2024-25

Graduate Program Handbook

Department of Biomedical Engineering | UVA

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1. INTRODUCTION

1.1 WELCOME TO THE DEPARTMENT OF BIOMEDICAL ENGINEERING (BME)

We welcome you to the Department of Biomedical Engineering. Our mission is to transform healthcare and medicine by creating and disseminating knowledge and technology, giving hope to patients, and training the next generation of biomedical engineering leaders. We hope that this student handbook will help you accomplish this goal, and make your time here both stimulating and rewarding.

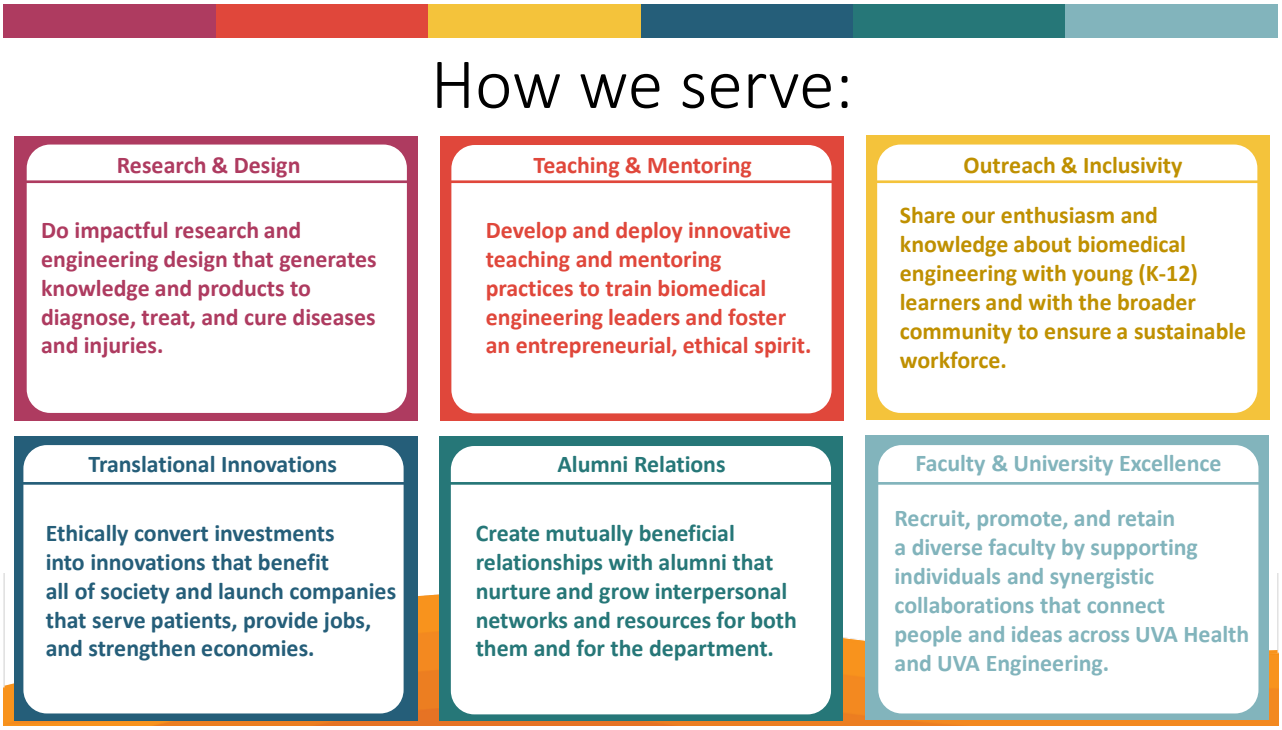
Our program has a long-standing commitment to teaching and research education. Faculty research focuses in cardiovascular bioengineering, biomedical & molecular imaging, cellular & molecular bioengineering, cancer engineering, tissue engineering & biomaterials, musculoskeletal bioengineering, and systems biology & computational bioengineering. This diversity highlights the field of biomedical engineering as an exciting multidisciplinary engineering profession.

The BME Department leads several partnerships between the Schools of Engineering and Medicine and the College of Arts and Sciences. Faculty in the department collaborate closely with researchers in the Cardiovascular Research Center, Cancer Center, and Departments of Radiology, Surgery, Cardiology, Center for Public Health Genomics, and many other centers and departments across Grounds. The integration of a wide spectrum of engineering and medical research in the BME department provides the foundation for a leadership position in BME research and education at the University of Virginia and in the nation.

Graduate school is a place to explore the boundaries of the possible and develop your scholarship potential to the highest level. This is the time to develop your independent thinking, seize the opportunity to interact with a wide range of talented student and faculty colleagues, enjoy the riches of the university environment, and be creative in everything you do. We welcome you as a partner in learning and as a colleague in BME.

Shayn Peirce-Cottler, Ph.D.
Professor and Chair
Department of Biomedical Engineering

Don Griffin, Ph.D.
Graduate Program Director
Department of Biomedical Engineering



Statement of Respect:

At the University of Virginia, we are dedicated to creating a respectful, inclusive, and welcoming living, learning, and working environment for all faculty, staff, and students. Discrimination, harassment, and retaliation not only violate University policy and federal and state law but also contradict our deeply held values of diversity, inclusion, and respect. Such conduct will not be tolerated at the University. Our diverse, talented workforce is what enables us to be the best we can be – to offer top-notch teaching, research, public service, and patient care to all community members.

-UVA Office for Equal Opportunity and Civil Rights

1.2 Overview of Handbook and Department Personnel

This handbook has been prepared to assist you to make the transition into our graduate program and to serve as a resource for you during your pursuit of a graduate degree. The Graduate Record of the University of Virginia provides a comprehensive guide of your rights and responsibilities as a graduate student and can be found at http://records.ureg.virginia.edu/index.php.

In addition to the handbook, there are a number of "people behind the scenes" who help the day-to-day work of the department go forward smoothly, and who are also able to serve as resources for you.

Name	Role	Duties
Lloyd McMahon lpm2e@virginia.edu	Lab Specialist /IT Assistant	ME program project advisor; IDEAS lab support; Manage dept. equipment and facilities, equipment repair, back-up IT support
Henry Pritchard BME-ITSupport@virginia.edu	Information Technology	The department's computer support technician
Tracy Burcin Garrett Tomaine Victoria 'Tori' Pullin bme-finance@virginia.edu	Finance Team in BME bme-finance@virginia.edu	Expense reports; Purchase Requisitions; Supplier Invoice Requests Travel Reimbursements Pcard transactions Accounting Adjustments
Connie Pace clp2uh@virginia.edu	Senior Grants and Contract Administrator	Assist SoM faculty and students with grant proposals and submissions.
Taylor Halstead tmm7yp@virginia.edu	Executive Assistant to the Chair	Dept Chair Executive Assistant; Front desk reception management, room reservations, special visitor arrangements, departmental logistics
Gina Talley mdr2jg@virginia.edu	Special Events, and HR;	Supports special events coordination for the dept. and non-grad HR
Crystal Lamm Cds5y@virginia.edu	Unit Administrator	Oversees Business Operations of department Manages BME Office Staff & Department Budget
Kim Fitzhugh Kaf5r@virginia.edu	Graduate Program Manager	Manages graduate programs: including all milestones, funding, and referrals / resource support as needed. SOM BIMS Program Coordinator
Karen Sleezer Kas2ue@virginia.edu	Undergrad Program Coordinator	Manages undergraduate programming, course management
Hannah Moore ham2t@virginia.edu	Associate Director of Coulter Translational Projects	Support and manage Coulter funds and annual Coulter fellowships and awards

Kitter Bishop Klb4f@virginia.edu	Public Relations	Manages website, social media, department public relations, and communications.

1.3 OVERVIEW OF DEGREE EXPECTATIONS

Biomedical Engineering represents an interface between engineering, medicine, and science. Consequently, it must draw on the full range of knowledge accumulated in the life sciences, medicine, the physical sciences and mathematics, and engineering. Technological development as well as the implementation of concepts, methods, and products in biomedical engineering requires competency in both the fields of engineering and medicine.

The ME, MS, and PhD degrees form the core of the BME graduate educational program. These degrees have the broad goal of educating students with the knowledge and skills needed to succeed in careers in research and development. Students intending to pursue a PhD in Biomedical Engineering are encouraged to apply to do so at the beginning of their studies at Virginia. *They may proceed directly to a PhD or earn a Master of Science degree along the way*. Successful completion of these degrees will require that a student meet the following expectations, in addition to the formal degree requirements:

1. **Completion of original research and/or design project**. Students will complete a research project under direction of their faculty advisor. The end goal of this work should be experimental or simulation results, methods, and analysis which are of a level of quality sufficient for presentation in a refereed publication. To achieve this end, students will need to make a novel contribution to their respective fields. Students should always be aware that research is not a job performed for the benefit of his or her faculty advisor, but rather is an integral part of graduate education. As such, students must take initiative and responsibility for the success of their research.

2. **An ability to think critically**. Successful students will be able to evaluate the validity of new results and ideas. They will be able to make precise statements about limitations of experimental methods and identify the weaknesses of new and existing hypotheses. They will be able to identify the next step in their research and design experiments to test their hypotheses and/or designs.

3. **An ability to work collaboratively.** As the BME department is an integrated member of both the School of Engineering and the School of Medicine with broad access to researchers across disciplines, students will understand the value of a myriad of fields, values, and perspectives and how these new ideas may integrate into the students' own primary research focus. Along the way, students will strengthen their own skills in leadership, learning, and conflict management. Utilizing all of the resources available, students will learn when to reach out for extra support, and when to offer extra support to peers. Collaboration comes in many forms, including working with advisors, other faculty, staff, colleagues, and mentees.

4. **Critical knowledge of the core literature in their field**. Students should know the central literature in their field. They should be aware of the important implications and possible limitations of existing knowledge.

5. **Excellent oral and written presentation skills**. Success in both academics and industry requires clear communication of ideas to technical and lay audiences. Students should use graduate school as an opportunity to hone presentation skills.

6. **Completion of formal course requirements**. Course work provides students with basic knowledge, abstract reasoning, and problem-solving skills central to the field of Biomedical Engineering. In addition, advanced courses in the School of Engineering and Applied Science and in the School of Medicine offer knowledge and skills that can be applied to specialized areas of research.

Course Expectations:
All graduate students in the BME Department will complete their core course requirements and electives- chosen in consultation with advisors and/or committee- with a minimum of a 3.0 GPA.

- Graduate students will note that graduate level courses are designed around knowledge development. When this is successful, grades will follow. Any discussions with instructors will focus on course constructs rather than grades.

- Students having trouble in any given course are urged to discuss their difficulties in knowledge acquisition or comprehension with the instructor and advisor early on and as soon as difficulty is noted.
- No grade lower than a C in any class will count toward the requirements for this graduate degree. Hence, if a student earns a grade lower than a C, he/she/they must repeat the course and earn a C or better for that course to count toward their degree program.
- Undergraduate courses and courses taken on a Credit/No Credit basis may not be used to meet requirements for a graduate degree. Students who earned a grade of Credit (CR) under the UVA COVID-19 Credit/General Credit/No Credit grading option in Spring 2020, Fall 2020, J-Term 2021, and Spring 2021 that would have otherwise counted toward curricular, major, and graduation requirements will continue to do so, but such grades are not factored into a student's GPA.
- Note that if a student's cumulative GPA drops below 3.0 in <u>one semester,</u> they will immediately be put on Academic Probation by the Engineering School.
- Students will have <u>only one additional semester</u> to bring their cumulative GPA above 3.0, or will be dismissed from the graduate program.

Incomplete Grades:

Incomplete grades are possible, and may be helpful in certain events. The following procedures must be followed:

- Prior to the last ***week*** of class, students must initiate the request for an IN and secure the instructor's approval in writing via email.
- The student must also secure permission from their advisor.
- Final permission must be requested of the Graduate Program Director/Committee.
- If an incomplete is approved, a timeline must be developed with the instructor and advisor which details work to completion for the course.
- This timeline will serve as a working guide, and must be forwarded to the Graduate Studies Director for final approval, and the Graduate Coordinator for documentation within the student's file.
- On-going communication between student and instructor is viewed as critical, and a core component in developing workforce skills. The timeline may be amended as needed and agreed upon by all parties involved.
- Failure to follow this agreed upon timeline, and *failure to communicate any difficulties faced* in following the agreed upon guide, will be considered a failure in completion of the course, and the grade earned to date will be entered.
- If the course is not completed by 200 days from the last day of when the course officially ended, the grade will automatically convert to an "F", as per policies within the Engineering School and UVA.

