5:00 pm on the Due Date.

Deadlines subject to change: *https://gradschool.duke.edu/academics/preparing-graduate/graduation-deadlines*

You can download a pdf of the deadlines at the following site:
https://gradschool.duke.edu/sites/default/files/documents/graduation_deadlines.pdf

THE FIRST YEAR (G1)

There are three main elements involved in the first year of graduate study in biochemistry:

- ***Lab rotations***
- ***Choosing a research advisor***
- ***Course work***

2019/2020 IMPORTANT DATES FOR 1ST YEAR GRADUATE STUDENTS (G1)	
August 19 – 22	New Student Orientation & Course Registration
August 23 – 24	RCR Ethics Retreat – Greensboro, NC
August 26	Monday – Fall Semester classes begin.
Sept. 2 – Oct. 18 or Nov. 1	1st Rotation – Lab Rotation forms are due to the BGSO by August 31st 1st Rotation will begin Sept. 2 and can end Oct. 18 or Nov. 1
October 5 - 8	No Classes – Fall Break
Oct. 21 or Nov. 4 – Dec. 15 or Jan. 15	2nd Rotation – Lab Rotation forms are due to the BGSO by November 1st 2nd Rotation can begin on Oct. 21 or Nov. 4 and end Dec. 15 or Jan. 15
October 30th	Spring 2019 Registration begins
Jan. 8 or Jan. 15 – Mar. 6	3rd Rotation – forms are due to the BGSO by December 13th 3rd Rotation can begin Jan. 8 or Jan. 15 and will end on March 6
March 7 – 15	No Classes - Spring Break
March 16th	Advisor/Lab Choice *or* 4th Rotation Forms are due to the BGSO
April 1st	Lab choices can begin to be approved by the DGS and Chair. Financial Support Forms are given to students to be signed by Department officials.

Lab Rotations

Incoming graduate students generally complete at least, but not limited to, three laboratory rotations during the fall and beginning of the spring semesters. During orientation week, professors who are currently accepting graduate students into their labs give presentations on their research. These presentations help incoming students choose the labs that they would like to rotate through during the year. We encourage students to choose lab rotations in diverse research areas to sample the variety of scientific research and methodology in the Biological Sciences at Duke. Each rotation generally lasts 7-8 weeks (see lab rotation schedule in "Important Dates" above). At the end of each lab rotation, each student will present the work they have accomplished to their graduate student peers as part of the BCH745S/746S seminar course.

Choosing a Research Advisor

After completing at least three lab rotations, students will choose their thesis lab and graduate research advisor. Students should consult with professors they intend to or have rotated with to determine whether they will have a position available to support the student. You may wish to contact the Chair and/or the Director of Graduate Studies before making this decision. Your thesis advisor choice form should be submitted to the BGSO in mid March for students completing three rotations. ***Approval of thesis research advisors will be made by the Chair and DGS no earlier than April 1st***, regardless of lab choice submission date. If you are doing

more than three rotations, submit your thesis advisor choice form to the BGSO upon completion of the rotations.

Statement of Financial Support Form: If a research advisor is chosen, whose primary faculty appointment is outside Biochemistry, the a Statement of Financial Support Form is required by the School of Medicine and will be emailed by the BGSO. Advisors commit and attest to the financial obligations outlined in the form by completing and signing the form. Each form must be signed by the following: 1) Advisor, 2) DGS of the PhD Granting Department, and 3) the Advisor's Primary Department Chair. Names of the required signees will be listed on the forms.

Coursework & Registration

Typically, graduate students in Biochemistry take several classes and two seminar courses each semester of their first year (See Appendix I). These core courses are designed to develop the student's ability to critically read and analyze literature, present literature and analysis orally, demonstrate firm grasp of conceptual foundations of modern biochemistry, and complete written reports, oral presentations, and/or exams. Students customize their plan of study, with help from faculty advisors and their research mentors, choosing from a broad list of available courses in the biomedical science graduate curriculum. Students should complete a minimum of 24 hours of graded coursework (including a total of 8 units of Research Independent Study), as well as at least 6 hours of ungraded coursework, in the first 2 years of study. Note that students coming into the program from the MSTP or with an MA/MS degree may be exempt from the minimum graded coursework requirement.

Incoming students will register for fall courses during Orientation Week. The Biochemistry Advisory Committee will meet with each first year student to discuss course selection for the Fall semester. A second meeting to discuss Spring semester courses will be scheduled before Spring registration begins in early November. Registration instructions will be sent by the BGSO.

Detailed instructions on how to register for courses through *https://dukehub.duke.edu/* can be found in the following pdf*:*
https://sissoffice.duke.edu/docs/ACES_DOCS.pdfhtt

Additional DukeHub Portal Navigation & "How to" Documentation can be found at the following website:
http://sissoffice.duke.edu/DukeHub/howto.html

THE SECOND YEAR (G2)

These principal events that occur during the second year of graduate study in biochemistry:

- ***Supervisory committee selection***
- ***Initial committee meeting (also called the "Pre-Prelim")***
- ***Teaching Assistant requirement (Fall, Spring or Summer Semester)***

2019/2020 IMPORTANT DATES FOR 2ND YEAR BIOCHEMISTRY STUDENTS (G2)	
Before November 1st	Student submits a Committee Nomination Form to the Biochemistry Graduate Studies Office (BGSO) with recommend faculty for Supervisory Committee.
December	DGS approves the Committee and assigns one of the Biochemistry faculty from each student's Prelim Committee to be the Prelim Chair
Winter/Early Spring	Student begins to formulate research objectives with their research advisor and other faculty such as their newly appointed advisory committee.
January-February	Student begins contacting committee members to schedule the Initial Committee Meeting for March- May. Student reserves a room for a 1-hour meeting. Once scheduled, the student informs the BGSO of the scheduled date.
1-2 months prior to Initial Meeting	Student is encouraged to prepare an Individual Development Plan (IDP) online and communicates with DGS to discuss a choice of IDP faculty Mentor (may be any faculty). See Third Year for IDP Description and Online Resources.
At least 1 week prior to Initial Meeting:	Student submits 2-3 page written document which includes an Introduction to the Thesis Area and Preliminary Aims to all committee members.
Before May 8th	Student holds Initial Committee Meeting (Pre-prelim), 1 hour (max).

Supervisory Committee Selection

Each student, after consultation with her/his mentor and each proposed committee member, provides the Biochemistry Graduate Studies Office a Committee Nomination Form with a list of faculty members they recommend to be a member of their Supervisory Committee **no later than November 1st** of the Fall semester. The Committee recommendations should consist of at least five members (including their advisor) and must include at least three graduate faculty members with expertise in the major field of study and at least one from a minor area, being from outside the degree program or from a clearly differentiated subfield within the Biochemistry Department (the Minor Area representative)*. At least two members of the committee, including the Advisor, must be faculty with a primary or secondary appointment in the Biochemistry Department. Note for Program students: Remember to pay attention to any program-specific committee requirements.

***Outside Committee Member(s) Justification**: The choice of the Minor Area representative (the outside member) requires justification. On the Supervisory Committee Nomination Form, Include a 1-2 sentence justification describing how this faculty's expertise is appropriate but lies *outside* of the main research topic.

IMPORTANT: All faculty members nominated for a prelim/dissertation committee **must** also be a member of the Graduate Faculty. Students are responsible for making sure all faculty nominated for the Committee are members of the Graduate Faculty. Students can verify membership using the following website: http://gradschool.duke.edu/academics/graduate-faculty. If a professor is requested to be on the committee who is not a member of the Graduate

Faculty (as are most faculty members from another university), a current CV (that includes the D.O.B.) for that faculty member must be submitted to the BGSO along with the committee nomination form. The BGSO will then submit a "Nomination Form for Term Membership on the Graduate Faculty" to the Graduate School for approval.

The Chair of the Pre-Prelim meeting and the Preliminary Examination Committee is not the student's research advisor (or co-advisor). The Chair will be assigned from the remaining members of the student's Committee by the DGS, in consultation with the department Advisory Committee as needed.

The recommendations are reviewed by the DGS, in consultation with the department Advisory Committee as needed, for departmental approval. If approved, the BGSO will submit a Committee Nomination Form to the Graduate School for the Associate Dean's approval ***(no later than 30 days before the Preliminary Examination date)***. If one or more members nominated by the student are not approved, the student will be informed by the DGS and asked to submit additional nominations.

Changes to the Supervisory Committee

If a student requires a change to their Prelim/Dissertation supervisory committee, the BGSO will need to be notified by e-mail at the earliest convenience. This e-mail should include an updated Committee Nomination Form which can be found on the Biochemistry website. Before any request is sent, the student should consult with her/his mentor and the faculty member(s) they are planning to remove/add.

The Initial Committee Meeting ("Pre-Prelim")

The initial meeting takes place before ***May 8th*** of the second year. The overall purpose is to acquaint the faculty members with the student and the student's proposed research project in both a written and oral format. The Initial Committee Meeting will be chaired by an assigned member of the student's committee who will also serve as the Chair for the Prelim exam. *The student is responsible for scheduling the meeting (usually 1 hour), reserving the meeting space, and informing the Committee and the BGSO of the meeting date, time and place. To reserve space for the meeting, please see page 9 for available rooms & contacts).*

Note: Although preferred, the entire Committee does not all have to be present at this meeting. Students should schedule 1-on-1 meetings with any absent faculty to discuss their plans.

Written Summary (~2 pages): To facilitate the discussion, students prepare and submit a brief (~2 page) summary of their research project to all Committee members and the BGSO at least 1 week prior to the meeting date. The summary includes an Introduction to the research area, the potential Preliminary Aims for the project, the Significance of the research, Preliminary Data supporting the Aims (if available). Students should use this document as a means to begin to develop defending the proposed research in the Preliminary Exam the following Fall (3rd yr) and toward developing it into a PhD research project.

Oral Summary (~20 minutes) and Committee Discussion (~20 min): The student prepares a brief Oral Presentation to present the Background, Significance, Preliminary Data, and potential Preliminary Aims for their proposed project. This is not an exam. This meeting is intended to elicit a useful comments and feedback for the student regarding their proposed research topic, scope, and goals to help them develop a successful Preliminary Exam proposal for their 3rd year. The student should expect and can solicit oral and written suggestions from their

committee regarding their proposed line of research and for suggestions of particular topics they should master for their Preliminary Examination.

Initial Meeting Procedures: Prior to the meeting, the Student should obtain from the BGSO their academic file including a copy of the Record of Initial Meeting Form, Initial Meeting Feedback/Comments Forms, and the student's Graduate Course Transcript. Each Committee Member should sign the Record of Initial Meeting Form and complete an Initial Meeting Feedback/Comments Form. At the conclusion of the meeting, the student and Thesis Advisor should discuss the Committee's feedback and comments. The student may make and retain copies of the feedback forms if they wish, but the **original forms must be turned in to the BGSO**. The student should also submit the signed Record of Initial Meeting Form and return the student's academic information to the BGSO.

Development of Initial Individual Development Plan (IDP)

The student should begin to develop an Individual Development Plan (IDP) (see also Appendix IV) in their second year in which they generate initial career goals and objectives. A website recommended to help develop an IDP is the AAAS online tool (http://myidp.sciencecareers.org/) which helps students assess areas of interest (which are likely to change over time during the graduate school years). The student must have an IDP prior to the 3rd year SoM RCR-Career Development Session. *Detailed information about the IDP is in this handbook (Appendix IV).* Students should plan to discuss their IDP with a Career Planning Mentor (could be any faculty, although it is highly recommended that the Mentor is someone familiar with the student, such as their Research Advisor or member of their Thesis Committee). Discussions can be individual, or as part of the student's annual committee meeting. The student informs the DGS their choice of IDP faculty Mentor.

Teaching

All Biochemistry graduate students are required by the department to serve as a teaching assistant for at least one semester, usually during the second year of study. The department currently provides TA's for the following courses: BIOCHEM 301 and 302 (Introduction to Biochemistry I and II), BIOCHEM 658/659 (Structural Biochemistry I & II), BIOCHEM 681 (Physical Biochemistry), & BIOCHEM 695 (Understanding NMR Spectroscopy). Responsibilities generally include leading discussion sections and/or review sessions and grading assignments and exams. TA positions are assigned by the DGS before each semester and are communicated to the course instructors & graduate students by email.

THE THIRD YEAR (G3)/PRELIMINARY EXAM

During the third year of graduate study in Biochemistry, students complete the Preliminary Examination (the "Prelim"). Successful completion of a Preliminary Examination is a requirement of the Graduate School for "Advancement to Candidacy", the process by which a student is officially deemed a Candidate for a Ph.D. In the Department of Biochemistry, the Prelim consists of two parts: a Written Proposal describing the student's thesis research and an Oral Exam. The Preliminary Exam is administered by the student's Supervisory Committee. In the spring term, 3rd year students are also required to have an Individual Development Plan (IDP) in preparation for the 3rd year SoM RCR-Career Development Session.