Research/TA Grades:

Masters of Science and Pre-Comp PhD students will sign up for BME 8999 credits. Post-Comp PhD students will sign up for BME 9999 credits under their mentor's supervision. Students who are performing TA duties- whether to satisfy academic requirements, or as service to the department- will sign up for 1 credit of BME 8900.

- Grades of S indicate the student has performed their research/TA duties satisfactorily for that term or session.
- A single semester with a "U" grade indicates that the student is lacking- whether in knowledge, effort or initiative- and should seek greater guidance from their advisor/supervisor.
- Sequential semesters with a "U" grade are an indicator that the student is failing to progress in the graduate program.
- Consequently, students should understand that two consecutive semesters with a "U" grade **may** release the advisor and the department from obligation to continue to fund the student.
- The graduate program director will be notified by faculty advisors of "U" grades.
- Grades of U ***will not*** satisfy the TA requirement for PhD students.

6. **Failure to progress through the degree program**. When a student fails to progress in their degree program, as determined by the Graduate Program Director, the student will be dismissed from the graduate program.

- Failure to progress is defined by the student' failure to progress in research, coursework, teaching (TAship), and/or a combination thereof.
- If a student fails to progress, this will be brought to the attention of the Graduate Program Director (or Departmental Senior Advisor) by the student's advisor and/or PhD or MS Committee member(s), and the specific points will be detailed to the student in writing.
- The Graduate Program Director (or Departmental Senior Advisor) will meet with the student and their advisor to discuss the evidence of the student's failure to progress, as well as the reasons why student has failed to progress.
- The Graduate Program Director (or Departmental Senior Advisor) will decide if there is ample evidence to support that the student has failed to progress.
- In this event, the student must leave the program without a degree.
- Failing to progress may be evidenced by receiving a grade of "unsatisfactory" (U) in research and/or TAship.
- Decisions to discontinue funding or to release students from the department are made in consultation with the advising faculty member, program director, and department chair, but may also include core course instructors as well as others who might inform the decision.
- At the discretion of the advisor and the Graduate Program Director (or Departmental Senior Advisor), if the student was in the PhD program, they may be given the option to write and defend a Masters Thesis and earn their MS degree, but having this option is not a guarantee.
- Additionally, if the student feels they can improve their progress by switching to another lab, the student may petition the Graduate Program Committee to stay in the program, but only if the student identifies a new advisor who is willing to support that student (e.g., financially, if the student is in the PhD program).
- Note that a student can be asked to leave a lab even if they are progressing at a normal rate through the degree program (see §2.2.1 below).

In addition to the above outlined curriculum and guidelines, students at the University of Virginia are subject to the University's academic, financial, and non-academic rules and regulations.
https://uvapolicy.virginia.edu/policy/PROV-001
Students are also subject to the academic policies of the School for Engineering and Applied Sciences. The information contained herein and any other information conveyed to students is subject to change at any time by the authorities responsible for making these rules and regulations. The University reserves the right to suspend, enforce the withdrawal of, or expel a student who violates the University's Standards of Conduct or whose academic standing is, in its judgment, unsatisfactory. In addition, the University will automatically enforce the dismissal of a student certified by the Honor Committee to be guilty of a breach of the Honor System, and, where applicable, will consider revocation of a degree already conferred.

7. **Medical leave of absence**. It is possible at any point in their graduate training for a student to take a Medical Leave of Absence (typically 3-6 months), which is unpaid. The student must discuss this decision (but not the medical causes underpinning it) with their advisor and the Graduate Program Director before making this decision. ***There is no guarantee that when the student returns from Medical Leave funding will still be available to support the student.*** Therefore, in addition to obtaining approval from the Engineering School to return from Medical Leave, the student must also obtain approval from their faculty advisor and the BME Graduate Program Director in order to be able to return from Medical Leave. The Student Health Insurance coverage remains in effect until it's normal expiration date, but any leave of absence will impact a student's ability to access care via UVA Student Health.

2. EDUCATIONAL PROGRAMS AND REQUIREMENTS

2.1 PROGRAM ADMINISTRATION

Following is a list of committees designated to advise you on all aspects of BME graduate education. The committee members, your advisor, and the Department Chair are all available for consultation. A complete listing of committees and their members is included in Appendix III.

2.1.1 GRADUATE ADMISSIONS COMMITTEES

a. Recruits students to apply and evaluates admission applications.

b. Recommends new graduate students for admission and financial support.

2.1.2 GRADUATE PROGRAM COMMITTEE & GRADUATE PROGRAM DIRECTOR

a. Sets the ME, MS, and PhD requirements and approves programs of study.

b. Formulates and assesses the course requirements for the degrees of ME, MS, and PhD.

c. Oversees the graduate curriculum (e.g., approves new courses)

d. Nominates students for awards.

e. Provides mentoring and guidance for newly admitted graduate students and advises all PhD students (along with their MS Committee or PhD Committee) concerning the MS or PhD programs, including the announcement of the defense of the proposal and dissertation.

f. Validates and approves results of all relevant examinations (qualifying exams, dissertation proposals, master's theses, and dissertation defenses).

g. Processes administrative forms such as **Plan of Study, EEE proposals,** and **Doctoral Advisory Committee**.

h. Decides when students are not progressing through the program and excuses students from the degree program when necessary.

2.2 MENTORING POLICY

2.2.1 FACULTY ADVISING FOR MS AND PHD STUDENTS

Faculty advisors (usually the research project advisor) provide guidance to students on structuring their programs of study, career goals, identifying learning opportunities, and carrying out research of mutual interest. It is expected that advisors and students meet regularly to discuss progress. Additionally, PhD students are required to meet annually with their advisors to fill out and discuss the **Individual Development Plan.** Documentation summarizing the outcomes of the IDP meeting is to be submitted by the advisor to the Graduate Student Coordinator by Jan 31st of each year. An annual IDP is recommended, but not required, for MS students.

Change in PI/Advisor. BME views the mentor-mentee relationship as a mutual commitment- built on respect- nurtured within the department community, and requiring on-going communication and feedback. While it is never optimal when these relationships break down, we recognize the need to grow and move on. Students must also understand this lab-changing ***is not without risk.*** At the earliest signs of a poor fit, students and/or PIs are encouraged to reach out to one or more of the support systems available:

- **Jason Papin**- ***Senior Advisor to the Graduate Program***, and a neutral party who can frequently help problem solve and reframe difficulties into more manageable scenarios.

- **Faculty Advocate** if the student signed up for one at matriculation.
- **Kim Fitzhugh**- ***Graduate Program Manager*** who is skilled at helping students understand and access the myriad of resources at UVA.
- **Don Griffin**- ***Graduate Program Director*** who will help clarify policies and expectations, and is available to help problem-solve.
- **Shayn Peirce-Cottler**- ***Chair of BME*** who is ultimately invested in the continued success of all teams in BME and able to problem-solve and help identify creative solutions.
- **Amy Clobes**- *Assistant Dean of Graduate Affairs* who will help clarify School of Engineering level policies and expectations and is available to students to help problem-solve.
- **The Office of UVA Ombuds.** Homepage | University Ombuds (virginia.edu) "if You don't know where to go for help, you've been there, done that, and gotten nowhere, or you are reluctant to go through normal channels for assistance."

In the event that either the advisor or student (or both of them) feels that the student should no longer remain in the lab of the advisor, they each have the autonomy to make that decision in consultation with the Graduate Program Director or Departmental Senior Advisor.

Provost Policy on Graduate Student disciplinary issues

For any type of graduate assistantship, the supervising faculty member or the department chair will notify the graduate assistant in writing of any decision that affects the graduate student's academic or assistantship status. This includes advance notice of evaluation procedures and a summary of the evaluation.

The graduate assistantship may be suspended or terminated if the supervising faculty member or department chair has cause. Stated causes for termination include, but are not limited to: professional incompetence, unacceptable performance after due notice, unethical or unlawful conduct, misconduct that interferes with the graduate student's capacity to perform the responsibilities of the graduate assistantship effectively, the graduate student's failure to make adequate progress on his/her degree, and falsification of credentials or experience. In the event of suspension or termination from a graduate assistantship, any tuition benefits awarded in conjunction with the assistantship will remain in effect for the term. Benefits committed for future terms may, however, be withdrawn, along with commitments for future assistantships. (See Procedure 3: Disciplinary Suspension or Termination.)

BME-Department Policy on leaving a lab or changing labs

- The Graduate Program Director or, in the case that the Graduate Program Director has conflict of interest the Senior Advisor, must approve the decision in order for it to be official.
- In the event that a student is asked by their advisor to leave the lab, in order for the student to remain in the degree program, it is incumbent on the student to identify a new lab and mentor who is willing and able to financially support the student (if a PhD) for the remainder of their time in the degree program. The Graduate Program Director and Graduate Program Coordinator will assist in this identification.
- In the event that a student decides to leave the lab, in order for them to remain in the degree program, they must identify a new lab and mentor who is willing and able to support the student for the remainder of their time in the degree program (and provide financial support if the student is in the PhD Program).
- The student will have 8 weeks to identify a new lab. They can (and are encouraged to) identify 2-3 "mini rotations", each of which are ~2.5 weeks long. It is the student's responsibility to identify and organize these new lab rotations. During that time the BME Dept. supports them financially.
- At the end of the rotations, if the student has not found new advisor, they may be dismissed from the graduate program. It is possible for the original PI to work with the student to complete an MS

Thesis defense- if enough work has been completed by the date of the fracture. (note- MS students are considered self-funded so discussions as to funding should be a core component of any discussion to graduate with an MS. It is up to the advisor as to whether a student is paid in this situation.)

- If the student wants more time to identify a new advisor, they may petition the BME Graduate Program Committee accordingly.

Note that a student may be asked to leave their lab and subsequently the BME department and the University of Virginia even if they are progressing at an adequate pace through their degree program (see §2.2.1 below). For example any acts of hazing, violence, threats of violence, or other aggressive acts are potentially immediately terminable offenses.

2.2.2 PhD Dissertation Committee and MS Thesis committee

The PhD Dissertation Committee and MS Thesis Committee provides broader scientific and academic advising for the student. The **committee should meet with the student at least once a year** to advise and evaluate progress towards graduation. The committee chair leads this committee and supports the student and the advisor through the process of meeting graduation requirements. The requirements for the PhD Dissertation Committee composition are found in §2.8.2 and the requirements for MS Thesis Committee are found in §2.7.1.

2.2.3 Faculty Advisor for ME students

The Director of Graduate Studies serves as the official faculty advisor to ME students. The advisor provides guidance to students on structuring their programs of study, career goals, identifying learning opportunities, and carrying out research projects. It is expected that the advisor and students meet regularly to discuss progress. The ME program is supported by a community of clinical, academic and industry mentors.

2.2.4 Departmental Senior Advisor

Students are encouraged to express their comments and concerns regarding their experiences in the graduate program in Biomedical Engineering. In order to ensure that students have a point of contact for such concerns in addition to the Graduate Program Committee, students are welcome to discuss concerns with the BME Graduate Senior Advisor, Jason Papin, PhD. While the BME Graduate Senior Advisor aims to maintain the privacy of information shared with him, he cannot guarantee confidentiality with respect to the disclosure of information for which he has mandatory reporting responsibility per law or University policy (e.g., disclosures of potential discrimination, harassment, sexual misconduct, or suspected child abuse or neglect). Any student can request a meeting at any time.

The University Ombuds is an additional resource that acts as a trusted navigator for current students seeking guidance, information, insight, and potential options to overcome an existing conflict or concern. The University Ombuds empowers students to proactively address their concerns in a positive, constructive method while assisting in an impartial, independent, informal, and confidential manner. Ombuds consultations can be booked online or by contacting the University Ombuds Office at (434) 924-7819 or via email at ombuds@virginia.edu. For more information about the University Ombuds as well as a list of other valuable student resources, please visit the University Ombuds Office website at ombuds.virginia.edu.

2.3 English Language Proficiency

All new graduate students whose first language is not English are tested for English proficiency ***prior to their first semester at UVA***. All non-native speakers of English take the Virginia English Language Proficiency Exam (UVELPE) which is administered by the Center for American English Language and Culture (CAELC). Students must score at least a 55, or complete the required series of ESL courses before they are released to TA and may commence their required BME Teaching Assistant Experience. CAELC provides a program of ***mandatory*** courses in preparation for success in our English language graduate programs at UVA.