2019/2020 IMPORTANT DATES FOR 3RD YEAR BIOCHEMISTRY STUDENTS (G3)	
No later than September 6th	Student schedules oral preliminary exam and informs BGSO of the date.
At least 6 weeks prior to exam:	Student submits written prelim exam proposal to BGSO for format check.
At least 4 weeks prior to exam:	Student submits the format-approved Written Proposal to all Committee Members.
1 week after submission:	Student requests feedback from the Prelim Committee Chair to ask whether the Written Proposal is Accepted or Needs Revision.
At least 1 week prior to Oral Exam:	Student submits revised Written Proposal to all Committee Members (if necessary). Student sends a reminder to all members of their Committee informing them of the Date/Time/Place of the Exam.
No later than December 16th	Supervisory Committee administers the Preliminary Exam.
No later than May 8th	Graduate School requires all G3 students complete qualifying exams by the end of the Spring semester unless approved by the Dean. Prelim Retakes must be completed by this date.
May/June	**GS 713:** A 4 credit-hour RCR course will be required of all third year graduate students (G3) in the Basic Medical Sciences as a sequel to the first year RCR course. Completion of the Individual Development Plan (IDP) is a prerequisite.

Scheduling the Oral Prelim Examination

Students often find it challenging to find a date for the Oral Exam that is acceptable to each member of the committee, therefore, the student should have the Oral Exam date set before September 6th*. This lead-time also gives the student a deadline for preparing the proposal. All Committee members must be present to administer an Oral Exam. If an emergency arises such that a Committee member is unable to attend, the Exam may proceed pending the Expedited Approval of the revised Committee composition by the Graduate School Associate Dean. Note that the Examination Committee **must** consist of the Committee Chair and Thesis Advisor, and include two major area representatives and one minor area representative. ***The student is responsible for scheduling the exam, reserving the meeting space, and informing the committee and the Biochemistry Graduate Studies Office (BGSO) of the exam date. The Prelim Exam should take place no later than December 16th of the 3rd year of study.***

Please note: Extensions of the preliminary exam deadline beyond the end of the 3rd year must be approved by both the DGS and Associate Dean for Academic Affairs (Dr. John Klingensmith), for an examination on a specific date in the fall semester of the fourth year. Students who have not completed their preliminary examination by the end of their 4th year will be withdrawn.

***IMPORTANT**:* Students must be registered during the term in which they take the Preliminary Exam. During the Fall & Spring terms, students are allowed to schedule a Preliminary Exam on a date when classes are not in session (e.g. Fall Break, Spring Break, etc.). In the Summer term a Preliminary Exam may be scheduled only between the opening and closing dates of the summer session. To view the official Duke academic calendars, visit the following website: https://registrar.duke.edu/calendars-key-dates/future-academic-calendar

NOTE: Students are encouraged to arrange "mock" oral exams to prepare for this examination. Such practice may involve members of the student's lab and other graduate students.

The Graduate School teleconference policy for Preliminary Exams:

1. The majority of the committee must be present at the Preliminary Exam.
2. The Thesis advisor/chair CANNOT teleconference into a Preliminary Exam.

If a committee member must teleconference into the exam, it needs to be approved by the Graduate School's Associate Dean (john.klingensmith@duke.edu), prior to the meeting. This request will need to come directly from the DGS, Dr. Meta Kuehn (kuehn@duke.edu). Please send an email to the DGS and ask that they send an approval request to the Graduate School for a student to have a committee member participate remotely in a Preliminary Exam.

Important Information for Remote Participants: If a student receives prior authorization for a committee member to participate remotely in a Preliminary Exam, the Graduate School does not require their original signature on the Exam Form. In lieu of an original signature, the Graduate School will accept an emailed PDF letter on institutional letterhead. In the event of a vote of failure, the member should indicate whether an opportunity to retake the exam is recommended. The remote participant should email a scanned copy to the DGSA as a PDF. The DGSA will then submit it to the Graduate School. Templates for the text to use can be provided to remote participants (also see template text below).

Template text for remote participants: On their appropriate university letterhead, the remote Committee participant should use the following statement(s), filling in the correct information by replacing the *italicized* words below:

Date:

This letter is to verify that I participated in *student's name preliminary/master's thesis/dissertation* examination, in its entirety, via *communication medium, eg Skype*. I vote that the student *passed/failed* the exam.

(In the event of failure, indicate whether you recommend the student be allowed to retake the examination.)

Sincerely,

Your signature
Your name
Your title
Your email address

Written Format of the Prelim Exam Proposal Document

The goals of the written portion of the prelim exam are as follows:

1) To demonstrate proficiency in the student's field of interest with respect to knowledge of the pertinent literature and the applicable techniques and the ability to pose incisive questions or hypotheses and design experiments to address them.

2) To familiarize the student with the process of preparing a formal, peer-reviewed research grant proposal.

The following guidelines and requirements *(detailed on the next several pages)* are provided to help students write a clear, well-supported proposal that highlights their ability to identify and explain important problems and design approaches to solve them.

General Prelim Exam Information:

- Use 11-point *Arial, Georgia, Helvetica or Palatino Linotype font, single space with at least 0.50-inch margins on ALL sides*. Figures, charts, tables, figure legends, and footnotes may be smaller in size but must be readily legible.

- Follow all page limits (including figures) for each of the subsections listed below.

- Consecutively number pages throughout the proposal, beginning with page 2.

- The wording of the proposal should originate from the student and does not come directly from previously written proposals or manuscripts.

- Role of the student's mentor: The thesis advisor is encouraged to participate in the preparation and editing of the Written Proposal. Students are urged to ask the Advisor to read the Proposal prior to distribution to the committee and make suggestions to improve style, language and clarity of the document. The Advisor may also provide assistance to assure that the Proposal conforms to the guidelines. Such participation will increase the probability that the proposal will be acceptable to the committee and will minimize the need for revisions after submission. However, it is anticipated that the committee may request specific revisions. If revisions are required, the Revised Proposal submitted to the committee at least 1 week prior to the Oral Prelim Exam. One revision is allowed prior to the oral defense.

- Students must submit the written proposal to the BGSO for a **format check at least 6 weeks prior to Prelim Exam date** (2 weeks prior to the distribution to the Committee): Non-adherence to these formatting guidelines will require revision *before* the document is approved for submission to the Prelim Committee.

Written Prelim Exam Content Requirements

Section 1 (Page 1): Title, Summary, Narrative

A) Title (200 characters, max)

- The descriptive title is limited to 200 characters, including spaces and punctuation.

B) Project Summary/Abstract (30 lines, max)

- This is a **succinct description** of the proposed work and should be able to stand on its own (separate from the application). This section should be informative to other persons working in the same or related fields and understandable to a scientifically literate reader. Avoid the use of the first person.

- State the broad, **long-term objectives** and **specific aims**. Describe the general **research design** and **methods** for achieving the stated goals. Be sure that the project summary reflects the key focus of the proposed project.

C) Project Narrative (~3 sentences)

- Describe how, in the short or long term, the research **would contribute to fundamental knowledge** about the nature and behavior of living systems **and/or** the **application of that knowledge** to enhance health, lengthen life, and reduce illness and disability.

Section 2 (Page 2): Specific Aims

- Introduce the **background** and **importance** of the research area. State concisely the **goals** of the proposed research and summarize the expected **outcome(s),** including the **impact** that the results of the proposed research will have on the research field(s) involved.

- List succinctly the **basis** and **specific objectives** of the research proposed (e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm, address a critical barrier to progress in the field, or develop new technology).

Section 3 (Page 3): List of Abbreviations

- List all abbreviations used in the proposal

Section 4 (Pages 4 – 17 max): Research Strategy

A) Background and Significance (4 pages, max):

- Describe the background and foundational studies for the proposed research in this field. Include preliminary results, if any, that are pertinent to presenting the background for the proposed project (data collected by others in the lab may be included with appropriate acknowledgement).

- Explain the importance of the problem, and/or critical barriers to progress that the proposed project addresses. Describe how the proposed project will improve scientific understanding, clinical knowledge, and/or technical capability in one or more broad fields.

- Describe how the described research proposal is innovative: Explain how concepts, methods, or technologies, that drive this field will be changed if the proposed aims are achieved.

B) Approach (10 pages, max):

This section should include:

- An **overarching hypothesis or goal**

- A **hypothesis or goal for each Specific Aim**

- **Objectives/Subaims within each Specific Aim** that will be used to examine the hypothesis/hypotheses or accomplish specific scientific goals

- A description of the **Methods, Approaches, and/or Techniques** to be used in each aim. Include how the data will be collected, analyzed, and interpreted. Include **preliminary studies**, if any, that are pertinent to the feasibility and/or progress towards the objectives/aims (data collected by others in the lab may be included with appropriate acknowledgement). If the project is in the early stages of development, describe the strategy to **establish feasibility**, and address the **management of any high-risk aspects** of the proposed work. Briefly outline plans for the **statistical analyses** of the data (including power calculations prior to experimental design), whenever appropriate.

- A discussion for each Aim of **how the data/results will be interpreted, limitations of the approaches/methods**, **possible problems, and alternative approaches** that would be tried if the initial approaches do not work.

Section 5 (no page limit): References

- List **all** authors unless the number of authors exceeds 10, in which case "*et al*" may be used. Include **titles** in citations.

- While there is not a page limitation, it is important to be selective, and include the most **appropriate** and **current** literature references pertinent to the proposed research.

Written Prelim Proposal Submission & Approval Process

1. **Written Proposal Format Check:** *At least **6 weeks** prior to the exam*, students submit the written proposal to the Biochemistry Graduate Studies Office for format approval. Proposals should be sent in electronic form/PDF file to the BGSO (norfleet@duke.edu). Once the proposal format has been approved, the student will receive an email from the BGSO. The email will include a copy of the Prelim Exam Cover Sheet for the Written Proposal. The Cover Sheet should be included with the Written Proposal when it is distributed electronically to each member of the supervisory committee.

2. **Written Proposal Submission to Committee:** *Upon approval of the written format from the BGSO and **at least 4 weeks before their scheduled exam***, students should distribute their Written Proposal and Prelim Exam Cover Sheet in electronic form to all members of the Prelim Committee. The student should ask faculty if they prefer a printed version of the proposal and distribute these as needed.

   Written Proposal Approval or Requests for Revision: Within 1 week after submission of the Written Proposal to the Committee, each Committee member either votes to Approve the document or Request Revisions. Approvals/Requests for Revisions will be assembled by the Prelim Committee Chair (see Cover Sheet), who will then contact the student with any requested revisions.

   In the case that the proposal Requires Revisions, the student should confer with the Committee Chair regarding the specific revision requests of the Committee. If revisions are required, the student must submit a Revised Proposal to all Committee Members **at least 1 week prior to the Oral Exam**. If the revisions needed are too extensive, the student may take more time to prepare a revised Proposal, and may need to reschedule their Oral Exam. In this case, the Oral Exam *must still be completed by December 16th*.

Oral Prelim Exam

After the committee has approved the Written Proposal portion of the Prelim Exam, or the student has submitted a Revised Proposal to the Committee, the student will meet with the committee for an Oral Examination. The BGSO will give the required documents to the Student prior to the exam (including the official Preliminary Examination Forms and the student's academic information).

Presentation and Examination Questions: During the first 30 minutes of the exam, the student presents an uninterrupted seminar primarily on the research project and results already obtained. The student's thesis advisor(s) will then be asked to leave, as they are not present during the second part of the exam. The student is then asked questions by the Prelim Committee. The range of questions in this Oral Exam is in the general area of biochemistry; they are related to, but are not restricted to, the student's proposal.

Recommendation by the Prelim Committee: At the end of the exam, the student will leave the room and the Committee discusses the results of the Exam. The mentor may be asked to join the committee for consultation. At this time each Committee member should sign the official Report of the Doctoral Preliminary Examination Form, verifying the recommendation of the committee (indicated in the Pass or Fail boxes) and complete a Preliminary Exam Evaluation Form. The student is informed of the Committee's decision and advice at the conclusion of the examination.

Evaluation Forms: The evaluation forms should be discussed by the student and research advisor (the student may make and retain copies if they wish), but the **original committee evaluation forms must be turned in to the BGSO**. The DGSA will not submit the official Report of the Doctoral Preliminary Examination form to the to the DGS for his/her signature and transmission to the Graduate School until all original evaluations and the student's academic file are returned to the BGSO.

Re-taking the Preliminary Exam

A student who fails the preliminary examination may apply, with consent of all of the members of the students Prelim Exam Committee and the Dean of the Graduate School, for the privilege of a re-examination to be taken *no earlier than 3 months after the first exam date and must be within six months and by the end of the Spring Semester of the 2nd year unless specifically requested and approved in writing by the Dean*. All members of the student's original Prelim Committee must serve on the re-examination committee. Successful completion of the second examination requires the affirmative vote of all Committee members. Failure on the second examination will render a student ineligible to continue for the Ph.D. degree at Duke University.

THE FOURTH YEAR & BEYOND (G4+)

During the fourth year and subsequent years of graduate study in biochemistry, students are primarily responsible for conducting their research. Students must arrange a meeting with their Dissertation Committee on an annual basis, beginning in the fourth year of study. Please note the **Faculty Expectation for the Completion of a Successful Ph.D. Degree** and **Timelines to Degree for PhD Students** on p. 6.

2019/2020 IMPORTANT DATES FOR 4TH YEAR BIOCHEMISTRY STUDENTS (G4)	
Before Feb 28th	Student updates their IDP, schedules and completes the Annual Progress Meeting with their Ph.D. Supervisory Committee. BGSO should be notified of meeting date.

2019/2020 IMPORTANT DATES FOR 5TH YEAR BIOCHEMISTRY STUDENTS (G5+)	
Before May 8th	Student updates their IDP, schedules and completes the Annual Progress Meeting with their Ph.D. Supervisory Committee. BGSO should be notified of meeting date.
At least 1 week prior to meeting:	Student submits 2-3 page written summary to all committee members. Student picks up file from DGSO with documents for Annual Progress Meeting

Annual Progress Meetings

Upon successful completion of the prelim exam, the PhD candidate is required by the Graduate School to meet each subsequent year with the members of their Dissertation Committee.

4th year students should have this meeting completed **no later than February 28th**. 5th+ year students should have this meeting completed no later than May 8th. The Committee should use these meetings to note adequate progress, or to provide help and/or advise. For Annual Progress Meetings:

- Students must submit a short written (~2-3 page) summary of their research project background, goals, progress, and plans to each committee member at least one week prior to the meeting to facilitate the presentation.
- Students should prepare a ~30 min oral presentation summarizing research accomplishments as well as plans for the next year.
- Prior to the student's oral presentation, the Research Mentor will have a few minutes to discuss the Student's progress with the Committee. At each annual meeting, the Student will also be given time to privately discuss any issues, as needed, with the Committee without the Research Mentor.
- Annual progress meetings are typically 1-1.5 hours. More extensive discussions can be held with faculty individually.

Annual Progress Report: Prior to the meeting, the Student should obtain the Academic Folder from the BGSO which will include Evaluation Forms for the Annual Progress Meeting and the Report of Annual Meeting Form. An Annual Meeting Evaluation Form will be completed by each Committee Member. After the Meeting, the Student and Advisor should discuss the comments and recommendations of the Committee and the student may make a copy of the evaluation comments. However, the original completed Committee Evaluation Forms and the signed

Report of Annual Meeting Form must be returned in to the BGSO in order to officially record that the required annual meeting was held.

Changes to the Supervisory Committee

Check your supervisory committee listing in Duke Hub and make sure it matches the committee that will be present at your defense. If a student requires a change to their Prelim/Dissertation supervisory committee, the BGSO will need to be notified by e-mail at the earliest convenience. This e-mail should include an updated Committee Nomination Form which can be found on the Biochemistry website. Before any request is sent, the student should consult with her/his mentor and the faculty member(s) they are planning to remove/add. *Please note*: The Committee recommendations should consist of at least five members (including their advisor) and must include at least three graduate faculty members with expertise in the major field of study and at least one from a minor area, being from outside the degree program or from a clearly differentiated subfield within the Biochemistry Department (the Minor Area representative)*. At least two members of the committee, including the Advisor, must be faculty with a primary or secondary appointment in the Biochemistry Department.

*Outside Committee Member(s) Selection: The Graduate School requires a justification for choosing the minor area representative (the outside member) you would like to serve on your committee. Provide a 1-2 sentence explanation about how this faculty member's expertise is appropriate and distinct from the major area of the thesis research to include on the Supervisory Committee Nomination Form.

Required Extension Request for G8 students:

For students who will begin their eighth year (G8) prior to graduation (***Note***: G8 begins the summer term after May of the G7 Academic Year), an Extension Request must be requested from the Associate Dean for Academic Affairs. The annual progress report and a **specific plan for completion of the dissertation** must be signed by the student, committee chair and DGS and submitted to the Associate Dean for Academic Affairs. Extension requests must include a **specific timeline for completion** within the upcoming academic year, be signed by the student and committee chair, endorsed by the DGS, and be forwarded to the Associate Dean. If this extension is granted and the dissertation is not defended and accepted by the new deadline, the student will be withdrawn from candidacy.

The Dissertation Seminar & Defense

The dissertation is expected to be a mature and competent piece of writing, embodying the results of significant and original research. Please see the *Guide to Graduation* (beginning on page 50) for detailed requirements on writing and submitting your dissertation, along with all other important information for completing your defense (i.e. scheduling your seminar/defense, degree deadlines, etc.).

2019-20 IMPORTANT DATES FOR THE DISSERTATION & DEFENSE

Graduation Date	Submission of the **Intention to receive degree**[1]	Submission of the **Initial Electronic Dissertation**[2]	Final Day to hold the **Oral Defense**[3]	Final Submission of the **Dissertation** and **Exam Card**[3]
December 2019	Oct 25	Nov 4	Nov 18	Dec 2 3PM/5PM
May 2020	Jan 24	March 13	March 30	April 13 3PM/5PM
September 2020	June 15	July 6	July 20	Aug 3 3PM/5PM

[1] ***Submission of the Intention to receive degree***

Student must file an intention to receive degree on-line: Log-in to Duke Hub and click on the "Forms and Requests" tab. Then click the "Apply for Graduate" button.

[2] **Initial Electronic Submission of the Dissertation Defense "Format Check"**

At least two weeks before your defense, but prior to the ***initial submission deadlines*** for each semester, submit your dissertation to UMI/ProQuest: http://dissertations2.umi.com/cgi/login.cgi

[3] **Dissertation Defense Date/ Submission of the Exam Card/Final Submission of the Dissertation**

Final submission of your signed Exam Card & dissertation must occur within 30 days of your defense; however, if you defend within 30 days of the semester deadline of your graduation date, you must adhere to semester deadline, and do not have 30 days to complete your final submission. Final version of dissertation is due to UMI/ProQuest by 3:00 pm on the Due Date; Final Exam card is due by 5:00 pm on the Due Date.

*****Deadlines subject to change:*** *https://gradschool.duke.edu/academics/preparing-graduate/graduation-deadlines*

You can download a pdf of the deadlines at the following site:
https://gradschool.duke.edu/sites/default/files/documents/graduation_deadlines.pdf

Scheduling your dissertation seminar & defense:

The Dissertation Seminar and the Oral Defense are generally given on the same day during consecutive time slots. The student must be registered during the term in which he or she takes the final examination. The examination **may occur during the break between terms** if the student is registered for the terms before and after the break.

The **Dissertation Seminar**, which is given first, is an 50 min oral presentation of the dissertation research that is open to all members of the department and the public, and is typically held in a large seminar room. The **Oral Defense** follows the seminar and is closed to the public and held in a smaller conference room. This question and answer session with the student's Thesis Committee is chaired by the Thesis Advisor and typically lasts ~2 hours.

Once your seminar and oral defense is scheduled, the BGSO should be notified of the date and time of your defense. To reserve space for your seminar (1 hour) and defense (plan to reserve a 3 hour block), please contact the BGSO (see page 9 for rooms/other contacts). ***The Biochemistry Department requires students to submit their completed written thesis to***

their committee members at least 3 weeks prior to the defense date. If students do not meet this deadline, their oral defense date is subject to postponement.

The **final examination** (oral defense) is required to be administered by ALL members of the supervisory committee and can be considered invalid unless all members of the defense committee are present for the exam. If one of a student's committee members cannot make it to the exam (even if four members remain), the student should inform the BGSO *immediately* so that arrangements for conference call or substitution can be made. The final exam should never be held with a committee other than the one approved by the Graduate School. Please see the official Graduate School teleconference policy listed below.

Graduate School degree deadlines: https://gradschool.duke.edu/academics/preparing-graduate/graduation-deadlines

The Graduate School teleconference policy for the dissertation/thesis defense:

1. The majority of your committee must be present at the dissertation/thesis defense.
2. The thesis advisor CANNOT teleconference into the dissertation/thesis defense.

If you plan to have a committee member teleconference into the exam, it needs to be approved by the Graduate School's Associate Dean, ***prior*** *to the exam (john.klingensmith@duke.edu).*

If a student receives prior authorization for a committee member to participate remotely in a final exam, the Graduate School will no longer require that this person have their original signature on the exam cards and/or title and abstract pages. In lieu of an original signature, the Graduate School will accept an emailed PDF letter on institutional letterhead indicating 1) the name of the examinee, 2) the date of the exam, 3) and the remote participant's vote as to whether the person passed or failed the exam. In the event of a vote of failure, the person should indicate whether an opportunity to retake the exam is recommended. The remote participant should email a scanned copy to the DGSA as a PDF. The DGSA will then submit it to the Graduate School. Templates for the text to use can be provided to remote participants (see template text below).

Template text for remote participants: On your university letterhead, use the following statement(s), filling in the correct information by replacing the *italicized* words below:

Date:

This letter is to verify that I participated in *student's name preliminary/master's thesis/dissertation* examination, in its entirety, via *communication medium, eg Skype*. I vote that the student *passed/failed* the exam.

(In the event of failure, indicate whether you recommend the student be allowed to retake the examination.)

Sincerely,

Your signature
Your name
Your title
Your email address

*** Biochemistry Guide to Graduation ***

1. **Check your supervisory committee listing in Duke Hub:**

   Make sure it matches the committee that will be present at your defense (which must contain at least four graduate faculty members). The BGSO will need to be notified by e-mail at the earliest convenience. This e-mail should include an updated Committee Nomination Form which can be found on the Biochemistry website.

2. **Apply for Graduation** *(Intention to receive degree)***:**

   When a student and his/her advisor have agreed that the student is ready to finish within a semester, the student will need to ***Apply for Graduation*** at least two weeks prior to your defense *and* no later than the initial submission deadline for your graduation term.

   - Log into the Duke Hub (using your NetID & password): https://dukehub.duke.edu/
   - Click on the Forms and Requests tab
   - Click on Apply for Graduate

   By Applying for Graduation, you inform the Graduate School that you are planning to graduate in a given semester. An "Apply for Graduation" form is filed for one semester and does not carry over to the next semester. Thus, if you file in the fall and do not defend, you must file a new form in the spring.

   Please note the following deadlines for the Application for Graduation*:

   - **December/Fall Graduation: October 15th**
   - **May/Spring Graduation: January 24th**
   - **September/Summer Graduation: June 15th**

   Deadlines are subject to change. Please refer to the Graduate School's graduation deadlines at:* ***http://gradschool.duke.edu/academics/preparing-to-graduate/deadlines*.

3. **The written dissertation:**

   The Graduate School has very specific guidelines for the format of the written dissertation, and strongly recommends all students use the dissertation templates (available in MS Word or LaTex) in order to reduce the chance of serious formatting problems that could delay graduation. The templates give very specific instructions for formatting, spacing, margins, format for citations, figures, and tables, as well as how to produce landscape pages.

   The dissertation templates (available in MS Word or LaTex) can be found on the following website: http://gradschool.duke.edu/academics/theses-and-dissertations

4. **Dissertation Submission to the Supervisory Committee:**

   At least 3 weeks prior to your exam date, submit a complete copy of your dissertation to each committee member. Ask them in advance if they prefer a pdf (electronic) copy and/or a printed (paper) copy so that these are prepared in time.

5. **Initial Electronic Dissertation Submission ("Format Check"):**

   At least two weeks prior to your defense, and no later than the initial submission deadline for each semester, the initial dissertation submission to UMI/ProQuest must take place - see dates below. *Along with the initial submission, you should also submit an Advisor Letter and Official Defense Announcement at the same time (see #6).*

Please note the *Initial Submission deadlines* for each semester *(no later than 5:00 pm EST)*:

- **December/Fall Graduation: November 4th**
- **May/Spring Graduation: March 13th**
- **September/Summer Graduation: July 6th**

Submit your dissertation at: http://dissertations2.umi.com/duke

The initial submission of your dissertation to UMI/ProQuest is for the purpose of checking the format. The information you provide at the initial submission will be forwarded first to the Graduate School Administrator for approval. Do not destroy original file from which you create the PDF, as you will need this version for revision purposes. You will have the opportunity to upload revisions of your thesis/dissertation after your defense. More information about Electronic Theses and Dissertations (ETDs) can be found at the following Graduate School site: http://gradschool.duke.edu/academics/theses-and-dissertations

Additional Information about Electronic Theses and Dissertations (EDTs):

- For submission procedures and guidelines, see the Graduate School ETD Guidelines: http://gradschool.duke.edu/academics/theses-and-dissertations/overview
- For MS Word or Adobe Acrobat help, call the OIT Help Desk at 919-684-2200.
- For technical help with pdf submission, contact support@dissertation.umi.com or visit http://gradschool.duke.edu/academics/theses-and-dissertations/etd-technical-help

ETD Copyright Information: When you submit your thesis/dissertation electronically, you will also permit Duke University to make it available online through DukeSpace at Duke Libraries. View the following links for additional information about ETD Availability and the Non-exclusive Distribution License and Dissertation Availability Agreement, including the options to request an embargo.

- More information: http://gradschool.duke.edu/academics/theses-and-dissertations/etd-copyright-information
- Publishing Concerns: http://gradschool.duke.edu/academics/theses-and-dissertations/etd-publishing-concerns
- Other Resources and Guidelines: http://www.etdadmin.com/cgi-bin/main/resources

6. Advisor Letter & Official Defense Announcement:

At least two weeks prior to your exam date (at the same time as the initial submission of your dissertation), request 1) from your Advisor an Advisor Letter and 2) from your Department DGSA an Official Defense Announcement. Both should be emailed to the Graduate School at gradacademics@duke.edu with the student name as part of the subject line. If you would like the DGSA to submit both documents on your behalf, please send the signed Advisor Letter to the DGSA (norfleet@duke.edu).

1) From the DGSA, request an Official Departmental Defense Announcement

Send an email to the DGSA (norfleet@duke.edu) with the following information for submission of the Official Departmental Defense Announcement to the Graduate School:

- **Date, time and place of dissertation seminar & defense**
- **Your name** (as it appears on your dissertation title pages)
- **Title of dissertation** (including any special fonts/symbols)

2) **From your Advisor, request an Advisor Letter stating that your dissertation is complete and acceptable for defense**, to be emailed to the Graduate School (with the student name as part of the subject line). A template of a standard advisor letter can be found below.