2.4 General Academic Regulations

2.4.1 Student Status and Residency Requirements

Graduate degree Programs require a period of residency to fully engage in the UVA academic community and to actively contribute to intellectual discourse within the School. For students coming into a PhD program with a master's degree, at least two regular semesters beyond the master's degree one semester in full residence at UVA in Charlottesville. For students coming into a PhD program with a bachelor's degree, at least three regular semesters are required. For a master's degree program, at least one semester is required.

A student receiving financial support from the Biomedical Engineering Department, the School of Engineering and Applied Science, or the School of Medicine, must be registered full-time, defined as at least 12 credit hours of lecture/laboratory courses and/or research per semester during the academic year, and 6 credit hours of research only during the summer session. Students receiving School of Engineering and Applied Sciences funding, research grant-based funding and/or graduate program funding ***are not permitted*** to have other employment without approval of their advisor, the BME Graduate Program Director, and the SEAS Office of Graduate Programs. For further information, refer to the Graduate Record. University of Virginia - Acalog ACMS™

2.4.2 Time Limit for Degrees

The time limit for completion of the MS is five years after admission. The time limit for the ME and PhD degrees is seven years after admission. These are University and School limits, and much longer than departmental expectations for success. Any BME student *approaching these limits* is expected to work closely with their advisor and the Graduate Director, and be in close communication with their research committees and other resources as needed in order to succeed.

2.4.3 Transfer of Credit

Master of Science candidates may transfer a maximum of 6 credits of approved graduate courses into the program. Master of Engineering candidates may transfer 12 hours of graduate credit. Doctor of Philosophy candidates' requests for transfer of courses from other schools of recognized standing must be submitted for approval *at the same time as* the program of study. PhD students who join BME with a prior related Masters will automatically qualify for a waiver of some elective requirements.

These graduate courses must have been completed at another school of recognized standing. They cannot have been used to satisfy requirements for another degree, and only courses with a grade of B or better may be transferred. All requests for the inclusion of transfer credit in the University of Virginia program of study are subject to the approval of the candidate's academic department and the Director of Graduate Education. Transfer credits should be submitted on the Request Approval of Transfer Credits form.

2.4.4 Graduate Course Drop Deadline

The last date for dropping a graduate course is posted in the UVA academic calendar. Note that this date differs by school.

2.4.5 Incomplete Grades

Incomplete grades are possible, and may be helpful in certain events. The following procedures must be followed:

- Prior to the last ***week*** of class, students must initiate the request for an IN and secure the instructor's approval in writing via email.
- The student must also secure permission from their advisor.
- Final permission must be requested of the Graduate Program Director/Committee.
- If an incomplete is approved, a timeline must be developed with the instructor and advisor which details work to completion for the course.
- This timeline will serve as a working guide, and must be forwarded to the Graduate Studies Director for final approval, and the Graduate Coordinator for documentation within the student's file.

- On-going communication between student and instructor is viewed as critical, and a core component in developing workforce skills. The timeline may be amended as needed and agreed upon by all parties involved.
- Failure to follow this agreed upon timeline, and *failure to communicate any difficulties faced* in following the agreed upon guide, will be considered a **failure** in completion of the course, and the grade earned to date will be entered.
- If the course is not completed by 200 days from the last day of when the course officially ended, the grade will automatically convert to an "F", as per policies within the Engineering School and UVA.

2.4.6 OUTCOME ASSESSMENT

The School of Engineering and Applied Science has outcome assessment requirements in order to evaluate the School's degree granting programs. A set of student learning outcomes and associated assessment forms has been defined for each graduate program. The level of achievement of each outcome will be evaluated for every student as the student proceeds through the program. More information about outcome assessment (and the associated forms) can be found at the Form link: GradOffice Page Forms | University of Virginia School of Engineering and Applied Science.

2.5 BME ACADEMIC REQUIREMENTS FOR ME, MS, PHD, AND MD/PHD DEGREES

	ME	MS	PhD	PhD (with prior MS)	PhD/MSTP[5]
Coursework Requirements[1]					
Core Courses required:	4 of the 6 BME 6001-6006	BME 6001-6006			BME 6003-6006
Graded credit hours of coursework	30 (+ 2 s/u)	24	24	12	18
Elective Educational Experiences	N/A	N/A	2	2	1
Research course hours[2]	BME 8995 3 credits min	BME 8999 6 credits	BME 8999 (before comps), BME 9999 (after comps), 24 credits	BME 8999 (before comps), BME 9999 (after comps), 24 credits	BME 9999 24 credits
Total overall credits	**32**	**30**	**48**	**36**	**42**
Other Requirements					
Qualifying Exam (by beginning of 3rd year)	N/A	N/A	required	required	required
Proposal of Research (by beginning of 4th year)	N/A	Written[3]	Oral & Written	Oral & Written	Oral & Written
Final Oral Presentation	Required for ME Project	Thesis Defense	Dissertation Defense	Dissertation Defense	Dissertation Defense
Final Written Report	Required: ME Project	Required: MS Thesis	Required: PhD Dissertation	Required: PhD Dissertation	Required: PhD Dissertation
Outcome Assessments	required	required	required	required	required
Teaching Assistantship (TA)[4]	Not required	Not required	2 semesters required	2 semesters required	1 semester required
Attend BME Seminars	encouraged	required	required	required	required

Notes:

[1][From §2.4.5]

[2]Research credit does not count towards graded course credit hour requirement.

[3]MS Students are expected to provide their committee with a written proposal prior to scheduling defense.

[4]Teaching is an integral part of graduate training in Biomedical Engineering. All PhD students must participate in BME teaching assistantships (TAship) in BME undergraduate or graduate courses as part of the academic requirements for the degree, regardless of their source of funding for the stipend or fellowship. More information about the TAship is provided in §2.8.8.

[5]See special note on MSTP students in §2.8.6.

2.6 ME PROGRAM

The Master of Engineering degree requires completion of the BME core course requirements, and has its own sequence to support specialization in biomedical technology design and development. Except for BME 8995 (Projects), the same course cannot be used to satisfy more than one of the requirements. Students must meet the academic requirements described in §2.4.5.

2.6.1 COURSE SEQUENCE (32 CREDITS TOTAL)

Fall of first semester (15 credits total):
Three of the 4 BME Grad Core
- BME 6001 (2 cr.) Physiology: Cell & Molec (Peirce-Cottler)
- BME 6002 (2 cr.) Physiology: Organ (Barker S.)
- BME 6003 (2 cr.) Biostatistics & Computation (Naegle)
- BME 6004 (2 cr.) Signals & Analysis (Meyer)
- BME 6550 (3cr.) Special Topics: Clinical Technology Continuum of Care
- BME 8995 ME Supervised Projects (3 credits)

3 credit electives from SEAS, SoM or A&S upon approval of Program Director
- BME/SEAS technical elective (3 cr.)
- GNUR 5240 (3 cr.) or an approved 3 credit Ethics/Leadership course

Career Design (by Grad Director permission only):
- GoingPro (2 cr U/S) (Kelly) *or* BME 6550-(3 cr) Frontiers (Hastings)

J-Term (2 credits total):
BME 6550 (2cr) Advances Design Practices

Spring of second semester (15credits total):
One of the 2 BME Grad Core
- BME 6005 (2 cr.) Research Fundamentals (Griffin)
- BME 6006 (2 cr.) Data Analytics (Fallahi-Sichani)

BME 6060 (3 cr) Biomedical Innovation
BME 8995 (5 cr) ME Supervised Projects
3 credit elective from SEAS, SoM or A&S upon approval of Program Director
- BME/SEAS technical elective (3 cr.)
- GNUR 5240 (3 cr.) or an approved 3 credit Ethics/Leadership course

Career Design (by Grad Director permission only):
- GoingPro (2 cr U/S) (Kelly) *or* BME 6550 (3 cr) Frontiers (Hastings)

2.6.2 ME PROJECT

Students will register for ME Supervised Projects (BME 8995) throughout their degree experience. A two page (max) proposal will be approved by the ME Program Director to help the student focus on the intent and scope of the project. The project should exhibit individual thought and represent the culmination of effort from the prior year. It will incorporate best practices within the biomedical design industry, including verification and validation testing results, risk management and mitigation, regulatory pathway and intellectual property strategies, and a

viable sustainable business model description. Each project must also contain a data science component. A written report describing the project is required. Presentations of projects as a Final Design Review to a Masters Committee including clinical, academic and industry mentors is required and will help form the basis of the final grade.

2.6.3 ME Degree Administrative Requirements

In order to conduct clinical observations within UVA Medical Centers, all ME students must comply with all requirements issued by the Medical Center to include required inoculations and titers, on-line learning modules, and completion of a possible criminal background check. ME students must file an ME Degree Plan of Study form by the end of the first term. ME students are expected to attend BME Departmental Seminars and Meet the Speaker events. ME students must complete three of the four Outcome Assessment Forms as required by SEAS.

2.7 MS PROGRAM

The Master of Science degree requires a minimum of 24 graded credit hours of course work, 6 credits of MS thesis research and satisfactory defense of a thesis. The same course *cannot* be used to satisfy more than one of the above requirements. In addition to these academic requirements and the requirements described in §2.4.5., certain administrative requirements must also be met.

2.7.1 MS COMMITTEE

The MS Committee must consist of at least three faculty members, including at least one primary BME faculty member and at least one member from outside the department. Adjunct faculty are acceptable outside members if they provide an objective and diverse viewpoint. The student should form this committee within six months from starting in the program. After forming a MS Committee, the student should file a **Master's Degree Plan of Study** form (within first year of matriculation). This form is available on the BME Grad Program Collab site and must be approved by the student's MS Committee and the Graduate Program Director.

2.7.2 MS THESIS DEFENSE TIMING

With the approval of their MS Advisor, the student should write an MS Thesis and submit it to their MS Committee *at least one week* before the MS Thesis Defense. There is no BME or SEAS requirement stating that a student must have submitted or already published a peer-reviewed manuscript(s) prior to defending their MS Thesis; however, MS advisors and committees may apply a publication requirement at their discretion. The student should also notify the Graduate Program Coordinator of the date selected for the MS Thesis Defense and provide the title and a short abstract of the work, so that an announcement of the defense may be sent out. **The public announcement of the oral presentation of the defense must be sent out by the student's Graduate Coordinator at least one week prior to the presentation.** Students should consult their Graduate Coordinator for the departmental announcement template and procedure.

2.7.3 MS THESIS DOCUMENT

The MS Thesis is a unique and individualized document that describes the student's research and design accomplishments they have made during their time in the BME MS training program. Because MS training is a mentored experience, the student's ideas and work products will (and should be), influenced by their advisor and other faculty, students, and collaborators that the student has worked with during their time in the program. Hence, it is common for students to include data, figures, and /or schematics from lab-mates and other collaborators in the Thesis, and this is allowable as long as these items are given proper attribution to their respective authors, as indicated in the figure caption. Students and their advisors may choose to present all of the work products of the student's MS experience or a sub-set of work products – and the decision of what specific content should be included/excluded from the Thesis should be made by the student in consultation with their advisor. For example, sometimes (but not always) students and advisors elect to include "negative data" or "unpublished results" or "failed engineering designs" in the Thesis because they deem them to be an important component of the experience that more fully represents the body of work that the student has produced. Theses are considered "publicly available" documents once they are defended, and there are several options for limiting

access or placing an embargo on publishing theses online. For more information about this, please see: https://www.library.virginia.edu/libra/etds/authors-rights-embargoes. Completed theses are submitted online to Libra after the defense. Please refer to the Access and visibility options | UVA Library (virginia.edu) for more information about this, and pay close attention to guidelines about copyright concerns Copyright essentials for scholarly work | UVA Library (virginia.edu) if you are including text or figures from previously published papers or books.

When the student embarks on writing their thesis, they should first meet with their advisor to discuss an outline of the chapters – and an outline for each individual chapter. Students are ***highly encouraged*** to talk with prior graduates of their own lab to get example digital versions that can be utilized as examples or templates for formatting.