Advisor Letter Template: Please feel free to use the template below for your Advisor Letter. Please individualize each letter and update the information indicated in blue. Department letterhead can be found in the BCH Administration Office in the Nanaline Duke Bldg.

Date

Graduate School Academics Office
Duke University Graduate School
2127 Campus Drive, Box 90065
Durham, NC 27708

To Whom it May Concern:

Re: Mr./Ms. Student's Full Name *(as it is listed on their Dissertation)*

I have read the dissertation of Student's Full Name and it is complete and ready to defend.

Sincerely,

Dr. Advisor Name
Advisor/Dissertation Committee Chair
Professor, Department of Biochemistry

Note for students who have co-advisors: If you have co-advisors, you can choose to have both advisors sign the same letter or have each advisor submit a separate letter.

7. Exam Card Appointment (Exam Card Pick-up):

After the initial submission of your dissertation to UMI/ProQuest and your Advisor Letter, & Official Announcement, the Graduate School staff will review your submission and e-mail you within 2 days about scheduling an exam card appointment with the person who checked your document. At this appointment you will receive your final examination card to take with you to your defense. Appointments are held at the Graduate School, located at 2127 Campus Drive.

Provided you have 1) filed an "Apply for Graduation" form in Duke Hub for the term you are graduating, 2) submitted your dissertation, 3) submitted the Advisor Letter and Official Defense Announcement, and 4) have an approved dissertation committee, you will receive:

1. **Final Examination Certificate**, which your committee must sign at the conclusion of your final exam indicating that that you have successfully defended your word.
2. **Graduate School's computer-based Ph.D. Exit Survey**

8. Dissertation Seminar Flyer:

At least one week prior to your defense, the DGSA will create a ***Dissertation Seminar Flyer*** and email it to all department faculty, graduate students and post-docs. The DGSA will also post flyers in the Nanaline Duke Bldg. If you would like copies to post at other campus locations, please notify the DGSA.

9. The Dissertation Defense:

At your oral defense, a copy of the Dissertation Defense Evaluation form will be issued to each committee member. At the conclusion of your defense, ALL completed forms need to be returned to the DGSA. Any "Comments for the student…" included on the form will be distributed to the student and research advisor to jointly read and discuss.

After completing your seminar & defense:

1. Obtain the original signatures* of your committee on:
   - one (1) title signature page
   - one (1) abstract title signature page
   - the Final Exam Certificate
2. Obtain the signature of your Director of Graduate Studies on your Final Exam Certificate (exam card).

***Note**: If a student receives prior authorization for committee members to participate remotely in a dissertation exam, the Graduate School no longer requires that those members have their original signature on the exam card and/or title & abstract pages. See "Teleconference Policy" on page 49.*

10. Final Submission:

Final submission of your signed Exam Card & revised dissertation must occur within 30 days of your defense; however, if you defend within 30 days of the semester deadline of your graduation date, you must adhere to semester deadline, and do not have 30 days to complete your final submission. Semester deadlines are listed below.

1. **Submit revised PDF file to UMI/ProQuest**: The final version of your dissertation, taking into consideration the revisions required by the Graduate School **and** the revisions required by your committee. You will receive notification when the Graduate School has accepted your dissertation.

2. **Submit the following materials to the Graduate School after your defense**:
   - Signed Final Exam Certificate
   - One title signature page with original signatures.
   - One abstract title signature page with original signatures.
   - Completed "Survey of Earned Doctorates."
   - Signed "Non-Exclusive Distribution License and Dissertation Availability Agreement"

December/Fall Graduation

Monday, November 18th: Final day to hold the dissertation seminar/defense.

Monday, December 2nd: Submit final version of dissertation to UMI/ProQuest by 3:00 pm EST.
Turn in Final Exam Card to Graduate School by 5:00 pm EST.

May/Spring Graduation

Monday, March 30th: **Final day to hold the dissertation seminar/defense.**

Monday, April 13h: **Submit final version of dissertation to UMI/ProQuest by 3:00 pm EST.**
Turn in Final Exam Card to Graduate School by 5:00 pm EST.

September/Summer Graduation

Monday, July 20th: **Final day to hold the dissertation seminar/defense.**

Monday, August 3rd: **Submit final version of dissertation to UMI/ProQuest by 3:00 pm EST.**
Turn in Final Exam Card to Graduate School by 5:00 pm EST.

Deadlines are subject to change: *https://gradschool.duke.edu/academics/preparing-graduate/graduation-deadlines*

Note*: If, at the end of the semester/term, the student cannot meet the deadlines, the student will need to register for the ensuing term or semester in which the degree will be awarded and Apply for Graduation again for the new term. You will also need to notify the BGSO as soon as your plans for graduation change so that funding and registration can continue in a timely manner.*

Additional Information for Graduates

Bound copies of dissertations

If you would like a personal copy, you can order copies through ProQuest or print out your dissertation and bring it to the Textbook Store in the Bryan Center for binding. Please note that image resolution will be higher on the self-printed copy brought to the Textbook Store than on the copy ordered through ProQuest. If your dissertation contains images and/or you require a higher quality copy, the Graduate School recommends the services of the Textbook Store.

Commencement

Graduation exercises are held once a year, in May, when degrees are conferred on and diplomas are issued to those students who have completed requirements by the end of the spring. Those who complete degree requirements by the end of the previous fall or the summer term receive diplomas dated December 30 or September 1, respectively. September and December graduates are invited to attend the May graduation ceremonies but must register online for the Ph.D. Hooding Ceremony. More information can be found at the following site: http://gradschool.duke.edu/gsa/graduation/index.php.

Health Insurance Information for Graduates

Students who complete their degree/graduate will have the option to continue their health insurance coverage for the remainder of the plan year at their own pro-rated expense. Otherwise the Graduate School payment of the premium will continue through the last day of the month during which the graduation became effective (see more detailed info below). If a student chooses to maintain his/her Duke medical insurance coverage, the student will be charged for, and expected to pay, the balance of the plan term premium through his/her Bursar's account. If the student wishes to terminate his/her Duke insurance plan, he/she must complete the Petition to Terminate Coverage form and submit it to the Student Health Insurance Manager in the Student Health Center.

Fall (December) Graduates: Students who graduate in the fall will have the option to continue their health insurance coverage for the remainder of the plan year at their own pro-rated expense. Graduate School payment of the premium will continue through December

31st. If a student chooses to maintain his/her Duke medical insurance coverage through the seven remaining months of the plan year (through July 31st), the student will be charged for, and expected to pay, the balance of the plan term premium through his/her Bursar's account. If the student wishes to terminate his/her Duke insurance plan, he/she must complete the Petition to Terminate Coverage form and submit it to the Student Health Insurance Manager in the Student Health Center. ***Please note that your policy will remain in effect unless you complete and submit the Petition to Terminate Coverage form!***

Spring (May) Graduates: Students who graduate in the spring are eligible to continue their health insurance coverage for the remainder of the plan year at the Graduate School's expense (through July 31st)*. No action is required on the part of the student to continue this coverage. However, students are strongly encouraged to make sure they secure alternative health insurance coverage by the end of the Duke SMIP year on July 31st. *This includes students who choose to defend earlier in the semester (i.e. Jan, Feb) for Spring graduation. They will continue to receive health insurance through the remainder of the plan year (July 31st), since their tuition remission & fees have already been paid in full for the entire semester.

Summer (September) Graduates: Since the Duke SMIP plan year ends on July 31st, whereas summer graduates are technically enrolled through the end of August, students graduating in the summer term may be without health insurance for their last month of study. Students are therefore given the option of extending their coverage for one month, through August 31st. If the Graduate School paid the student's Duke SMIP premium for the prior year, the Graduate School will also cover the premium for the August extension. If the student was responsible for the prior year premium, and opts to extend coverage for the month of August, the student will be responsible for the additional premium payment.

Option to continue coverage: Graduating students who have been covered by the Duke SMIP for at least the six months immediately prior to their graduation are eligible to extend their SMIP coverage for an additional six months after graduation, at their own pro-rated expense. Coverage will consist of the benefits selected by the school for the 2019/20 policy year, and may differ from current benefits. *The link to enroll and premium rates will be available in July of each year, and will be accessible from the following site:*
http://studentaffairs.duke.edu/studenthealth/health-insurance.

Questions concerning enrollment and termination of the Duke Student Medical Insurance Plan should be directed to insurance@studentaffairs.duke.edu or 684-1481, in the Duke Student Health Center (http://studentaffairs.duke.edu/studenthealth/health-insurance). You can contact the Duke Student Health Center directly at (919) 681-WELL.

Dental Insurance: Although dental services are not available through Duke Student Health Center, all students enrolled in the Student Health Insurance Plan are eligible for discounted dental visits through BASIX. Please see the website for participating practices: http://www.basixstudent.com/duke/?agreed=1

DentalBlue dental insurance is also available for purchase at the following site:
http://www.bcbsnc.com/content/plans/dentalblue/index.htm

REQUIREMENTS FOR THE MASTER'S DEGREES

Students may, under certain circumstances, receive a terminal Master's degree if they choose to end their study before finishing their Ph.D. work. The Biochemistry department awards two types of Master's degrees: Master of Arts, M.A. (without a thesis), and Master of Science, M.S. (with a thesis). At Duke, individual departments decide whether the M.A./M.S. program may be completed by submission of an approved thesis or by other academic exercises. In Biochemistry, the recommendation for a student to proceed towards earning a terminal M.A. or M.S. is granted by the advisor, the DGS, the Chair, and/or the student's committee.

Formal Graduate School Requirements:

1) A minimum of 30 units of credit registration, at least 24 of which must be graded.
2) Continuous registration.
3) A master's exam. In addition, many departments have further requirements, such as a thesis or other formal written exercise.

Course Requirements

Thirty units of graduate credit at Duke constitutes minimum enrollment for the M.A. and the M.S. degrees. Students must present acceptable grades for a minimum of 24 units of graded course work, 12 of which must be in the major subject. A minimum of 6 units of the required 24 is normally in a minor subject or in a related field, which is approved by the student's major department. In Biochemistry, these course requirements are typically satisfied from coursework taken in the first two years of graduate training.

Completing the "Apply to Graduate" Process for a MS or MA

When a student and his/her advisor have agreed that the student is ready to finish with a Master's within a semester, the student will need to ***Apply for Graduation*** at least two weeks prior to the thesis defense *and* no later than the initial submission deadline for the graduation term.

- Log into the Duke Hub (using your NetID & password): https://dukehub.duke.edu/
- Click on the Forms and Requests tab
- Click on Apply for Graduate

> Note: By Applying for Graduation, you inform the Graduate School that you are planning to graduate in a given semester. An "Apply for Graduation" form is filed for one semester and does not carry over to the next semester. Thus, if you file in the Fall and do not defend, you must file a new form in the Spring.

Declaration of intention letter: The declaration of intention letter, which should be sent to the Graduate School, presents the title of the thesis or specifies alternative academic exercises on which the degree candidate will be examined. Alternative academic exercises can include written or oral exams on a prescribed reading list or body of material; oral exams on a paper or set of papers submitted by the student; or oral exam on a research project or memo. The doctoral preliminary examination may also serve as the final examination for the master's degree. You should inform the Graduate School which type of examination the department will use. The declaration must have the approval of both the director of graduate studies in the major department and the chair of the student's advisory committee.

M.S. Thesis Requirements

For a M.S., the thesis should demonstrate the student's ability to collect, arrange, interpret, and report pertinent material on a research problem. The thesis must be written in an acceptable style and should exhibit the student's competence in scholarly procedures. Copies of the document should be distributed by the student, to all members of the examining committee **at least one month prior to the exam date.**

Requirements of form are set forth by the Graduate School and can be found at the following website: https://gradschool.duke.edu/academics/theses-and-dissertations. The Guide for the Preparation of Theses and Dissertations can be downloaded at the Graduate School website: https://gradschool.duke.edu/sites/default/files/documents/ElectronicThesisDissGuide.pdf

The thesis must be submitted in an approved form to the Graduate School **at least two weeks before the scheduled date of the final examination or no later than the initial submission deadline for that semester.** Submission deadlines can be found at the following website: https://gradschool.duke.edu/academics/preparing-graduate/graduation-deadlines

The Master's Degree Examining Committee and the Examination

The department's Director of Graduate Studies, with the student, recommends an examining committee normally composed of three members of the graduate faculty, one of whom is usually from a department other than the major department or from an approved minor area within the major department. Nominations for membership on this committee are submitted on the appropriate form for approval to the Dean of the Graduate School **at least one week preceding the final exam.** The committee will conduct the examination and certify the student's success or failure by signing the card provided by the Graduate School office (Amy Norfleet, 254 Nanaline Duke Bldg.). This card indicates completion of all requirements for the degree.
M.S. Only: If a thesis is presented, the committee members also sign all copies of the thesis, and the candidate then returns the original and first two copies to 013 Perkins Library.

Responsible Conduct of Research (RCR)

Responsible Conduct of Research (RCR) training is a formal requirement of the Ph.D. degree in every department and program of study at Duke. This reflects our expectation that every doctoral candidate will be well qualified to address the growing ethical challenges that arise when teaching or conducting research.

G1-G2

All matriculating Ph.D. students in the Basic Medical Sciences at Duke University are required to complete 18 hours in RCR training. To accomplish this, each Ph.D. student must attend RCR Orientation, a post-orientation weekend retreat on RCR at the Grandover Resort in the city of Greensboro, NC. Students should also attend at least 2 hours of an "elective" RCR Forum on a variable topic selected by the student, and attend the new 4-hour required 3rd year training to meet the number of training hours required. Transcript Credit: Completion of the RCR requirement will be monitored by the Graduate School and documented on each student's university transcript. Each Ph.D. student can 'add up' his/her RCR credit hours by reviewing their official transcript or Academic History in Duke Hub. For more information about RCR, visit the following Graduate School website:
http://gradschool.duke.edu/professional-development/programs/responsible-conduct-research

> ***2019 RCR Orientation Retreat:*** Basic Medical Sciences (GS 710A)
> Grandover Resort, Greensboro, NC
> August 23-24, 2019 (Friday through Saturday - Transportation, lodging, and meals provided)
> For more info, visit the Office of Biomedical Graduate Education First-Year Ethics Retreat webpage
> Use the following links for additional information about a typical agenda and about the travel and lodging logistics for the 2019 retreat.

G3

3rd Year RCR course for graduate students in the Basic Medical Sciences: A 4 credit-hour RCR course (GS 713) will be required of all third year graduate students (G3) as a sequel to the first year RCR course. The course will be held every May/June for students at the end of their 3rd year of graduate school. Students who have not completed their PhD by the end of their 7th year and have not retrained since taking the 3rd year course, will be required to retake the course. This policy will ensure that all students are retrained at least every 4 years, which is a NIH requirement.

RCR Forums

GS711 RCR Forums: Beyond the RCR orientation, each PhD student should complete six additional hours of RCR training during his or her first four years of study. This requirement can be met by attending three RCR Forums (two-hour workshops, GS711 or GS712), which are offered each fall and spring on a wide range of topics. The schedule of RCR Forums will be provided at the beginning of each semester. Students are responsible for checking the schedule, preregistering, and participating in these events to complete their RCR degree requirement. Students must pre-register for RCR Forums on the Graduate School web site - NOT through Duke Hub.

GS712 Departmental RCR Forums: The Graduate School collaborates with other Duke Schools, departments, campus centers, and offices to promote discipline-specific training in RCR-related issues. While many groups may sponsor events on ethical topics, only events focused on 'research' ethics and pre-approved by The Graduate School will qualify for RCR transcript credit. Contact the Grad School to determine whether an event will qualify.

To view the current schedule of RCR Forums, visit: http://gradschool.duke.edu/professional-development/programs/responsible-conduct-research/rcr-forums. The forums, along with other events, can also be found on the Graduate School's calendar of events, which can be viewed at: http://gradschool.duke.edu/student-life/events

RESOURCES FOR INTERNATIONAL STUDENTS

International House

https://studentaffairs.duke.edu/ihouse

Our mission is to provide educational services and advocacy to the international population at Duke as well as outreach to the Durham community. We offer extensive cross-cultural programming and information to enhance the global mission of the university.

- To assist internationals and their families with orientation and acclimation,
- To enhance cross-cultural interaction through programming & community outreach,
- To provide advocacy and support for the Duke International Community

Location: 2022 Campus Dr., Box 90417, Durham, NC 27708
Phone: (919) 684-3585
Office Hours: Monday–Friday, 8:30 a.m.–5:00 p.m.

Visa Services Office

https://visaservices.duke.edu/

The Duke Visa Services office serves as a nexus for monitoring and shaping legislation, regulations, and policies at the federal, state and local levels that affect international educational exchange, and for interpreting and applying those directives and controls in the Duke environment in support of the teaching, research, patient care, and community service goals of the university, medical center, health system and affiliated institutions.

Department liaisons work primarily with international students, staff and faculty for university, medical center, health system and affiliated institutions. Visa Services liaison for the Department of Biochemistry: ***Pamela Billie*** (pamela.billie@duke.edu)

Location: 114 South Buchanan Boulevard
Smith Warehouse: Bay 7-1st Floor, Durham, NC 27708
Phone: (919) 681 – 8472
Office Hours: Monday - Friday, 8:00 am - 5:00 pm, and by appointment.

English For International Students (EIS)

Provides resources to help students succeed in their academic programs; build a community that actively seeks the intellectual and cultural contributions of international students and scholars; help those students and scholars be fully-participating members of the academic community and become global ambassadors for Duke.

The primary mission of EIS is to contribute to Duke's commitment to internationalization by supporting the academic life of international students. Every year, over 200 international students from many different departments and countries take EIS courses. EIS offers courses in both oral communication and academic writing for international students enrolled in graduate degree programs at Duke.

EIS Placement Exams: All international graduate students whose native language is not English are required to take writing and oral/speaking exams through the English for International Students (EIS) program. This is a REQUIREMENT of the Graduate School and the Department. The Graduate School's policy is for students to take any required English courses early in their academic careers for maximum benefit. For more information, please visit http://www.duke.edu/web/eis

Writing Studio: Students can make appointments for both face-to-face and e-tutoring appointments. Several of the tutors have ESL experience and all tutors have had some training in working with international students. Students may request a specific tutor if they wish and can make multiple appointments. http://uwp.duke.edu/writing-studio

Oral Skills Coaching: Students may make appointments with an experienced ESL speaking coach to develop and rehearse any type of oral presentation, practice discussing their field and research, or practice specific speaking skills. For more information, please download the following: http://www.duke.edu/web/eis/services/OralSkillsCoaching08Rev.pdf

Contact: 919-681-8125 or www.duke.edu/web/eis

Applying for a SSN or ITIN

Applying for a Social Security Number (SSN#) or Individual Tax Identification Number (ITIN#): International graduate students at Duke, who are offered a Graduate Awards fellowship, a stipend for which this is no specific work obligation such as teaching or research, are eligible to apply for a Individual Tax Identification Number **(ITIN).**

When a student begins their third year of study and is hired as a Research Assistant, supported by their PI funds, they can apply for a Social Security number. This should be done at the first opportunity, after they have been formally hired as a Research Assistant.

When a student has received their ITIN# or SSN card, please bring it to Amy Norfleet, in the Biochemistry Graduate Studies Office. She will need to make a copy for your payroll files and send a copy to the Corporate Payroll office.

Transportation to Social Security Office: As most new international students do not have automobiles, Duke University's International House provides transportation to the Social Security Office at 3004 Tower Blvd., Durham, NC 27707. The shuttle to the SS office departs at 10am each Wednesday from the International House on Duke's West Campus, at the corner of Anderson and Campus Drive.

Appendix I

Courses of Interest to Biochemistry Graduate Students

Below are selected courses offered by departments in the Biomedical Sciences. A full list of courses offered from departments in the Basic Sciences can be found on the School of Medicine Office of Biomedical Graduate Education website: https://medschool.duke.edu/education/degree-programs-and-admissions/office-biomedical-graduate-education/current-students/course-listings

Fall Semester

BIOCHEM 593-01 - Independent Study (2 units) Graded
Instructor: DGS-Kuehn
Days/Time/Location: N/A (lab rotations)

Individual research by graduate students in a field of special interest under the supervision of a faculty member. The student will demonstrate data collection, critical analytical skills and interpretation of results of research on a faculty mentor-approved topic.

BIOCHEM 658 - Structural Biochem I (2 units) Graded
Instructor: Beese
Days/Time/Location: MWF, 3:20–4:10 pm, 439 Nan Duke *(1st Half Semester: 8/27/2018 - 10/12/2018)*

Structure of Macromolecules - Principles of modern structural biology. Protein-nucleic acid recognition, enzymatic reactions, viruses, immunoglobulins, signal transduction, and structure-based drug design described in terms of the atomic properties of biological macromolecules. Discussion of methods of structure determination with particular emphasis on macromolecular X-ray crystallography NMR methods, homology modeling, and bioinformatics. Students use molecular graphics tutorials and Internet databases to view and analyze structures.

BIOCHEM 659 - Structural Biochem II (2 units) Graded
Instructor: Zhou
Days/Time/Location: MWF, 3:20–4:10 pm, 439 Nan Duke *(2nd Half Semester: 10/15/2018 – 11/30/2018)*

Molecular Biology I - Continuation of BCH 658. Structure/function analysis of proteins as enzymes, kinetics of binding, catalysis and allostery, protein folding, stability and design protein-protein interactions. This is an introductory course to learn how to use quantitative methods to understand biological structure and function.

BIOCHEM 681 – Biophysical Methods (3 units) Graded
Instructor: Oas
Days/Time/Location: T Th, 10:05–11:20 am, 147 Nan Duke

A structure-based introduction to the role of thermodynamic driving forces in biology. An overview of experimental sources of structural and dynamic data, and a review of the fundamental concepts of thermodynamics. Both concepts are combined to achieve a structural and quantitative mechanistic understanding of allosteric regulation, and of coupled ligand binding and conformational change. Statistical thermodynamics is used to develop ensemble models of protein and nucleic acid dynamics. This treatment leads into specific examples and general principles of how to interpret structural and dynamic information toward the purposes of other research.

BIOCHEM 745S - Biochemistry Seminar (1 unit) Graded
Instructor: Brennan
Days/Time/Location: W, 4:30–5:30 pm, 439 Nan Duke

Required of all first, second & third year biochemistry graduate students. The primary goal of this course is for students to learn how to orally present the background, data, conclusions and future

prospects of their research clearly and concisely. First year students present rotation projects. Second and third year students present their research annually (in the fall or spring term), with students providing peer evaluations of each presenter.

BIOCHEM 790S - Seminar (Topics) (2 units) Graded
Instructor: Kuehn
Days/Time/Location: M W, 10:30–11:45 am, 247 Nan Duke

This is a 2-credit discussion-based course covering selected topics in Biochemistry. Topics and instructors announced each semester.

BIOLOGY 701 – Graduate School 101 - Succeeding in Graduate School in the Biological Sciences (0.5 units) CR/NC
Instructor: Noor
Days/Time/Location: W, 12:00–1:00 pm, LSRC A247 *(1st Half Semester: 8/28/2017 - 10/13/2017)*

Weekly lecture and Q&A on choosing a thesis advisor, the grant proposal and scientific manuscript peer review processes, and other topics related to succeeding in graduate school. Also counts for RCR credit. Minicourse, 1st half-semester. *See attached flyer for more information about this course.*

BIOLOGY 702 – Succeeding Beyond Graduate School - Career Options with a PhD in the Biological Sciences (0.5 units) CR/NC
Instructor: Noor
Days/Time/Location: W, 12:00–1:00 pm, LSRC A247 *(2nd Half Semester: 10/16/2017 – 12/01/2017)*

Weekly lecture and Q&A on alternative careers in the biological sciences, preparing job applications, and other topics related to succeeding beyond graduate school. Also counts for RCR credit. Minicourse, 2nd half-semester

FALL COURSES OFFERED BY OTHER DEPARTMENTS IN THE BIOMEDICAL SCIENCES:

A full list of courses offered from Basic Sciences departments can be found on the SoM Biomedical Graduate Education website: Biomedical Education Graduate Student Course Listings

While we do not encourage Biochemistry 1st year students to take additional courses beyond the recommended Biochemistry courses in their first semester of Graduate School, students interested in broadening their foundations in Biological Sciences may be interested in enrolling in the following courses during the Fall term of their 2nd year.

I. MODULAR COURSES

CMB 710 - Cell & Molecular Biology (1 unit/module)
Instructor: Mathey-Prevot
Days/Time/Location: M W F, 10:20–11:40 am, TBA

This modular course offers 27 topic areas covering a wealth of cell and molecular biology in a flexible modular format. Each 2-week module topics emphasize either in-depth critical discussion of the primary literature, an emphasis on developing quantitative/mathematical approaches to the biology, or both. Each module is registered for and graded independently, and students can take any number of modules during the semester.

UPGEN 778 (MGM/CMB 778) – Genetic Solutions to Biological Problems (1 unit/module)
Instructor: Haase
Days/Time/Location: M W F, 2:00–3:30 pm, TBA *(http://upg.duke.edu/about/index.html)*

This course offers 2-week modules in 24 focus areas covering a wealth of genetics and genomics areas, including, Quantitative Genetics and Genomics, Model Organism Genetics and Genomics, and

Topics in Genetics and Genomics. Each module is registered for and graded independently, and students can take any number of modules during the semester

II. OTHER COURSES OF INTEREST TO GRADUATE STUDENTS IN BIOCHEMISTRY

BIOLOGY 723 – Statistical Computing for Biologists (3 units)
Instructor: Magwene
Days/Time/Location: Tu, 3:05–5:35 pm, Bio Sci 154

Statistical computing for the biological sciences with an emphasis on common multivariate statistical methods and techniques for exploratory data analysis. Goal of the course is to help graduate students in the biological sciences develop practical insights into methods they are likely to encounter in their research. Provides introductions to "R" statistical computing environment and Python programming language.

CELLBIO 710 – Papers and Grant Writing Workshop [Scientific Writing] (3 units)
Instructor: Soderling
Days/Time/Location: M W F, 8:45–9:35 am, 437 Nan Duke

Introduction to grant and fellowship writing; writing assignment of two proposal topics; evaluation and critique of proposal by fellow students. *MWF 8:45–9:35 am; 437 Nanaline Duke Bldg; Soderling; 3 Units (crosslisted with NEURO 710 Writing Grant Proposals)*

CBB 520 – Genome Tools and Technologies (3 units)
Instructor: Dietrich
Days/Time/Location: T Th, 10:05–11:20 am, TBA

The course introduces the laboratory and computational methodologies for genetic and protein sequencing, mapping and expression measurement. Prerequisites: Students are expected to have some background course work in genetics, molecular biology, biochemistry, and a modern programming language.