All MS theses should include:

- A title page
- Acknowledgements section
- Table of Contents
- List of Figures, Schematics, Tables
- Abstract (that summarizes all of the research/design described in the thesis)
- Overarching Introduction Chapter (that summarizes the motivation for the research/design described in the thesis and any necessary background information needed for a reader to understand what will be presented in the subsequent chapters)
- Chapters that describe the background, methods, results, and conclusions from the MS research/design activities undertaken during the training experience.
- Overarching Conclusion/Discussion/Future Work Chapter(s), which should include: 1) an overarching summary of the research/design presented in the Thesis, 2) a discussion of the limitations of the research/design presented in the Thesis, 3) statement of the real-world impact of the body of work and scholarship presented in the Thesis, and 4) a comprehensive and thorough discussion of future work.
- Bibliography. The thesis is expected to be thoroughly referenced with the most pertinent literature, including current/recent papers, as well as historical papers in the field of research.
- Figures/Tables/Schematics. These may be displayed one per page with corresponding captions underneath, or formatted in-line with the main body text with caption boxes also embedded within the main text body. These may be presented at the point in the body of the text where they are referred to, or at the end of the thesis document in a comprehensive collection. These are stylistic choices that that student can make in consultation with their advisor, but it is important to make it clear to the reader where these items can be found in the document – e.g., by including a list of Figures, Schematics, Tables after the Table of Contents.

Importantly, **there are no specific formatting requirements** (e.g., total page length, font types or sizes, line spacing, margins) for the MS Thesis; therefore, each student should embrace their individuality and contemplate their own preferences and personal style and let that shine through in their thesis formatting decisions. The student should draft the thesis and share it with their MS advisor (and any other collaborators whose work is included) for their approval prior to sharing it with their MS Committee. Because MS theses tend to be lengthy documents, it is suggested that the student provide a complete draft to their advisor (and collaborators) at least 2 weeks prior to when they need to provide it to their MS Committee, so that the advisor (and collaborators) has sufficient time to read, edit, and the student can make changes accordingly before providing the final version to the MS Committee. The properly formatted complete draft (including all the figures and references) should be submitted (electronically or paper copies if so requested by committee members) to the MS Committee **at least one week** before the MS Thesis Defense.

2.7.4 MS THESIS DEFENSE

The MS Thesis Defense is conducted orally and publicly in front of the MS Committee, previously approved by the Engineering Graduate Registrar's Office. The defense is designed to test the student's knowledge of their field of research. The first part of the MS Thesis Defense, which should last approximately 40 minutes, is an oral presentation of the thesis by the student, which is open to the public. This will be followed by a 1-2 hour oral defense before the MS Committee and any other interested faculty. Students are not expected to bring food/snacks and/or drinks for their committee members and/or other audience members to the defense; however, if their lab members and/or a friend(s) want to show their support for the student by providing food/snacks and/or drinks, that is permitted.

A student who does not perform satisfactorily in the defense may, with the recommendation of two-thirds majority of the MS Committee, be granted a future thesis defense after being given adequate time to prepare.

Upon successful passage of this oral thesis defense, the student's MS Committee should submit the **Report on Final Exam** and the **Thesis Outcome Assessment** to the Graduate Program Coordinator who will provide it to the SEAS Graduate Registrar's Office. The student must submit their approved final thesis, along with the Thesis/Dissertation Cover, and Approval Pages Form to Libra, the online archive of UVA by the date specified in the academic calendar. Paper bound copies are no longer required. Students should discuss any copyright/embargo issues with their mentors and chairs prior to the upload. For more information on LIBRA and instruction of how to upload, please visit: https://www.library.virginia.edu/libra/etds/etds-checklist

2.7.5 CHANGING FROM THE MS PROGRAM TO THE PHD PROGRAM

At any point in time after a student has been admitted to the MS Program, they may apply to be admitted to the PhD Program. MS students who wish to transition to the PhD Program in BME do not need to officially apply the same way that a new applicant would apply to the program, but they will need to petition the BME Graduate Admissions Committee with this request. The student must include the following components in their petition:

1. Petition from the student explaining the request, motivation, and anticipated timeline
2. Letter from the potential PhD Mentor indicating willingness to financially and academically support the student
3. Current unofficial UVA transcripts
4. Original grad school application (with help from the Graduate Program Coordinator)

The Graduate Admissions Committee, via the Graduate Program Director, will notify the student and potential mentor of the outcome. If voted in the affirmative, the Graduate Program Coordinator will assist the student in filing the proper petition with the SEAS Dean's Office.

2.8 PHD PROGRAM

The Doctor of Philosophy degree requires 24 graded credits of course work past the bachelor's degree (including any completed during a Master's program), plus two Elective Educational Experiences (see below). Students who enter the program already holding a Master's degree in an engineering discipline from a school *other than* the University of Virginia must take the core BME courses, completing at least 12 credit hours of graduate level coursework. The same course cannot be used to satisfy more than one of the requirements, and students must meet the academic requirements described in §2.4.5.

2.8.1 PHD ADMINISTRATIVE REQUIREMENTS

1. Select a PhD Advisor, and working with the advisor the student should identify committee members and invite them to serve on their PhD Dissertation. The student should fill out and file the Doctoral Advisory Committee Form with the Graduate Program Coordinator ***no later*** than July 1st after second semester of doctoral study.

2. File a **PhD Plan of Study** *no later* than May 1st in the second year of doctoral study. The form is available on the Grad Program Collab site and must be approved by your Advisory Committee and the BME Graduate Program Committee.
3. Students are required to complete an **Individual Development Plan (IDP)** form annually with their advisors. A copy of which will be forwarded by the advisor to the Graduate Coordinator as proof of completion.
4. Students will meet with their PhD Dissertation Committees annually.

2.8.2 FORMATION OF THE PHD DISSERTATION COMMITTEE

Students should appoint their PhD Dissertation Committee in consultation with their PhD advisor and with their PhD advisor's approval. The PhD Dissertation Committee is a resource for the student as they pursue their graduate coursework, undertake their dissertation research, and participate in professional development and career planning. Students should consult with their PhD Dissertation Committee members – either in one-on-one meetings or in a group meeting of the entire committee -- at least once per year throughout their PhD training experience to ensure that their research is progressing at a suitable pace and to get the advice, mentoring, and guidance of the committee members, which can be instrumental in shaping the dissertation as it progresses.

The membership of the PhD Dissertation Committee can grow and/or change over time as the student's dissertation research develops/changes over time and as the student progresses through their graduate career. In other words, members of the PhD Dissertation Committee can be added and/or removed at any point in time, as long as the requirements stated below for each key milestone are met.

The committee is officially formed by filling out the **School of Engineering's Appointment of Doctoral Advisory Committee Form**, which is reviewed and approved by the Graduate Program Director and forwarded to SEAS. It is highly recommended that this form be filled out and submitted to the Graduate Program Coordinator (who will forward it appropriately) **by July 1st after their second semester in the BME PhD program**. The table below lists the guidelines for the PhD Committee at each stage in the PhD training process.

PhD Committee Composition Requirements at each Stage of the PhD Training Process:

	Minimum Number of **total faculty** on the committee (including the PhD Advisor and the Committee Chair)	Minimum number of **BME faculty%** (i.e. faculty with primary appointments in BME)	Minimum number of **SEAS faculty***	Minimum number of **outside faculty†**	Primary appointment of the **Committee Chair°** must be in the:
Membership of the PhD **Qualifying Exam** Committee	3	2	2	0	BME Dept.
Membership of the PhD Dissertation Committee for the **PhD Proposal**	4	2	3	1	BME Dept.
Membership of the PhD Dissertation Committee for the **PhD Dissertation Defense**	5	2	3	1	BME Dept.

% A "BME faculty" member must have 50% or more of his/her/their primary appointment in the BME Department.

* Any faculty member who has a primary appointment in the BME Department, even if their official appointment in BME is through the School of Medicine, is considered "SEAS faculty" for the purposes of this requirement.

† The "outside faculty" member must 1) be on the UVA Faculty, and 2) have 0% of their primary appointment in the BME Department. Students joining after May of 2024 may also not include any faculty with a BME courtesy appointment as their outside member.

° The "Committee Chair" must not be the PhD Advisor.

2.8.3 TIMELINE FOR PHD TRAINING EXPERIENCE

In our PhD Program, the student has tremendous ownership over their own destiny and responsibility for progressing toward their graduation. Hence, the PhD student has the responsibility to manage the timing of their progression through the PhD training experience according to a timeline that is mutually agreeable with the PhD advisor and their PhD Committee. Therefore, it is incumbent on the PhD student to communicate with their advisor and PhD Committee at regular intervals to make sure that their progression through the program is following a timeline that is suitable to and in accordance with the expectations of the PhD advisor and PhD committee at each check-in. The Graduate Program expects students to progress through their PhD training experience in BME according to the timeline below. Additionally, every student should regularly check in with their PhD advisor (suggested every 3 months, or 4x per year at a minimum) ***and*** the members of their PhD Committee (suggested at least once per year) to determine if they are progressing at a pace that is leading to a successful and productive PhD training experience.

→ **During the early summer after their first year in the program**, students are advised to meet with their advisor (or co-advisors, if they are advised by more than one faculty member) to discuss who to invite to serve on their PhD Committee and who to invite to serve as the Chair of the PhD Committee. After the student and advisor have agreed who to invite, the student should send invitations by email to the prospective committee members. Once the committee members have agreed to serve, the student should make their committee official by filling out the **Appointment of Doctoral Advisory Committee Form**, which is reviewed and approved by the Graduate Program Director. It is highly recommended that this form be filled out and submitted to the Graduate Program Coordinator **by July 1st after the second semester in the BME PhD program**. During that summer or early fall as the student enters their second year in the program, they are advised to schedule a meeting with their committee members (either as a group or one-on-one meetings) to discuss the **PhD Plan of Study** (see §2.8.4), research goals and objectives, career goals, and professional development opportunities that can be undertaken during the PhD training experience. The **PhD Plan of Study** should be submitted to the Graduate Program Coordinator in the spring of the second year (before May 1st) –before the student takes their PhD Qualifying Exam.

→ **During the spring of their second year in the program,** students should start planning to take their PhD Qualifying Exam. Note that students can take the PhD Qualifying Exam prior to this point in time, e.g., during the summer after their first year in the program, with permission of their PhD Advisor and the BME Graduate Program Director. The **PhD Plan of Study** should be filled out and submitted to the Graduate Student Coordinator ***by May 1st*** of the year that the student plans to take the PhD Qualifying Exam. At least three (3) members of the PhD Committee must be present for the PhD Qualifying Exam, but more than three members is allowable. More details about the composition of the PhD Qualifying Exam Committee are provided below in §2.8.7.

- → **Sometime between the summer after their third year and half-way through their fourth year in the program,** students should do their PhD Dissertation Proposal. The PhD Dissertation Committee (or a sub-set thereof) will serve as the student's examining committee for the PhD Dissertation Proposal. At least four (4) members of your PhD Dissertation Committee must be present during the proposal, either virtually or in person. Additionally, one of the four members must be the "outside" committee member, which means that they must have 0% appointment within the BME department- and not have a courtesy appointment for those students joining after May of 2024. The chairperson of the committee (who may **not** be the student's faculty advisor) **must** hold 25% or more of their primary appointment in the BME Department OR have previously served on BME PhD committees of three students through the entirety of the degree process (qualification exam, proposal defense, and dissertation defense).

→ Sometime during the fourth year (ideally prior to the start of the 5th year, but at least 6 months prior to the expected Ph.D. Dissertation Defense date) in the program, the student should hold a meeting with their PhD Dissertation Committee to discuss their research progress, career goals, and other planned professional development activities. At this point, the. PhD Dissertation Committee should include (at a minimum) the 5 faculty who will be participating in the final PhD Dissertation Defense. This meeting has traditionally been referred to as the "Permission to Write" meeting. At this meeting, the student should present their work to date and discuss whether and when the planning and scheduling of the PhD Dissertation Defense will happen.

The PhD Dissertation Committee composition for the PhD Dissertation Defense should adhere to the following Engineering School requirements:

- All Committee members must hold qualifications commensurate with that of a research faculty or equivalent rank.
- At least two members must be primary UVA BME faculty.
- One member should be an "outside faculty" committee member, which means that they must have 0% appointment within the BME department and for those joining after May of 2024, may not hold a BME courtesy appointment. This "outside faculty" member must be on the UVA Faculty. The purpose of the "outside faculty" member is to ensure consistency across the University, to help ensure fairness to the student, and to prevent conflict inside the department.
- The chairperson of the committee (who may **not** be the student's faculty advisor) **must** hold 25% or more of their primary appointment in the BME Department OR have previously served on BME PhD committees of three students through the entirety of the degree process (qualification exam, proposal defense, and dissertation defense).
- When the student's advisor does not have a primary appointment in the BME Department, the committee chairperson will function as a co-advisor and department representative. Such advisors may not count as the SEAS required external member.
- To avoid conflicts of interest, no committee member can be employed by or receive compensation from another committee member to avoid conflicts of interest.
- One additional research professional from "outside UVA" may serve as a fifth voting committee member, provided his/her/their qualifications are commensurate with that of a research faculty or equivalent rank. Emeritus faculty are considered "outside UVA" for the purpose of PhD Dissertation Committees and may not serve as the advisor of record, but may remain on PhD committees. For all "outside UVA" committee members, a CV or biography will be required and should be submitted to the SEAS Graduate Registrar for final approval by SEAS, and should include the highest degree attained, the year and institution, and any relevant experience or research which would enable that member to provide expertise to the student and committee. (See the Graduate Coordinator for assistance with the required paperwork)

2.8.4 PHD PLAN OF STUDY AND COURSEWORK

In deciding the doctoral course work and finalizing the PhD plan of study, students should seek assistance from their advisor and Doctoral Advisory Committee members and must obtain their approval. Because this is a *plan* of study, not a contract, students should make every effort to complete and submit it as soon as possible. This will allow the maximum flexibility for any necessary revisions to be made without delaying the student's progress to the PhD. The Plan of Study may be revised as necessary throughout the student's graduate study. Preparation of the **PhD Plan of Study** is an appropriate time to schedule the initial meeting with your Doctoral Advisory Committee. Students, their advisors, and Doctoral Advisory Committee members are responsible to design a plan of study suitable for the individual and that meets the academic requirements of the BME PhD program. The plan of study may consist of more than the minimum required credits. Courses used for EEEs may not satisfy basic BME course requirements.

The Plan of Study should be submitted to the Graduate Program Coordinator *no later than the end of the summer after second semester of doctoral study* but preferably sooner. These forms may also be revised as necessary during the course of the PhD program, in consultation with the student's Doctoral Advisory Committee. Students who have not submitted a Plan of Study ***will not*** be permitted to take the qualifying exam.

2.8.5 ELECTIVE EDUCATIONAL EXPERIENCES

Elective Educational Experiences (EEEs) are intended to encourage students to begin the process of life-long learning essential to a career in Biomedical Engineering. EEEs are intended to cover new material and areas of study that the student has not already covered in previous coursework or research experience or to provide the student with additional depth in a particular area. The student should justify *why* they want to take the EEE and *how* the EEE will broaden and/or deepen their knowledge base. We anticipate that students will often pursue EEEs later in the course of their PhD studies and select them based on their PhD research and future career plans. All EEEs must be approved by the student's PhD Committee in advance. Specifically, students must submit to their PhD Committee a brief proposal stating the rationale for their EEE (how it fits with their individual plan of study and fills a knowledge gap not covered by their previous coursework and research experience), their goals for the EEE, and the metrics they will use to assess how well the EEE fulfilled those goals. There is a specific form for **EEE Proposals** that should be filled out, approved by the PhD Committee, and submitted to the BME Graduate Program Coordinator. Both EEEs must be approved prior to the thesis proposal; however, students may participate in one or both EEEs after their proposal defense. At the completion of the EEE, students must submit a brief "EEE Summary Report" to their PhD Committee Chair assessing the EEE using the proposed metrics. There is a specific form for the **EEE Summary Report**, and the Summary Reports for both EEEs must be submitted to the PhD Committee Chair by the time the written dissertation is submitted to the PhD Committee (i.e., at least two weeks prior to the PhD Dissertation Defense). Students are also encouraged to include a slide on their EEEs in their PhD proposal and/or PhD defense presentations in order to share information on potentially valuable experiences with other students. An appropriate EEE is expected to involve roughly the time commitment of a typical graduate course. Possible examples include:

1. Taking an additional graduate course beyond the normal course requirements,
2. Taking an intensive 2-week "short course" to learn a series of specialized techniques,
3. Completing a summer internship at a biotechnology company.

If courses are used for EEEs, these courses may not be used to satisfy basic BME course requirements.

2.8.6 MSTP (MD/PHD) STUDENTS

Medical school physiology courses will be accepted in lieu of BME 6001 and 6002. These courses may not have to be replaced with additional credits. MSTP students need to complete at least 18 graded credits. An EEE with a focus on developing computer programming skills should be completed before the end of the first semester after transitioning to the PhD program if the student does not have sufficient programming experience to succeed in the core graduate BME curriculum. In addition, a three to 6 credit independent study (BME 8995) may be required to completely satisfy SEAS credit requirements. See the graduate program coordinator for details. MSTP students are only required to complete one TAship.

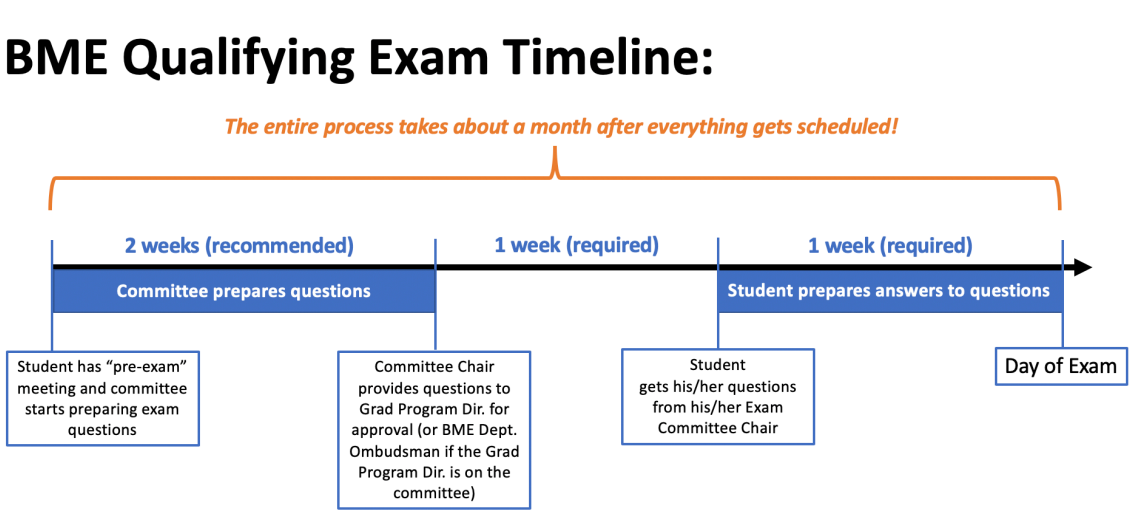
2.8.7 PHD QUALIFYING EXAMINATION

The Qualifying (or Comprehensive) Examination is required by the School of Engineering and Applied Science and all doctoral engineering students must take the exam (see UVA Graduate Record for general guidelines). Students intending to take the Qualifying Examination must complete the **PhD Plan of Study** and turn it in to the Graduate Student Coordinator ***by May 1st*** of the year that the student plans to take the PhD Qualifying Exam.

Purpose: To determine whether the student is able to comprehend and integrate a body of advanced knowledge, and is capable of conducting original research. The student's ability to think, formulate, and present ideas is also evaluated.

Timing: All students should take the PhD Qualifying Examination before the end of the summer after the fourth semester of graduate study (i.e. after their 2nd year). Students may elect to take the PhD Qualifying Exam as early as after the second semester in the PhD program (i.e. after their 1st year). Delayed examination is subject to the approval of the student's PhD Dissertation Committee. Passage of the PhD Qualifying Exam is required to continue the PhD program.

Scheduling of and Preparation for the Exam: Students should first obtain approval from their PhD Advisor to take the Qualifying Exam. Exams are generally scheduled between the third week of May and the end of June after the student's second year in the PhD program. The recommended timeline for setting up the required "Pre-Qualifying Exam Meeting" and the Qualifying Exam is shown in the figure. After the student has obtained approval from their advisor to take the exam, and prior to ***May 1st***, the student should schedule a "Pre-Qualifying Exam Meeting" of their PhD Qualifying Exam Committee, which should be comprised of their PhD Dissertation Committee, or a subset thereof. Requirements for the PhD Qualifying Exam Committee composition are provided below. This meeting should last approximately 45 minutes, during which the student should: 1) present and get approval for the **Plan of Study** so that it can be submitted to the Graduate Program Coordinator by May 1st, 2) present a 10 min. long informal oral presentation to acquaint the committee with the student's research to date and their anticipated future research directions so that the committee has sufficient information to be able to draft 3 exam questions for the student (see "Format of the Qualifying Exam" below). After that, the student should leave the meeting and the faculty on the committee should spend the remainder of the meeting drafting the exam questions for the student.



The student will need to work with their PhD Exam Committee to schedule a time and date for the 3-hour long exam and reserve a room (or schedule a Zoom meeting if required by circumstance) for the exam. Note that the timing between the "Pre-Qualifying Exam Meeting" and the PhD Qualifying Examination is approximately one month (see figure). Once the exam date, time, and location is set, the student needs to confirm with their PhD Qualifying Exam Committee *and* notify the Graduate Program Coordinator. The Graduate Program Coordinator will prepare the examination forms and have them ready for the Advisory Committee chair by the day of the exam.

Formation of the BME Qualifying Exam Committee: The PhD Qualifying Exam will be administered by the student's Qualifying Exam Committee. At least three (3) members of the PhD Qualifying Exam Committee must be present for the PhD Qualifying Examination, but more than three members is allowable.

The formation of the PhD Qualifying Exam Committee should start with a conversation between the student and their advisor. The decision of who to invite to join the student's PhD Qualifying Examination Committee should be a joint decision made by the advisor and student together, and requires the approval of the PhD advisor and the BME Graduate Program Director.

- At least two of the PhD Qualifying Exam Committee members must be primary BME faculty.
- The Chair of the PhD Qualifying Exam Committee must be a BME faculty member who is not the PhD advisor and hold at least 25% or more of their primary appointment in the BME Department OR have previously served on BME PhD committees of three students through the entirety of the degree process (qualification exam, proposal defense, and dissertation defense).

- If the student's PhD advisor is BME primary faculty, they can serve as one of the BME faculty members on the PhD Qualifying Exam Committee.
- If the PhD advisor is not primary BME faculty, the PhD Qualifying Exam Committee still needs to have at least two primary BME faculty on it.
- All members of the PhD Qualifying Exam Committee may be primary BME faculty.
- All members of the PhD Qualifying Exam Committee must have a PhD and/or MD.
- After the student passes the PhD Qualifying Exam, the composition of their "PhD Dissertation Committee", may differ from the composition of the PhD Qualifying Exam Committee.

Format of the Qualifying Examination: The PhD Qualifying Exam is an oral exam lasting approximately three hours, which is administered by the student's PhD Qualifying Exam Committee. The Chair of the student's Doctoral Advisory Committee will coordinate the preparation of three questions, with input from the entire Exam Committee. The oral examination will consist of a set of integrative questions (typically three) that have been prepared by the student's Doctoral Advisory Committee and provided to the student one week in advance of the oral examination. The questions will be based upon the student's program of study and topics relevant to their anticipated dissertation topic. The questions will:

- Assess the ability to integrate a body of advanced knowledge in biomedical engineering,
- Include experimental design and hypothesis testing, and
- Have a design or a quantitative analysis component.

The Chair of the student's Doctoral Advisory Committee should submit a copy of the oral exam questions to the Graduate Program Director for approval at least 14 days before the scheduled exam date using the **PhD Qualifying Exam Questions Form.** (Note that if the Graduate Program Director is a member of the PhD Qualifying Exam Committee, the exam questions should instead be submitted to the Senior Advisor for approval.) The Chair of the PhD Qualifying Exam Committee will deliver the approved exam questions to the student and to the Graduate Program Coordinator e-mail seven (7) days prior to the scheduled exam date at the time the exam will be held.

During the week leading up to the oral exam, the student may research the questions to develop his or her answers using textbooks, published literature, class notes, software, etc. However, the student may not enlist the help of other individuals in preparing answers - to do so will be considered a violation of the honor code. During the oral exam, the student will provide their answers to the questions orally and by hand-drawing schematics, outlines, bullets, notes, graphs, equations, etc. on the whiteboard to communicate their answers in an organized and visual fashion, as well. The student may not use PowerPoint slides or the overhead projector to present a formal slide deck. The objective is to convey your approach to solving the problems and your solutions to the problems concisely and convincingly – as if the student were teaching a mini-lecture. At the start of the exam, *if* the Chair of the PhD Qualifying Exam Committee has given the student permission, the student may give photocopied hand-outs to the PhD Qualifying Exam Committee, particularly if they are useful to convey plotted data, complicated schematics that would take too long to hand-draw on the board, pieces of computer code, derivations, etc. However, the student may not hand out extensive background literature or lengthy appendices– and it is not in their best interest to do so because it will be distracting for the committee. As the student presents their answers, they should be prepared to be interrupted by questions from the PhD Qualifying Exam Committee. If deemed appropriate by the PhD Qualifying Exam Committee, the student may also be questioned on any material germane to their completed coursework. Students are not expected to bring food/snacks and/or drinks for their committee members and/or other audience members to the exam; however, if their lab members and/or a friend(s) want to show their support for the student by providing food/snacks and/or drinks, that is permitted. Successful completion of the PhD Qualifying Examination will be determined by the PhD Qualifying Exam Committee, and students must pass the oral examination to continue in the PhD Program. At the discretion of the PhD Qualifying Exam Committee, a student may be allowed at most two attempts to pass the PhD Qualifying Examination.