CBB 574 – Modeling and Engineering Gene Circuits (3 units)
Instructor: You
Days/Time/Location: W F, 11:45 am–1:00 pm, TBA

This course discusses modeling and engineering gene circuits, such as prokaryotic gene expression, cell signaling dynamics, cell-cell communication, pattern formation, stochastic dynamics in cellular networks and its control by feedback or feedforward regulation, and cellular information processing. The theme is the application of modeling to explore "design principles" of cellular networks, and strategies to engineer such networks. Students need to define an appropriate modeling project. At the end of the course, they're required to write up their results and interpretation in a research-paper style report and give an oral presentation. Prerequisites: Biomedical Engineering 260L or consent of instructor. WF. 1:25pm-2:40pm (check with instructor or correct time of class).

CMB 797 - Modern Techniques in Molecular Biology (2 units)
Instructor: Kwatra
Days/Time/Location: M W F, 8:45–9:35 am, 384 Nan Duke

This course introduces the fundamental laboratory techniques used in basic research. It is divided into two sections. One section covers techniques used for protein purification, analysis, and the study of protein-protein interactions. The second covers nucleic acid based techniques, including a review of basic nucleic acid chemistry, enzymatic modification, qualitative and quantitative PCR, nucleic acid sequencing, cloning strategies, vectors, and measurement of transcript expression including microarray techniques. This course is built around a team-based learning model. Course reading material and recorded lectures are provided to students to review before class and class time is spent reinforcing the material through problem sets and group discussion. *(Mini-course - 1st Half Semester)*

MGM 720 – Computational Tools in Next Generation Genomic Analysis (3 units)
Instructor: Dietrich
Days/Time/Location: Tu Th, 3:05–4:20 pm, 289 CARL

This course is an intensive, one semester course in computer skills necessary to carry out analysis of next generation genomic data. The philosophy for this course is that we are training PhD students, and they should have a fairly in-depth understanding of how this analysis is carried out. This course offers that understanding. The course will involve only a small amount of lecture, and be primarily a hands-on laboratory with extensive discussion. Permission number from Instructor required for registration. Class size is limited to 6 students.

MOLCAN 818/PHARM 818 – Molecular Mechanisms of Oncogenesis (2 units)
Instructor: Counter and Yao
Days/Time/Location: T Th, 10:05–11:20 am, C335 LSRC

This course is a lecture presentation and discussion course on the molecular mechanisms underlying cancer development in which students complete periodic tests, present a paper, and work in a group to write and defend a grant proposal. The objective of the course is to provide an opportunity for in-depth discussions of molecular mechanisms underlying the development of human cancers. The course is intended for second-year students who have already taken the course of Cell Signaling. Instructor consent required.

PHARM 835 – Innovations in Drug Development (1 unit)
Instructor: Schwartz-Bloom
Days/Time/Location: M W, 3:05–4:20 pm, C335 LSRC

Introduction to major issues in developing a drug to treat a disease in an interdisciplinary lecture-based and team-based learning environment. Translation of principles in biomedical sciences, biomedical engineering, and chemistry along with innovative approaches to develop a hypothetical drug for treating a disease of choice. Hypothetical development of model compounds, target analysis, and in vitro and in vivo models to test drug efficacy. The 1st half of the course will include lecture/discussion from experts (including faculty from Duke departments, and others from industry) on topics relevant to drug development—from target identification to market. The 2nd half of the course will be a team-based learning approach as students "develop their drug" and share their discovery with the other teams. Course requires one of the following (or equivalent): Pharm 533, Chem 518, or BME 577. This course is for 2nd+ year students.

SBB 682T – Advanced Physical Biochemistry (3 units)
Instructor: Oas
Days/Time/Location: TBA - Contact course instructor for times & location.

Transient kinetics, computational methods, multidimensional NMR, x-ray crystallography, and thermodynamics of association. Prerequisite: Structural Biology and Biophysics or consent of instructor. Oas; Tutorial – contact Course Director for time & location. Also offered in Spring Term.

III. Statistics Course Designed for Advanced Graduate Students (3rd yr+) in Biological Sciences:

Note: this course has a waiting list, so interested interested students must contact Dr. Slotkin and plan at least 1 year ahead!

PHARM 733-01 (733-02, 733-03) – Experimental Design and Biostatistics (2 units)
Instructor: Slotkin
Days/Time/Location: 733-01: Tu, 8:30–10:15 am, C144 LSRC
733-02: W, 8:30–10:15 am, C144 LSRC
733-03: Th, 8:30–10:15 am, C144 LSRC

Experimental Design and Biostatistics for Basic Biomedical Scientists: The use and importance of statistical methods in laboratory science, with an emphasis on the nuts and bolts of experimental design, hypothesis testing, and statistical inference. Central tendency and dispersion, Gaussian and non-Gaussian distributions, parametric and nonparametric tests, uni- and multivariate designs, ANOVA and regression procedures. Ethical issues in data handling and presentation. Student presentations in addition to formal lectures. Intended for third-year graduate students. Instructor consent required. *(Sections 733-01, 733-02 & 733-03 run concurrently)*

Spring Semester

BIOCHEM 593-01 - Independent Study (2 units) Graded
Instructor: DGS-Kuehn
Days/Time/Location: N/A (lab rotations)

Individual research by graduate students in a field of special interest under the supervision of a faculty member. At the conclusion of rotation research projects, the student will present an oral report containing analysis and interpretation of a faculty mentor-approved topic. If in a thesis lab, the student will prepare ongoing oral and written analyses of the proposed project and accumulated results and interpretations.

BIOCHEM 745S - Biochemistry Seminar (1 unit) Graded
Instructor: Brennan
Days/Time/Location: W, 4:30–5:30 pm, 439 Nan Duke

Required of all first, second & third year biochemistry graduate students. The primary goal of this course is for students to learn how to orally present the background, data, conclusions and future prospects of their research clearly and concisely. First year students present rotation projects. Second and third year students present their research annually (in the fall or spring term), with students providing peer evaluations of each presenter.

BIOCHEM 622 - Structure of Biological Macromolecules (3 units) Graded
Instructor: Richardson
Days/Time/Location: T Th, 1:25–3:25 pm, 132 Nan Duke

How to get the most out of experimental and computational 3D structure: a) 3D Molecular Literacy: Computer and physical molecular models of proteins and nucleic acids; worksheets and hands-on exploration. b) Data bases and the data itself: gaining familiarity with the PDB (Protein Data Bank) in general, the EDS (Electron Density Server), and the peculiarities, caveats, and reliabilities of different categories of molecular data. c) Computational methods for studying and depicting macromolecules: Model building in structural biology, Molprobity and all-atom contact analysis, and methodologies for multiple conformations, ensembles, and mobility. d) Student Projects: interactive 3D illustration of some scientific point about macromolecules, using kinemages or other molecular graphics programs often with short non-interactive introduction. Reports given at end of semester, progress shown periodically. Once a week in-class presentations, discussion, and hands-on work with physical and computer molecular models. Homework includes worksheets and individual student projects.

BIOCHEM 667 - Biochemical Genetics I (2 units) Graded
Instructor: Modrich
Days/Time/Location: T Th, 10:05–11:20 am, 148A Nan Duke *(1st Half-Semester)*

DNA and Genome Stability – Chromatin and chromosome structure, replication, repair, genetic recombination, mutation and chromosome rearrangement.

The major emphasis will be on reading and discussing primary research papers in depth. The idea is to explore how new concepts have been developed in nucleic acids biology and biochemistry and what types of experiments have made advance possible. This will be done in two ways. First, each section of the course will consist of background lecture material presented as needed by the faculty member. Then there will be several sessions to discuss papers selected by the faculty as paradigm papers. The students will present these papers orally using figures from the papers and explanatory background as needed. Students will be asked to prepare an 8-10 page research paper or an oral talk to demonstrate proficiency in the topics.

BIOCHEM 631 - Membrane Biology (CMB631, NEURO631, PHARM631) Contemporary topics in membrane biology (2 units) Graded
Instructor: Lee
Days/Time/Location: M W F, 10:05–11:20 am, 247 Nan Duke

This course will highlight modern topics regarding biological membranes and membrane proteins that are important for human physiology and disease. Topics include structure and dynamics of biological membranes, structure and function of membrane proteins that play critical roles in cell signaling, diseases related to dysfunction of membrane and membrane proteins, and current efforts on drug discovery. Major techniques used in membrane research will also be covered. The format will be a combination of lectures and discussion of primary literature. Students will be evaluated based on their class participation and performance at the final presentations. Instructors: Lee, Bennett, Kuehn, Rajagopal, and Yang

BIOCHEM 668 – RNA Biology (3 units) Graded
Instructor: Meyer
Days/Time/Location: T Th, 10:05–11:20 am, 148A Nan Duke

The major emphasis will be on reading and discussing primary research papers in depth. The course will explore new concepts in mechanisms of transcription, splicing, catalytic RNA, RNA modification, RNA editing, mRNA stability & translation. Each section of the course will consist of background lecture material and discussion of selected paradigm papers. Students will be asked to prepare presentations and discussions to demonstrate proficiency in the topics.

BIOCHEM 696 – Macromolecular crystallography (4 units) Graded
Instructor: Schumacher
Days/Time/Location: T Th, 1:25–3:25 pm, 252B Nan Duke

Course will be offered every other spring, alternating with BIOCHEM 695

Theoretical and practical principles of macromolecular X-ray crystallography. Topics covered include crystal symmetry, space group theory and determination, diffraction theory, a practical understanding of crystallization, X-ray intensity data collection and data processing, phase determination, refinement and model validation. Consent required - contact course director for permission number.

BIOCHEM 695 – Understanding NMR Spectroscopy (4 units) Graded
Instructor: Al-Hashimi
Days/Time/Location: TBD

Course will be offered every other spring, alternating with BIOCHEM 696

Course aimed at graduate students who have some familiarity with high-resolution NMR who wish to deepen their understanding of how NMR experiments actually 'work'. Introduces quantum mechanical tools needed to understand pulse sequences, with emphasis on obtaining good understanding of how experiments actually work. Course also covers advanced biomolecular NMR experiments that enable structural and dynamic characterization of biomolecules. For roughly half of course, students will be expected to follow online lectures that accompany course textbook, with class meetings emphasizing concepts, group discussion, and problem solving. Instructor consent required.

BIOCHEM 536 (CHEM 536) - Bioorganic Chemistry (4 Units) Graded
Instructor: McCafferty
Days/Time/Location: M W F, 10:20–11:10 am; A156 LSRC

Basic enzymology, mechanisms of enzymatic reactions, cofactors, oxidoreductases, C1 chemistry, carbon-carbon bond formation, carboxylation/decarboxylation, heme, pyridoxal enzymes, thiamine enzymes.

BIOCHEM/CBI 761 (CELLBIO 761) - Cellular Signaling Module I: GPCR Signaling and Disease (1 Unit) Graded
Instructor: Caron
Days/Time/Location: M W F, 8:45–9:35 am; 147 Nan Duke *(1st Third-Semester)*

This module will cover the basic mechanism of signal transduction through G protein coupled receptors (GPCR) and how they control a wide array of biological functions from vison to reproduction and are the largest targets of therapeutic interventions. How new concepts in our understanding of their signal transduction mechanisms is leading to the development of new and improve therapies for various disorder.

BIOCHEM/CBI 762 (CELLBIO 762) - Cellular Signaling Module II: Intracellular Signaling and Disease (1 Unit) Graded
Instructor: McDonnell
Days/Time/Location: M W F, 8:45–9:35 am; 147 Nan Duke *(2nd Third-Semester)*

This module will cover how ion channels and intracellular nuclear receptors control cellular functions mediated through transcription or calcium signaling to regulate physiological processes in health and disease.

BIOCHEM/CBI 763 (CELLBIO 763) - Cellular Signaling Module III: Growth Factor Pathway in Development and Disease (1 Unit) Graded
Instructor: Pendergast
Days/Time/Location: M W F, 8:45–9:35 am; 147 Nan Duke *(3rd Third-Semester)*

The focus of this module is on signaling pathways induced by extracellular factors that regulate growth, survival, and development, and their deregulation in disease including cancer. Among the pathways covered are those regulated by ligand-activated Receptor Tyrosine Kinases, Wnt/beta-catenin signaling, Notch signaling, and Hedgehog signaling.

OTHER POPULAR SPRING COURSES FOR BIOCHEMISTRY STUDENTS:

SBB 546S - Structural Biology and Biophysics Seminar (1 unit) Graded
Instructor: Oas
Days/Time/Location: M, 4:40–5:55 pm, 439 NanDuke

Each week a student presents a paper on their research. Attendance is open to all graduate students, faculty and postdoctoral students who have an interest in structural biology. Required of all SBB certificate students.

CBB 511 – Journal Club/Research in Progress (1 Unit)
Instructor: Schmidler
Days/Time/Location: F, 10:30–11:30 am; 4233 FFSC

A weekly series of discussions led by students that focus on current topics in computational biology. Topics of discussion may come from recent or seminar publications in computational biology or from

research interests currently being pursued by students. First and second year CBB doctoral and certificate students are strongly encouraged to attend as well as any student interested in learning more about the new field of computational biology.