2.8.8 TEACHING ASSISTANTSHIP (TASHIP)

All PhD students must participate in BME teaching assistantships (TAship) for BME undergraduate or graduate courses as part of the academic requirements for the BME PhD degree, regardless of their source of funding for the stipend or fellowship. PhD students *may not* fulfill their TAship requirement by serving as a TA for courses taught by the BIMS program or by other departments or schools (even if they are cross-listed in BME). The TAship experiences will normally be performed in the second and third years of doctoral study. When possible, students will be assigned to TA for one "lecture-focused" and one "lab/project-focused" course to give students diverse experiences in their teaching experiences as a TA. Prior to the start of each semester, graduate students who are eligible to TA will be contacted by the Graduate Program Director and asked to rank order the courses that they would like to TA for that semester/year. The Graduate Program Director will assign TAships based on students' interests to the extent possible and also based on the Department's TA needs in a given semester. When students are assigned a TAship they must register on SIS for their TAship, and at the end of the semester of TAing they will be assigned a grade of either "satisfactory" or "unsatisfactory" by the instructor of the course for which they are serving as TA. All PhD students t are expected to TA for two courses and receive grades of "satisfactory" for both TAships. However, there are exceptions: 1) MSTP students only TA for one class, and 2) students who transferred from another PhD program where they TAd (once or twice) may be granted special exception from BME Graduate Program Committee to TA for one classe in BME, but they need to submit a written petition to the Graduate Program Committee to ask for approval. Note that participating in the "SEAS Teaching Fellowship Program" does not fulfill a TA requirement.

MS students may petition to TA and if chosen, will be paid support equal to the PhD GTA support for a 10 hour TAship. ME students may petition to TA, but would be hired as hourly employees and MUST have approval of the ME Program manager.

2.8.9 GOING PRO

Biomedical Engineering PhD graduates are well-positioned to be leaders in industry. Going Pro is a unique opportunity for professional development, a significant deficiency in many graduate programs across the nation. Through the curriculum, mentoring programs, and University-sponsored internships, alums of this program will be well-positioned to lead in the biomedical engineering industry. There are three key elements of the Going Pro:

Industry Internship: Participants in Going Pro will be supported, if funds are available (e.g., from the PhD advisor, company, BME Dept., PhD Plus or elsewhere), to participate in a two-month industry internship approved by the BME Graduate Program Committee.

Mentoring: Students will select an alum of the department and with whom they are required to meet at least annually throughout their training.

Course: Going Pro participants will take a 1-credit course in the fall semester focused on professional development and BME industry.

Application Process: Students that have completed their 2nd year of the PhD program and successfully passed their PhD Qualifying Exam are invited to apply. Please contact Don Griffin, Graduate Program Director, with any questions.

2.8.10 PHD PROPOSAL DEFENSE

1. **Purpose**: The student's Doctoral Advisory Committee will assess the quality of the student's research plan (including hypotheses to be tested, experimental design and methodology, etc.).

2. **Timing**: The PhD Committee composition needs to be approved by filling out the appropriate form and sending it to the Graduate Coordinator who will send it via DocuSign to the the Graduate Program Director' prior to scheduling the Proposal Defense. This will then be forwarded to SEAS for final approval. ***SEAS approval must be completed by two weeks prior to any proposal.*** The student is responsible for working with their Advisor and their PhD Committee to schedule a date for the defense and reserve a room for the defense. There is no BME or SEAS requirement stating that a student must have submitted or already published a peer-reviewed

manuscript(s) prior to defending their PhD Proposal; however, PhD advisors and committees may apply a publication requirement at their discretion. Upon selecting a date and location, the student is then responsible for notifying the Graduate Program Coordinator ***at least 2 weeks prior to defense*** so the defense can be advertised publicly at ***least one week before the defense***. The written dissertation proposal must be submitted to the PhD Committee ***one week before*** the scheduled oral dissertation proposal defense, which consists of a public oral presentation (approximately 45-50 min. long) during which the student highlights the existing knowledge and the proposed new study. This will be followed by a private question and answer period with the PhD Committee. Other members of the UVA faculty, beyond the PhD Committee, are allowed to attend the private question and answer period. The total duration of the dissertation proposal defense is typically three (3) hours, at the discretion of the student's PhD Committee. Students are not expected to bring food/snacks and/or drinks for their committee members and/or other audience members to the PhD Proposal Defense; however, if their lab members and/or a friend(s) want to show their support for the student by providing food/snacks and/or drinks, that is permitted. IMPORTANT NOTE: ***It is SEAS Policy that the PhD Dissertation Defense and the PhD Proposal Defense may not occur in the same semester.***

3. **Defense Committee Composition**: At least four (4) members of the Doctoral Advisory Committee must be present for the proposal defense in accordance with SEAS guidelines, including two (2) primary BME faculty and one "outside" SEAS faculty member (see table in §2.8.2 for more details).
4. **Proposal Format**: The written proposal should follow the general format of an NIH R01 grant proposal, and include the following sections (page limits include figures/tables):
    - Specific Aims (1-page limit)
    - Significance (typically 1-1.5 pages)
    - Innovation (typically 0.5-0.75 pages)
    - Approach (typically 5-7 pages) – should include "Expected Outcomes and Alternative Methods"
    - References (no limit on the number of citations)

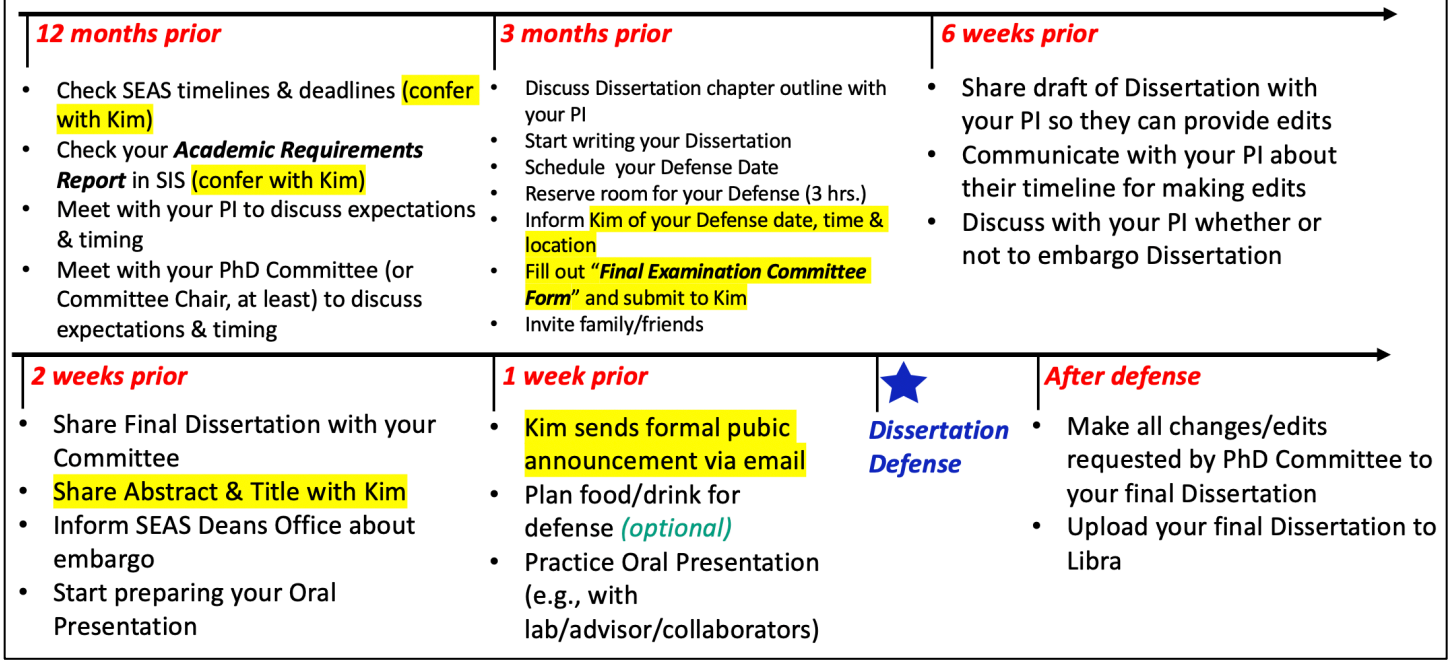
    Figures can be embedded in the text.

    Formatting guidelines can be found at: http://grants.nih.gov/grants/grant_basics.htm. Note that 11-point Arial font with 5" margins on all sides (left, right, top, bottom) is the most common format. While the Specific Aims page should not exceed one page in length, the page limits for the rest of the proposal (Significance, Innovation, and Approach) are more flexible and different faculty have different expectations (ranging from 7-12 pages, generally speaking). Therefore, the student should talk with their PhD advisor and PhD Committee Chair to clarify expectations for the page-length of the PhD Proposal.

2.8.11 PHD DISSERTATION DEFENSE

The doctoral dissertation should be typed according to the format of the School of Engineering and Applied Science. Please refer to the recommended timeline below to guide your activities leading up to your dissertation defense:

Timeline Summary



1. **Purpose**: To demonstrate competence in the field of the dissertation research and the quality of the dissertation for publication in scientific journals.

2. **Timing**: As the PhD student enters their 5th year in the PhD program, if not sooner, the PhD student and their advisor should discuss and come to agreement about the timeline (and any associated expectations) for the student to write and defend their dissertation. There is no BME or SEAS requirement stating that a student must have submitted or already published a peer-reviewed manuscript(s) prior to defending their PhD Dissertation; however, PhD advisors and committees may apply a publication requirement at their discretion. The members of the student's PhD Committee should also be informed about the student's plan, expectations, and timeline, particularly if there is disagreement between the student and the PhD advisor about the timing, plan and/or expectations for scheduling the dissertation defense. If there is disagreement between the PhD Committee and/or the PhD advisor and/or the student, the student and/or advisor and/or members of the PhD Committee are encouraged to talk to the BME Graduate Program Director or BME Departmental Ombudsman, who can serve as a mediator in these decisions. At completion of writing an approved dissertation. The properly formatted draft with all the figures should be submitted to the Doctoral Advisory Committee **at least two weeks** before the examination. Using the Final Examination Committee form, inform the Graduate Program Coordinator of the date selected for your defense, provide the title and a short abstract of the work, so that an announcement of the defense may be sent out. Public announcement of the dissertation defense **must be made one week prior** to the scheduled examination date. Failure to do so will result in the rescheduling of the dissertation defense. IMPORTANT NOTE: It is SEAS Policy that the PhD Dissertation Defense and the PhD Proposal Defense may not occur in the same semester.

3. **Formatting and Approval of the PhD Dissertation Document**: The PhD Dissertation is a unique and individualized document that represents the student's own scientific and engineering interpretation/thinking about the research and design accomplishments they have made during their time in the BME PhD training program. The PhD student should take *tremendous pride* in their accomplishments and embrace their individuality as a scientist and engineer when assembling and summarizing the body of work from their PhD training experience. Being at a point where a student is writing their dissertation signifies that he/she/them has truly become an expert in a specific body of knowledge and this expertise should shine through the document, demonstrating mastery, intellectual ownership, and tremendous accomplishment!

Because the PhD is a mentored experience, the student's ideas and work products will (and should be), influenced by the PhD advisor and other faculty, students, and collaborators that the student has worked with during their time in the PhD training program. Hence, it is common for students to include data, figures, and /or schematics from lab-mates and other collaborators in the Dissertation, and this is allowable as long as these items are given proper attribution to their respective authors, as indicated in the figure caption.