CBB 540 (STA 613) – Statistical Methods for Computational Biology (3 Units) Graded
Instructor: Mukherjee
Days/Time/Location: T Th, 3:05–4:20 pm; TBA

Methods of statistical inference and stochastic modeling with application to functional genomics and computational molecular biology. Topics include: statistical theory underlying sequence analysis and database searching; Markov models; elements of Bayesian and likelihood inference; multivariate high-dimensional regression models, applied linear regression analysis; discrete data models; multivariate data decomposition methods (PCA, clustering, multi-dimensional scaling); software tools for statistical computing. Prerequisites: multivariate calculus, linear algebra and Statistics 611.

CBB 561 (COMPSCI 561) – Computational Sequence Biology (3 Units) Graded
Instructor: Gordan/Hartemink
Days/Time/Location: T Th, 3:25–4:20 pm; LSRC D106

Introduction to algorithmic and computational issues in analysis of biological sequences: DNA, RNA, and protein. Emphasizes probabilistic approaches and machine learning methods, e.g. Hidden Markov models. Explores applications in genome sequence assembly, protein and DNA homology detection, gene and promoter finding, motif identification, models of regulatory regions, comparative genomics and phylogenetics, RNA structure prediction, post-transcriptional regulation. Prerequisites: basic knowledge algorithmic design (Computer Science 532 or equivalent), probability and statistics (Statistical Science 611 or equivalent), molecular biology (Biology 118 or equivalent). Alternatively, consent instructor.

CELLBIO 730 - Stem Cell Biology (3 Units) Graded
Instructor: Poss, Kuo, Fox, Hogan
Days/Time/Location: T Th, 10:05–11:20 am; LSrC D243

The course is designed for first-year graduate students to learn the fundamentals of stem cell biology and to gain familiarity with current research in the field. The course will be presented in a lecture and discussion format based on the primary literature. Topics include: stem cell concepts, methodologies for stem cell research, embryonic stem cells, adult stem cells, cloning and stem cell reprogramming and clinical applications of stem cell research.

CMB 640 (UPGEN 640) - Quantitative Approaches to Biological Problems: From Cartoon Models to System Behavior (3 Units) Graded
Instructor: Lew & Di Talia
Days/Time/Location: T Th, 2:00–3:30 Pm; 437 Nan Duke

This class is aimed at biologists who want to gain an appreciation of how mathematical approaches can supplement experimental approaches. We will teach you how to convert cartoon diagrams to differential equations, and re-familiarize you with some basic concepts from math and physics that help us develop a better intuition of how the world works. Then we will discuss how quantitative approaches can yield insights into how control systems behave. The class will use calculus at an elementary level and an occasional computer simulation, but we will focus more on concepts and applications.

IMM 800 – Comprehensive Immunology (3 Units) Graded
Instructor: Qijing Li
Days/Time/Location: M W F 10:20–11:10 am; 321 Jones Bldg

An intensive course in the biology of the immune system and the structure and function of its major components. In sectioned lectures, we will have leading experts to discuss with you, in depth, the major

challenges, major discoveries, as well as major conflictions in listed areas of immunology. Specifically, we will focus on the evolution of our understandings: what was the original question, how it was approached and what is still missing to complete the picture. These lectures were largely split into three sections: T cell biology, B cell biology, and immune regulation. There will be three individual take-home exams and your final grade will be compiled with results from all three exams. This is a required course for students specializing in immunology. Consent of instructor required for registration.

MGM 552 – Virology (3 Units) Graded
Instructor: Cullen
Days/Time/Location: M W F, 3:20–4:10; TBA

Molecular biology of mammalian viruses, with emphasis on mechanisms of replication, virus-host interactions, viral pathogenicity, and the relationship of virus infection to neoplasia.

MGM 582 – Microbial Pathogenesis (3 Units) Graded
Instructor: Tobin
Days/Time/Location: M W F, 1:30–2:30, TBA

Modern molecular genetic approaches to understanding the pathogenic bacteria and fungi. Underlying mechanisms of pathogenesis and host-parasite relationships that contribute to the infectious disease process.

MGM 732 (UPGEN 732) – Human Genetics (3 Units) Graded
Instructor: Marchuk & Ashley-Koch
Days/Time/Location: T Th, 8:30–9:45 am; Physics 299

Topics include genetic mechanisms of disease (rare and common genetic risk variants, multi-factorial inheritance, epigenetics, cytogenetics), as well as disease-specific examples including neurogenetics, cancer genetics, pharmacogenetics, complex diseases and gene therapy. Lectures plus weekly discussion of assigned papers from the research literature. Prerequisites; University Program in Genetics 778 or equivalent, and graduate status or consent of instructor.

PATHOL 785 - Molecular Aspects of Disease (3 Units) Graded
Instructor: Bachelder, Abraham & He
Days/Time/Location: T Th, 8:30–10:25 am; TBA

This course is based upon the study of the background, investigative method and recent advances in understanding the molecular basis of selected diseases, with an in-depth focus on a small number of diseases where defects are known at genetic or molecular levels.

PATH 786 - Translational Aspects of Pathobiology (3 Units) Graded
Instructor: Devi
Days/Time/Location: W, 1:25–2:40 pm; TBA

Translational Research in Pathobiology is an integrated multidisciplinary course designed to provide students with the necessary tools to understand the principle components of the research processes involving patients or materials obtained from a human source. This course reflects the Department of Pathology's unique I ntegration of traditional pathology research with experimental therapeutics in an environment that seeks to bridge the basic sciences and clinical medicine.

PHARM 755 – Neurotoxicology (3 units) Graded
Instructor: Abou-Donia
Days/Time/Location: W, 1:25–3:15 pm, C144 LSRC

Adverse effects of drugs and toxicants on the central and peripheral nervous system; target sites and pathophysiological aspects of neurotoxicity; factors affecting neurotoxicity, screening and assessment

of neurotoxicity in humans; experimental methodology for detection and screening of chemicals for neurotoxicity.

SBB 682T – Advanced Physical Biochemistry (3 units) Graded
Instructor: Oas
Days/Time/Location: Contact course instructor for times & location.

Transient kinetics, computational methods, multidimensional NMR, x-ray crystallography, and thermodynamics of association. Prerequisite: Structural Biology and Biophysics or consent of instructor. Oas; Tutorial – contact Course Director for time & location.

Appendix II

Graduate Student Resources at Duke

The Graduate School

The overall mission of the Graduate School is to provide a research-based graduate training that will help you learn the analytical skills that will enable you to be future leaders in a wide variety of professions. Although many of our graduates enter academia, the education you will obtain here is intended to be applicable to any job that involves the discovery, creative application, and teaching of new knowledge. The Graduate School exists in large measure to support the research and educational missions of a faculty interested in the frontiers of knowledge, and, in so doing, to advocate for the primacy of scholarship throughout the University.

Graduate School Offices: 2127 Campus Drive, Box 90065
Durham, NC 27708
Web: http://gradschool.duke.edu
Contact: http://gradschool.duke.edu/contact

Office of the Dean

Dean's Message: Duke is an energetic and vibrant university at the forefront of graduate education. The Graduate School is central to the academic mission of the university, and our graduate faculty research is on the cutting-edge of knowledge in the various disciplines and programs represented in the school.

To come to Duke University for graduate study is to be immersed in the welcoming environment of an educational community dedicated to the pursuit and production of knowledge that will serve the broader society. At The Graduate School, we are committed to the success of our students, and we serve as an advocate for their intellectual development. We believe that the analytic and research skills formed and honed during graduate study are critical for success in a variety of professional contexts. We are committed to helping students think about and begin to shape their professional career trajectories from the moment they begin their graduate student careers at Duke.

We also know, however, that student success encompasses aspects of their lives beyond their academic work, and we believe that graduate study should be viewed as part of a well-rounded life experience. As such, we offer many programs to help support and enrich the lives of graduate students during their years at Duke.

Graduate study is, in many ways, an apprenticeship. To earn the right to become a colleague of your professors takes time, patience, a fierce commitment, and the willingness to make many personal sacrifices. The path ahead might seem daunting, but at the Duke University Graduate School, among your fellow graduate students, and within the broader community of Durham, you will find the people, commitment, support, and resources to help you succeed and enjoy the journey.

Dr. Paula D. McClain
Dean of the Graduate School & Vice Provost
Senior administrator in the Graduate School. Responsible for all policies and procedures in the Graduate Programs.
Tel: (919) 681-1560

Graduate School Organization Chart:
http://gradschool.duke.edu/sites/default/files/documents/duke_graduate_school_org_chart.pdf

Graduate Student Affairs

The central mission of the Office of Graduate Student Affairs (GSA) is to enhance the quality of graduate student life by working closely with individual students, student organizations, faculty, and other campus offices. The aim is to provide a broad array of programs on issues related to graduate student life, such as health, safety, housing, mentoring, and professional development. GSA also has a particular role in establishing support services that address the specific needs of students from different ethnic backgrounds, international students, gay and lesbian students, students with disabilities, women, and other groups. This office is committed to helping students become active participants in the Duke University community. You can consult us by telephone at 684-2056. Goals of the Student Affairs Office:

- To assess the academic, financial, social, personal, and cultural needs of graduate students
- To develop programs that encourage faculty and student participation in student affairs
- To assist departments in creating supportive environments for students
- Support departments in identifying & recruiting applicants from traditionally underrepresented groups

Web: http://gradschool.duke.edu/student-life
Contact Email: grad-gsa@duke.edu

Office of Academic Affairs

The Office of Academic Affairs in the Graduate School has primary responsibility for academic and program administration, including the following:

- to define and interpret all academic policies, procedures, and regulations of the Graduate School, particularly those involving time limitations, forming examination/advisory committees, and all disciplinary matters;
- to establish criteria for any new academic degree or certificate programs with the Executive Committee of the Graduate Faculty (ECGF);
- to coordinate all internal and external program reviews in order to ensure academic quality and maintain accreditation;
- to provide training in Responsible Conduct of Research (RCR) for all doctoral students;
- to offer courses, workshops, and programs in Teaching and Technology through collaborations with the Center for Instructional Technology;
- to manage the English for International Students (EIS) program;
- to provide general academic advising for students who seek help from someone outside their degree program;
- to participate in national initiatives and/or research projects in order to identify 'best practices' in graduate education.

Web: http://gradschool.duke.edu/academics/programs.php
Graduate School Student Handbook: http://gradschool.duke.edu/node/538
Graduate School Academic Policies and Forms:
https://gradschool.duke.edu/academics/academic-policies
Childcare Subsidies: https://gradschool.duke.edu/financial-support/child-care-subsidy

Dr. John Klingensmith
Associate Dean for Academic Affairs
Responsible for administration of the academic regulations of the Graduate School, particularly those involving time limitations, forming examination/advisory committees, and all disciplinary matters. He

also serves as general academic advisor for students who feel the need to talk to someone outside their own graduate degree programs.

Tel: (919) 681-1559 or john.klingensmith@duke.edu
Office Hours: Monday – Thursday, 1:00PM – 5:00PM

Offices of Budgets, Finance & Administration

The **Office of Finance & Administration** is responsible for all aspects of Graduate School financial management, admissions, student record keeping, degree requirement auditing, and other administrative functions such as human resource management, payroll, and facilities management.

Web: http://gradschool.duke.edu/financial_support/index.php

Shanna Fitzpatrick
Associate Dean for Finance and Administration
Develops, implements and communicates all Graduate School financial operations; responsible for student record maintenance and enrollment reporting; serves as liaison between University departments and external entities regarding financial and administrative policies and procedures.

Tel: (919) 681-3249 or shanna.fitzpatrick@duke.edu

The **Office of Budgets & Finance** oversees the payments of all institutional fellowship awards to graduate students, as well as payments from federal financial aid programs and national fellowships. This office strives to help students obtain their education with as little financial stress as possible while adhering to the guidelines and policies set forth by the University, government agencies, and funding institutions. The office operates with an open-door policy and places a high value on customer service to our students.

Web: http://gradschool.duke.edu/financial-support
Contact Email: grad-finaid@duke.edu

Iryna Merenbloom, *Assistant Dean, Budgets and Finance*
Directs financial operations; oversees development and implementation of financial policies, processes and technologies; manages daily operation and staff supervision; prepares and monitors administrative and financial aid budgets and expenditures.

Tel: (919) 684-1555 or iryna.merenbloom@duke.edu

Caroline Morris, *Fellowsip Coordinator*
Manages Manages Graduate Fellowsip application and selection processes and maintains WebApp & payroll processing. Tel: (919) 681-4665 or caroline.morris@duke.edu

Office of Admissions

The Graduate School Office of Admissions develops the policies and procedures by which applications to all graduate departments are processed. This office communicates with applicants regarding requirements, application status, and final admissions decisions and also handles issues related to the preparation of visa documents for incoming international students.

Web: http://gradschool.duke.edu/admissions
Contact Email: grad-admissions-center@duke.edu
Contact Form: http://gradschool.duke.edu/contact-admissions-form

Anneli Richter
Associate Dean, Graduate Admissions
Manages daily operations of the Admissions Office, including workflow, staff supervision and implementation of new technology to the admissions process; responsible for set-up, monitoring and data integrity of automated systems; assists with upgrades, hires and trains additional seasonal staff, and provides ongoing admissions analysis and reports.
Tel: (919) 684-3913 or anneli.richter@duke.edu

Nancy Wines, *Admissions Specialist*
Manages image capturing process; performs thesis and dissertation format checks; serves as admissions liaison with graduate departments in business administration, basic medical sciences, economics, and various others; assists incoming international students with Visa processing.
Tel: (919) 668-0424 or nancy.wines@duke.edu

Stacy Torian, *Communications Specialist*
Develops and edits admissions communications related to the application process; communicates final admissions decisions to applicants; matriculates admitted students; performs thesis and dissertation format checks.
Tel: (919) 684-5737 or stacy.torian@duke.edu

Office of the University Registrar

The Duke University Office of the University Registrar's mission is to facilitate the educational process by assisting students, faculty, and staff by providing:

- a welcoming and encouraging service environment, in person and via other modes of contact;
- accurate and timely processing of data related to course offerings, registration and academic records;
- support and advice regarding academic policies and procedures;
- data to a variety of constituents, in support of the academic decision making process;
- security and privacy for the university's academic records, including advice and training for faculty and staff on privacy issues;
- leadership in the areas of technological development as related to student administrative services and systems.