Students and their advisors may choose to present all of the work products of the student's PhD experience or a sub-set of work products – and the decision of what specific content should be included/excluded from the Dissertation should be made by the student in consultation with the PhD advisor. For example, sometimes (but not always) students and advisors elect to include "negative data" or "unpublished results" or "failed engineering designs" in the Dissertation because they deem them to be an important component of the PhD experience that more fully represents the body of work that the student has produced. Dissertations are considered "publicly available" documents once they are defended, and there are several options for limiting access or placing an embargo on publishing dissertations online. For more information about this, please see: https://www.library.virginia.edu/libra/etds/authors-rights-embargoes. Completed dissertations are submitted online to Libra after the defense. Please refer to the Access and visibility options | UVA Library (virginia.edu) for more information about this, and pay close attention to guidelines about copyright concerns Copyright essentials for scholarly work | UVA Library (virginia.edu) if you are including text or figures from previously published papers or books.

When the student embarks on writing their dissertation, they should first meet with their advisor to discuss an outline of the chapters – and an outline for each individual chapter. Example bound PhD dissertations from past PhD students of the BME program are available for viewing in the BME Library on the 2nd floor of MR5, and students are encouraged to peruse them to get ideas for structure, organization, composition, and formatting. Students are also ***highly encouraged*** to talk with prior graduates of their own lab to get example digital versions that can be utilized as examples or templates for formatting.

All PhD dissertations should include:

- A title page
- Acknowledgements section
- Table of Contents
- List of Figures, Schematics, Tables
- Abstract (that summarizes all of the research/design described in the Dissertation)
- Overarching Introduction Chapter (that summarizes the motivation for the research/design described in the Dissertation and any necessary background information needed for a reader to understand what will be presented in the subsequent chapters)
- Chapters that describe the background, methods, results, and conclusions from the PhD research/design activities undertaken during the PhD training experience. Typically students who have published papers make each of their papers a stand-alone chapter of their dissertation.
- Overarching Conclusion/Discussion/Future Work Chapter(s), which should include: 1) an overarching summary of the research/design presented in the Dissertation, 2) a discussion of the limitations of the research/design presented in the Dissertation, 3) statement of the real-world impact of the body of work and scholarship presented in the Dissertation, and 4) a comprehensive and thorough discussion of future work.
- Bibliography. The dissertation is expected to be thoroughly referenced with the most pertinent literature, including current/recent papers, as well as historical papers in the field of research. Note that sometimes when students have published multiple papers and each paper is presented as a stand-alone chapter of the Dissertation, the bibliography for each chapter is self-contained within the chapter, and this is allowable;

however, a bibliography for the remaining chapters (e.g., Introduction and Conclusion) should also be provided somewhere as part of the Dissertation.

- Figures/Tables/Schematics. These may be displayed one per page with corresponding captions underneath, or formatted in-line with the main body text with caption boxes also embedded within the main text body. These may be presented at the point in the body of the text where they are referred to, or at the end of the Dissertation document in a comprehensive collection. These are stylistic choices that that student can make in consultation with their PhD advisor, but it is important to make it clear to the reader where these items can be found in the document – e.g., by including a list of Figures, Schematics, Tables after the Table of Contents.

Importantly, **there are no specific formatting requirements** (e.g., total page length, font types or sizes, line spacing, margins) for the PhD dissertation; therefore, each student should embrace their individuality and contemplate their own preferences and personal style and let that shine through in their dissertation formatting decisions. However, there are some guidelines and templates available online that you may find helpful when getting started:

- Columbia University Guidelines and Template
- Harvard University Guidelines
- Northwestern Guidelines

The student should draft the PhD dissertation on their own and share it with their PhD advisor (and any other collaborators whose work is included) for their approval prior to sharing it with their PhD Committee. Because PhD Dissertations tend to be lengthy documents, it is suggested that the student provide a complete draft to the PhD advisor (and collaborators) at least 2 weeks prior to when they need to provide it to their PhD Committee, so that the advisor (and collaborators) has sufficient time to read, edit, and the student can make changes accordingly before providing the final version to the PhD Committee. The properly formatted complete draft (including all the figures and references) should be submitted (electronically or paper copies if so requested by committee members) to the PhD Committee **at least two weeks** before the PhD Dissertation Defense.

4. **Defense Committee Composition**: The Examining Committee for the dissertation defense is the student's PhD Dissertation Committee (see §2.8.2 and §2.8.3 for specific requirements for the committee composition). All members of the committee must be present during the defense—either virtually (online) or in person.
5. **Subject**: Defense of dissertation and questions about subject areas related to research field or arising from discussion of thesis work.
6. **Format of the Oral Defense**: The first part (40-50 minutes) is an oral presentation of the thesis, which is open to the public. It is followed by a 1-2 hour oral defense question and answer period with PhD Committee and any other interested UVA faculty. Students are not expected to bring food/snacks and/or drinks for their committee members and/or other audience members to the PhD Dissertation Defense; however, if their lab members and/or a friend(s) want to show their support for the student by providing food/snacks and/or drinks, that is permitted.
7. **Failure of the PhD Dissertation Defense**: While exceedingly rare, it is possible for the student to fail the PhD Dissertation Defense. The possibility for re-examination is determined by the PhD Committee. The best way for the student to avoid failure is to have clear and frequent communication with their PhD advisor and PhD Committee throughout the PhD training experience about everyone's expectations and whether or not expectations have been met; so there should be no surprises when it comes to the PhD Dissertation Defense.

2.8.12 PUBLICATION OF PHD DISSERTATION

Students will upload their thesis or dissertation to LIBRA upon approval of the Exam Committee (after final exam forms have been submitted). Paper bound copies are no longer required. Students should discuss any copyright/embargo issues with their mentors and chairs prior to the upload. If students and advisors wish to embargo their Dissertation, please read the important information below. For more information on LIBRA and

instruction of how to upload, please visit: Access and visibility options | UVA Library (virginia.edu)Although the final version of the dissertation will be published electronically online by the UVA Library free of charge, students may wish to order bound paper copies, and there are services that do this (approximately $100 per bound copy), such as: https://phdbookbinding.com/.

Embargo Timeline: Since the embargo is placed before the student uploads to LIBRA, the fully approved embargo request form must be submitted to the graduate office along with the student's final defense paperwork- make sure this form is submitted to the Graduate Coordinator two weeks prior to the defense.

Policy Statement from PROV-014: Submission of electronic Theses and Dissertations (full policy below)

All graduate students who are required to submit a thesis or dissertation as a condition of their degree program will do so electronically through Libra, the permanent digital repository of the University Library. The University upholds the tradition of making research available to other scholars; therefore, electronic thesis or dissertation (ETD) deposits are normally publicly available upon degree conferral. In limited circumstances, however, access to the ETD in Libra may be restricted or placed under an embargo.

Upon consultation with their thesis or dissertation committee, students may choose either a public access or limited access option upon depositing an ETD in Libra. Schools should verify that such consultation has taken place (such as an addition to the graduation form). Limited Access may only be requested for periods of less than five years.

Upon consultation with their thesis or dissertation committee and approval from their dean's office, students may also choose to place an embargo on an ETD deposited in Libra. Requests for ETD embargo must be transmitted to the Library by the dean's office in the school awarding the degree. The limited circumstances warranting an embargo may include efforts to protect intellectual property during a patent application process, maintain confidentiality agreements protecting third-party proprietary information, or provide sufficient time to publish a dissertation in book form or as journal articles. Initial embargo periods may be requested for periods of up to five years and may be extended at the discretion of the dean's office of the student's school. In limited circumstances, and at the request of the student, a dean's office may petition the provost's office to extend the initial embargo period beyond 5 years.

2.8.13 PhD Graduate Exit Interview

Following the successful completion of a PhD Dissertation Defense, students will be invited to participate in a 30-minute long Exit Interview with the Graduate Program Director. The purpose of the interview is to obtain feedback from graduates about their experiences in the PhD program so that it can inform the Graduate Program Committee about ways they can improve the graduate experiences for future students. Graduates will be provided with the interview questions in advance, and they will be invited to edit the documentation of their responses, which will only be shared with the Graduate Program Committee in a de-identified manner.

2.8.14 Changing from the PhD Program to the MS Program

At any point in time with the permission of the student's PhD advisor(s), a student may request to change from the PhD Program to the MS Program. If a student is considering this path, they should talk with their PhD advisor(s) and the Graduate Program Director to understanding the timing, financial, and research-related implications of making this change. Making the official switch to the MS Program from the PhD Program also requires the student to submit and obtain approval of the "Change of Degree Program" form to SEAS, with the support of the Graduate Coordinator.

3. STUDENT ACTIVITIES, FINANCIAL AID, and SUPPORT

3.1 GRADUATE BIOMEDICAL ENGINEERING SOCIETY (GBMES) CHAPTER AT UVA

The University of Virginia student chapter of the Biomedical Engineering Society (BMES) plays several roles within the department. Primarily, the chapter works to promote the exchange of ideas among students and faculty. We coordinate various educational and professional development, social, sporting, and service events throughout the year while reaching out to students who are interested in the application of science and engineering principles to medicine. Our chapter is comprised of undergraduate and graduate students within the BME department as well as students from other university departments who have an interest in BME. Our chapter has a strong record of service within the UVa and central Virginia communities and has been recognized by the National Biomedical Engineering Society several times.

Our BMES student chapter is dedicated to promoting the personal and professional development of its members and enhancing the community of scholarship within the department and the university. Our core values include:

1. Fostering a welcoming environment for our diverse student body and the development of our members via participation in BMES general body meetings and attendance at national conferences, departmental symposia, and university-wide colloquia.
2. Enhancing the sense of community within the department, the university, and the central Virginia area via service events, orientation events for incoming students, jointly sponsored guest lectures with other student societies, sponsoring student-student and student-faculty interactions both within and outside of the classroom.
3. Increasing the chapter's visibility on the national scale via attendance and participation at national and international conferences, recruiting guest speakers from national corporations, and enhancing communication with the BMES national chapter through the president and vice president of graduate and national affairs. BMES typically has funds available to provide travel awards for students to help achieve this goal.

We are dedicated to improving understanding of the field of biomedical engineering, fulfilling the intellectual needs of our students, and assisting in their preparation for careers in biomedical engineering. BMES focuses much of its energy on identifying and reconciling the needs of its students and the larger community.

The Biomedical Engineering Society is devoted to fostering a collegial and collaborative environment between undergraduate students, graduate students, and faculty. To build a strong community we sponsor intramural sports teams, organize wine tasting tours, picnics, happy hours and bar nights, and other organized social activities. In addition to student activities, we help to coordinate and organize a faculty-student fall picnic and holiday party.

Our chapter holds approximately six meetings throughout the year that are open to undergraduate BME students, graduate BME students, and other non-BME students interested in the field. Example meeting agendas include grant writing and alumni panels. We invite you to browse through our website at https://engineering.virginia.edu/departments/biomedical-engineering/academics/bmes.

Our chapter has a strong record of excellence. We hope to continue this tradition and look forward to you joining us! There are several officer positions available for interested graduate students and a number of opportunities to help and contribute to BMES. Any questions, ideas, or suggestions regarding BMES can be directed to either the Graduate BMES President or Vice President (current list in appendix II).

3.2 FINANCIAL SUPPORT AND FELLOWSHIPS

Graduate PhD students in the Department of Biomedical Engineering are typically supported through a combination of Graduate Research Assistantships (GRAs), Graduate Teaching Assistantships (GTAs), appointments on training grants, and Fellowships. Students on GTAs receive partial tuition and stipend support in return for their effort in assisting with education in specific courses at the University. Specific requirements and expectations

will be defined by the instructor with whom the student is working. All doctoral students are required to participate as teaching assistants in BME courses as part of their academic degree requirements.

Students on GRAs receive tuition and stipend support in return for their contribution to a specific research laboratory in the Department. Since these funds originate from individual faculty research grants, requirements and expectations are determined by the Principal Investigator, usually the student's research advisor. Students are expected to contribute at least 20 hours per week during the academic year and 40 hours per week in summer.

The 12-month base salary for GRAs and GTAs is $36,771 for PhD students. Students receiving financial support ***are not allowed*** to work outside the University without prior approval from the mentor, BME Graduate Program Committee, and the SEAS Office of Graduate Programs. There are periodic adjustments to the base stipend level to reflect cost-of-living-increases. Health and dental insurance are provided as part of a PhD students' annual support. Enrollment occurs in July of each year and you will receive notices from student health directing you to the online enrollment site. Dental coverage will be reimbursed by the department for funded PhD students who submit receipts within 45 days of enrollment. Life change incidents may briefly open an enrollment window-please check with Student Health or the Graduate Coordinator for assistance.

In order to be eligible for full financial support, students must register for 12 hours in each semester (6 research hours in the summer). The hours may be any combination of course credits and research credits, or may be research only if all course requirements have been completed.