The Office of the University Registrar supports the overall educational goals of the university by providing these critical components in the academic support structure. We act as a "behind the scenes" facilitator for faculty, students, and staff as they pursue the academic goals of the university.

Web: http://www.registrar.duke.edu/
Location: 1121 West Main Street, Suite 1200, Bevan (Coca-Cola) Building, Durham, NC 27701
Map: http://map.duke.edu/?x=530&y=-351&z=2&w=1030&h=600&new.x=903&new.y=362
Contact: (919) 684-2813 or registrar@duke.edu

Bursar's Office

The Bursar's Office serves the student community by assisting students with their bursar accounts and by functioning as a depository for the University's departments. The Bursar's Office mails statements to students on a regular basis, manages the collection of the student receivables, and records departmental deposits.

Web: http://finance.duke.edu/bursar/

Location: American Tobacco Campus, Washington Bldg, Suite 1000, 324 Blackwell Street
Box Number 104145, Durham, NC 27708

Contact: (919) 684-3531 or bursar@duke.edu (Office Hours: 8am-5pm, Mon-Fri.)

Map of the American Tobacco Campus: http://finance.duke.edu/resources/contacts/ATCCampusMap.pdf

Appendix III

Certificate in College Teaching (CCT)

This university-wide teaching certificate program, the Duke University Graduate School *Certificate in College Teaching* (CCT), is for enrolled PhD students in any department or program of study. This program makes use of departmental training and resources as well as Graduate School programming. The Certificate in College Teaching will appear on the transcript of PhD students who complete its requirements as an officially endorsed Duke University Graduate School certificate; it is being offered in order to recognize and validate professional development activities undertaken by PhD students and add competitiveness and value to PhDs awarded to Duke graduate students. The program requirements take about a year to complete, but that may vary as opportunities for gaining teaching experience vary across departments. CCT work may be done alongside other classes, research, or work on a dissertation, and should not significantly interfere with the timely completion of any of these. After applying to the CCT program, the program director will meet with the student to go over the requirements and a timeline for completing them. Additional information can be found on the following website: http://gradschool.duke.edu/professional-development/programs/certificate-college-teaching

Certificate in College Teaching (CCT) Requirements

1. **Coursework**
   Participants should successfully complete two courses in college teaching. This can include any combination of Graduate School and/or discipline specific pedagogy courses offered by a Department or Program. You can complete the coursework requirement at any time, either before or after enrolling as a CCT participant. Ideally, you would take the courses immediately before or in conjunction with your teaching experience. Course site: http://gradschool.duke.edu/node/545

2. **Teaching Experience & Observation** (http://gradschool.duke.edu/node/552)
   Participants should have at least one semester in a formal teaching role that takes place **after** enrolling in the CCT program (i.e. previous teaching experience is not applicable.) A formal instructional role can include being the instructor of a class, or leading a discussion, lab or recitation section that meets regularly throughout the semester with you as the primary leader/facilitator of those meetings. If your role is that of a guest lecturer in a class, the instructional contact should be no less than four contact hours, spread out through the term (e.g., two guest lectures in the week a lecturing professor is at a conference would not qualify.) TAships limited to grading, office hours and/or administrative tasks are not considered a formal instructional role. With the approval of the CCT Program Director, other types of teaching experience may be used to fulfill this program requirement.

3. **Online Teaching Portfolio**
   The online teaching portfolio is completed after the other CCT requirements, which will provide you with materials for the portfolio. Your portfolio should be appropriate for use in a job search. The online teaching portfolio can be created in any web authoring tool the participant is comfortable using (Word Press, Dreamweaver, Google Sites, etc.). It may include a current CV, a teaching statement and other materials as appropriate to the student's discipline. A number of Duke PhD student portfolios can be found on the GS 760 website.

Appendix IV

Individual Development Plan (IDP)

An Individual Development Plan (IDP) should be initiated by the student in the 2nd year, in preparation for the 3rd year SoM RCR-Career Development Session. 3rd year students must have an IDP by the spring of their 3rd year. We suggest that students use the AAAS online tool (http://myidp.sciencecareers.org/) to assess their areas of interest and use it to develop an initial plan. The plan is expected to change over their time as a graduate student. Students must draft a plan or an outline of a plan and select and contact a Career Planning Faculty Mentor. Students are encouraged to identify a Career Mentor who is very familiar with their skills, personality, and interests (i.e. their Thesis Advisor or Committee member). **Each year the student must meet and consult with their Career Mentor either individually, or at their annual meeting with their committee regarding their IDP.** The contents of these meetings may be held confidentially, at the request of the student, however the fact that the meeting took place must be reported to the BGSO. In many cases, students find it very beneficial to discuss their IDP (or elements of it) at their Annual Committee meeting.

The objectives of IDPs are to encourage students to:

1) Reflect on their training and career goals
2) Self-assess their skills and competencies
3) Discuss their goals and competencies with their mentor
4) Develop short- and long-term training goals

Additional sites with IDP information for students:
http://www.sciencemag.org/content/337/6099/1149.full
http://www.nigms.nih.gov/Training/StrategicPlanImplementationBlueprint/IndividualDevelopmentPlans.htm
https://medschool.duke.edu/education/degree-programs-and-admissions/office-biomedical-graduate-education/professional-development

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Graduate Student Individual Development Plan

(created by the Duke University Graduate Advisory Council)

Graduate students benefit from reflecting on their career aspirations, assessing their strengths and weaknesses, and formulating a plan to better prepare themselves for future training and the job market. The questions below offer a possible rubric for self-assessment and planning.

1) What are your career goals?

2) What are your strengths and weaknesses?
   - Ability to design and plan experiments to address questions and test models
   - Technical/bench skills
   - Ability to analyze data and interpret results
   - Ability to work independently

- Ability to complete projects
- Command of the literature in your field
- Creativity and vision
- Writing skills
- Oral communication skills
- Personnel management skills
- Teaching skills

3) How can you hone your skills for the career option(s) you seek?

4) What are your specific 1-month goals, 6-month goals, and 1-year goals, in terms of experiments, learning analysis strategies, writing papers, writing grants, attending meetings, teaching, mentoring undergraduates, etc?

Students and PIs should use this document or a similar customized document or one of the longer IDP templates (such as the the AAAS online tool (http://myidp.sciencecareers.org/) as a springboard to discuss how to enhance training and preparation for the students' careers of choice. This document may well evolve to reflect that discussion and will likely evolve over the years of graduate training.

Individual Development Plans (IDPs) for Graduate Students

(created by FASEB)

Individual Development Plans (IDPs) provide a planning process that identifies both professional development needs and career objectives. Furthermore, IDPs serve as a communication tool between individuals and their mentors. While IDPs have been incorporated into performance review processes in many organizations, they have been used much less frequently in the mentoring of graduate students and postdoctoral fellows. An IDP can be considered one component of a broader mentoring program that can be instituted by all types of research institutions.

Goals - Help individuals identify:

-- Long-term career options they wish to pursue and the necessary tools to meet these

-- Short-term needs for improving current performance

Benefits: Graduate students will have a process that assists in developing long-term goals. Identifying short-term goals will give them a clearer sense of expectations and help identify milestones along the way to achieving specific objectives. The IDP also provides a tool for communication between the graduate student and their faculty mentor.

Outline of IDP Process: The development, implementation, and revision of the IDP require a series of steps to be conducted by the graduate student and their mentor. These steps are an interactive effort, and so both the graduate student and the mentor should participate fully in the process.

BASIC STEPS

Graduate student …	Mentor …
1) Conduct a self-assessment	Become familiar with available opportunities
2) Survey opportunities with mentor	Discuss opportunities with graduate student
3) Write an IDP, share IDP with mentor & revise	Review IDP and help revise
4) Implement the plan	Establish regular review of progress
5) Revise the IDP as needed	Help revise the IDP as needed

Execution of the IDP Process

… for Graduate Students

Step 1. Conduct a Self-Assessment.

- Assess your skills, strengths, and areas that need development. Formal assessment tools can be helpful. (Examples can be found in *Resources: Self Assessment* at the end of this document).
- Take a realistic look at your current abilities. This is a critical part of career planning. Ask your peers, mentors, family and friends what they see as your strengths and your development needs.
- Outline your long-term career objectives. (For useful information see *Resources: Career Opportunities* at the end of this document).

Ask yourself:

-What type of work would I like to be doing?
-Where would I like to be in an institution or organization?
-What is important to me in a career?

Step 2. Survey Opportunities with Mentor.

- Identify career opportunities and select from those that interest you.
- Identify developmental needs by comparing current skills and strengths with those needed for your career choice.
- Prioritize your developmental areas and discuss with your mentor how these should be addressed.

Step 3. Write an IDP.

The IDP maps out the general path you want to take and helps match skills and strengths to your career choices. It is a changing document, since needs and goals will almost certainly evolve over time as a graduate student. The aim is to build upon current strengths and skills by identifying areas for development and providing a way to address these. The specific objectives of a typical IDP are to:

- Effective dates for the duration of your graduate training.
- Identify specific skills and strengths that you need to develop (based on discussions with your mentor).
- Define the approaches to obtain the specific skills and strengths (e.g., courses, technical skills, teaching, supervision) together with anticipated time frames.
- Discuss your draft IDP with your mentor.
- Revise the IDP as appropriate.

Step 4. Implement Your Plan.

The plan is just the beginning of the career development process and serves as the road map. Now it's time to take action!

- Put your plan into action.
- Revise and modify the plan as necessary. The plan is not cast in concrete; it will need to be modified as circumstances and goals change. The challenge of implementation is to remain flexible and open to change.
- Review the plan with your mentor regularly. Revise the plan on the basis of these discussions.

… for Mentors

Step 1. Become familiar with available opportunities.

By virtue of your experience, you should already have knowledge of some career opportunities, but you may want to familiarize yourself with other career opportunities and trends in job opportunities (refer to sources such as National Research Council reports and *Science* career reviews; see also *Resources: Career Opportunities* at the end of this document).

Step 2. Discuss opportunities with graduate student.

This needs to be a private, scheduled meeting distinct from regular research-specific meetings. There should be adequate time set aside for an open and honest discussion.

Step 3. Review IDP and help revise.

Provide honest feedback - both positive and negative - to help the graduate student set realistic goals. Agree on a development plan that will allow the graduate student to be productive in the laboratory and adequately prepared for their chosen career.

Step 4. Establish regular review of progress.

The mentor should meet at regular intervals with the graduate student to assess progress, expectations, and changing goals. On at least an annual basis, the mentor should conduct a performance review designed to analyze what has been accomplished and what needs to be done. A written review is most helpful in objectively documenting accomplishments.

Resources

Self Assessment

Fiske, P. S. (2001). Put Your Science to Work: The Take-Charge Career Guide for Scientists. Washington, D.C.: American Geophysical Union.
Bolles, R. N. (2002). What Color is your Parachute? A Practical Manual for Job-Hunters and Career-Changers. Berkeley, Calif.: Ten Speed Press.

The Postdoc Experience

Kern, S. (2002). Fellowship Goals for PhDs and MDs: A Primer on the Molecular Biology Postdoctoral Experience. *Cancer Biology and Therapy* 1: 74-75.
National Academy of Sciences. (2000). Enhancing the Postdoctoral Experience for Scientists and Engineers: A Guide for Postdoctoral scholars, Advisers, Institutions, Funding Organizations, and Disciplinary Societies. Washington, D.C.: National Academy Press.

Academic Career Opportunities

American Association for the Advancement of Science. Science's Next Wave. [On-line]. Available: http://sciencecareers.sciencemag.org/
The Scientist. Archives: Profession. [On-line]. Available: http://www.the-

scientist.com/fragments/careers/careers_about.jsp
The Chronicle of Higher Education. Career Network Advice Columns. [On-line]. Available: http://chronicle.com/jobs/
Federation of American Societies for Experimental Biology. (1997). Graduate Education: Consensus Conference Report. Bethesda, M.D. FASEB. [On-line]. Available: http://opa.faseb.org/pages/Publications/educationreport.htm
Heiberger and Vick, eds. (1996). The Academic Job Search Handbook (2nd ed.). University of Pennsylvania Press.
Reis, R. M. (1997) Tomorrow's Professor. Preparing for Academic Careers in Science and Engineering. New York: IEEE Press. 1997.
On-line Listserv: Tomorrow's Professor. Available: http://ctl.stanford.edu/Tomprof/index.shtml
Barker, K. (2002). At the Helm: A Laboratory Navigator. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory Press.

Non-Academic Careers

Robbins-Roth, C. ed. (1998). Alternative Careers in Science. Leaving the Ivory Tower. San Diego, Calif.: Academic Press.
Kreeger, K. Y. (1999). Guide to Nontraditional Careers in Science. London: Taylor & Francis Group.