Students are encouraged to seek fellowship opportunities available to them from foundations, national societies, and the government, with the help of the faculty. All BME graduate students are members of the "BME Grad Studies" site on Collab which serves as a repository of information on graduate awards, fellowships, and scholarships.

The University offers free tax help to US and Permanent Resident students each year between February and April. You will receive a flyer via email when the services become available each year. Appointments can be made online at: www.cvilletaxaid.org. International students should begin any inquiries with Logan Hobbs https://issp.virginia.edu/taxes.

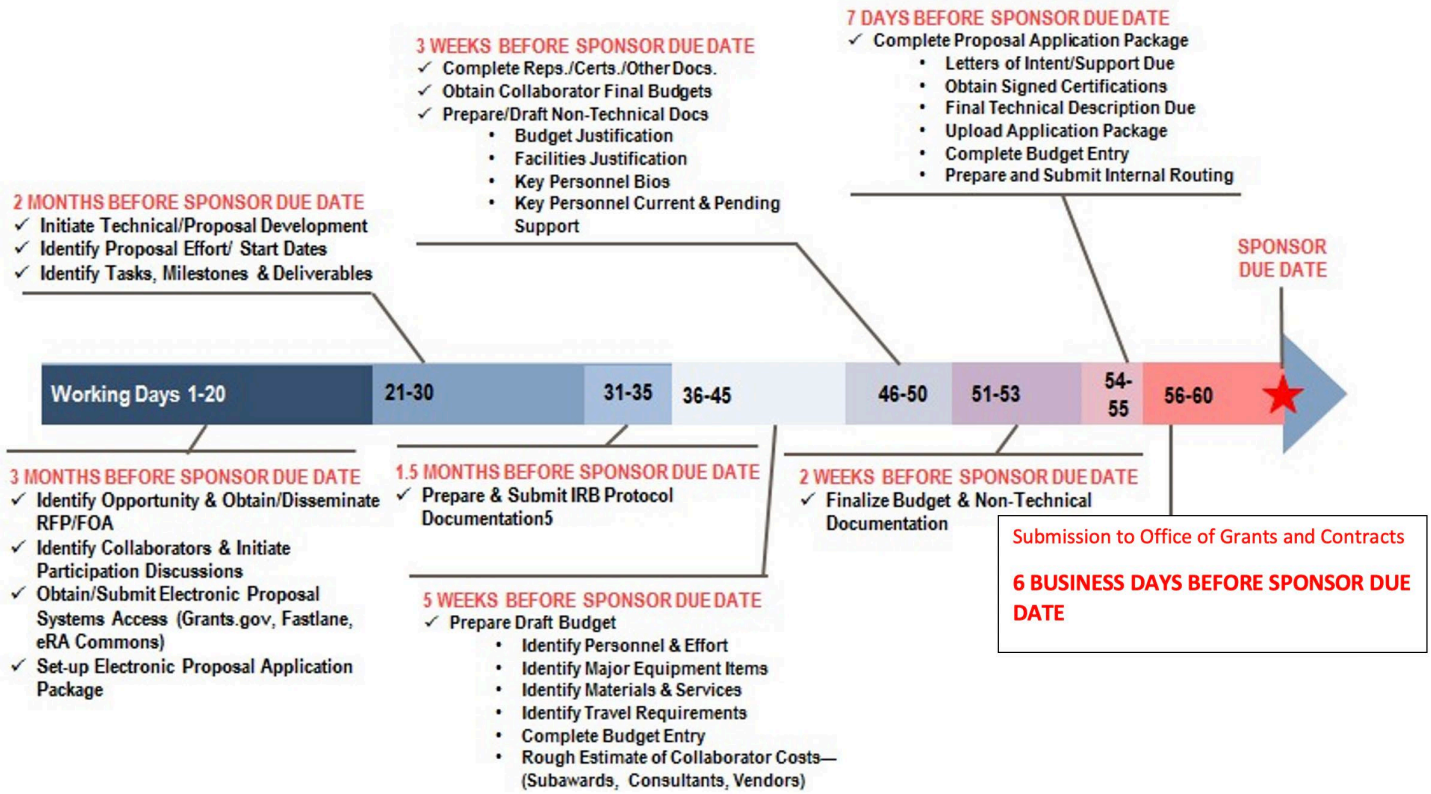
See pay chart/schedules in appendix.

A partial list of the internal and external fellowships is available below. Students are encouraged *to discuss with their faculty advisor for nominations well in advance of the application deadlines, and please note* ***the timing requirements*** *for submitting* ***external*** *grant/fellowship applications below.* Also, note that some PIs have their appointments in the School of Medicine and some PIs have their appointments in the School of Engineering, so before you think about submitting a fellowship application, please ask your PI which school they have their faculty appointment in because this will dictate who helps you with your fellowship/grant submission, as follows:

→ if you are mentored by a PI who has their faculty appointment in the School of Medicine (SOM), you will work with Connie Pace to submit your fellowship/grant application.

→ if you are mentored by a PI who has their faculty appointment in the School of Engineering and Applied Science (SEAS), you will work with someone in the SEAS Pre-award office to submit your fellowship/grant application, and your PI will be able to connect you to that person directly. ena-opra@virginia.edu

External Fellowships (note timing requirements below):



NSF Graduate Research Fellowship
Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellows
American Heart Association Predoctoral Fellowship
Ford Foundation Fellowship
RWJF Health Policy Research Fellowship
P.D. Soros Fellowship for New Americans
SREB Doctoral Scholars Program Fellowship
Graduate Women in Science National Fellowship
UNCF/Merck Graduate Science Research Dissertation Fellowships
American Association of University Women American Fellowship
Office of Navajo Nation Scholarship & Financial Assistance Scholarship
American Indian Graduate Center Fellowships
NASA Harriett G. Jenkins Predoctoral Fellowship Project
NDSEG Graduate Fellowship
DoD SMART Fellowship
Merck Graduate Science Research Fellowships
Society for Women Engineers (SWE) Scholarships
Schlumberger Foundation Faculty for the Future Fellowship
Golden Key Fellowships
Microsoft PhD Fellowship
Women Techmakers Scholars Program
American Society for Microbiology Graduate Research Fellowship
ARCS Award: Achievement Rewards for College Scientists

The VPR's office provides access to two searchable grant data bases- Pivot and Grant Forward. You may search by field, and ***are encouraged to*** set up alerts as applications open and deadlines approach.
https://researchdevelopment.vpr.virginia.edu/search-funding-pivot-and-grantforward

3.3 1ST YEAR PHD ROTATION PROGRAM

Some PhD students may enter the PhD program with signed offer letters that promise to offer them research rotations through 2, 3, or 4 labs during their first semester in the PhD program. Students are expected to fully complete all of the rotations outlined in their offer letters and in a sequence that is decided by the faculty participating in the student's rotation. The first semester rotation program is designed to broaden the perspective of students in biomedical engineering research and to help them identify a lab and a PhD advisor for their dissertation research. Activities in the laboratory may consist of reading the literature, running and/or assisting with designated experiments, learning the specific aims and rationale of the lab's research, attending collaboration meetings, lab meetings, and/or journal club meetings, and preparing a summary (written and/or oral presentation) of their research experiences during the rotation. At the end of the first semester, PhD students who have participated in the rotation program will be placed in a lab by the BME Graduate Program Director based on the student's preferences and the preferences of the advisors who hosted the student for their rotations. If the student has not been placed into a lab by the end of the first semester, they may be invited to complete additional rotations or they may be excused from the PhD program at the discretion of the BME Graduate Program Committee.

3.4 BME DEPARTMENT SEMINARS AND STUDENT RESEARCH SYMPOSIA

During the academic year, BME holds their Seminar Series, a weekly event that brings together faculty, students, and clinicians across disciplines from the University and Medical Center to learn about new research and technologies in the biomedical sciences and engineering. Research presentations are given by prominent speakers from within the university community and nationally recognized biomedical engineers, cell and molecular biologists and clinicians in academia and industry. There are also special seminars presented throughout the year such as: a BMES student chapter sponsored speaker, BME Graduate Student Research Symposium, and the BME Distinguished Speaker Seminar Series. The Distinguished Speaker series is a great opportunity for all of us to hear from a prominent and internationally recognized leader in the field of biomedical science and engineering. These may include department chairs, national academy members, and industrial leaders in biotechnology.

All students and faculty are expected to attend each weekly Friday seminar. A "Meet the Speaker" session is open for all graduate students following the seminar presentation, and provides a unique opportunity for students to engage with seminar speakers in a more informal manner.

3.5 STUDENT TRAVEL

All students, particularly those in the PhD program, are encouraged to attend national, and where possible, international conferences with their laboratory groups. Attendance at such meetings gives students opportunities to meet and interact with researchers with a broad range of interests. These experiences are instrumental in assisting students to develop, formulate, and modify their Master's and PhD projects and career plans. Also, excellent Career Fairs or networking opportunities exist at most major meetings.

Some student fellowships and traineeships have specific allotments for travel and other related purposes, which is returned to the funders if unused in the allotted timeframe. Students working on research projects can sometimes arrange to have special expenses paid by a research grant. Consult your project director or faculty advisor.

In exceptional circumstances, students seeking travel and other funds for paper presentation who have exhausted other possibilities for funding their travel should submit a request accompanied by the research paper to the department Chair. Prior approval is required and is dependent upon available funds. Students should also be familiar with state regulations governing, receipts to justify the expenditures, the use of state cars and the limits on lodging and meal costs. Students are responsible for making their own travel arrangements in compliance with University requirements regarding travel.

Make sure to follow all UVA special requirements for international travel.

3.6 Office Space Assignment

Students may use desks in their advisor's laboratory or office space. Other spaces in the department are available upon request for student meetings or activities. The BME Department also has a small collection of books and journals in the Library (Rm. 2019). This is a reading/reference library and journals and books should not be removed from the room.

3.7 Use of Computer Equipment, Library, and External Facilities

BME Students are welcome to use network printers, and other technology resources for academic purposes. Laboratory computers and research equipment should only be used with permission from the responsible laboratory director.

University computing accounts are managed by the Information Technology Services (ITS) group and are used by BME to access network resources. ITS also provides limited network file storage at no cost to users. Please contact BME IT Support with questions.

Computers and other tangibles purchased with University funds, research grant funds, or Fellowship money but purchased through the University, become the property of the University and must be surrendered prior to graduation.

3.8 Forms

A listing of all SEAS required forms can be found at: Important Forms for Graduate Students | University of Virginia School of Engineering and Applied Science

In addition to the forms published on the SEAS website, there are several forms that BME requires that are not available on the SEAS website. These include the Plan of Study forms for all of the degree plans and the Educational Elective proposal and summary forms for the PhD plan. The forms can be accessed via the BME Graduate Program Collab site: https://collab.itc.virginia.edu/portal. You will be subscribed to this Collab site once you have activated your UVA email account.

3.9 Email Lists in BME

BME has a number of different email list-serves, presented in the table below, that students can use to reach different populations of our BME community. When emailing to list serve that has a **moderator**, please abide by the UVA Provost's Policy on Mass Digital Communications.

Email	Population reached	Moderator
bme-fac-primary@virginia.edu	All faculty with primary appointments in the BME department	BME Dept. Chair
bme-fac-joint@virginia.edu	All faculty with primary or joint appointments in the BME department	BME Dept. Chair
bme-fac-joint@virginia.edu	All faculty with primary, joint, and courtesy appointments in the BME department	BME Dept. Chair
bme-students@virginia.edu	All BME graduate students (PhD, MS, ME)	BME Graduate Program Director
bme-major@virginia.edu	All BME undergraduate students	BME Undergraduate Program Director
bme-student-run-list@virginia.edu	All BME graduate students (PhD, MS, ME)	(Nobody)

bme-postdoc@virginia.edu	All BME postdoctoral trainees and research scientists	(Nobody)

CHECKLIST FOR MASTERS (ME and MS) PROGRAMS

_____ MS Plan--Request an advisor. Due no later than the end of the 1st semester

_____ ME and MS Plans --Meet with your advisor and prepare a **Plan of Study** form. Due no later than end of 1st year

_____ ME Plan--Submit Plan of Study to advisor by the end of your first term. Project completion timeline TBD by advisor and student, but anticipated to be completed within 12 months.

_____ MS Plan--written draft of thesis proposal to advisor and committee. Ideally by the end of your first year.

_____ MS Plan--Schedule Final Defense of Thesis. No later than 5th year.

This examination is public and announcement of it must be distributed at least 7 days in advance.

Two forms must be prepared in advance of the scheduled defense: **Report on Final Examination** and **Thesis Outcome Assessment**. Your Graduate Program Coordinator will prepare these using the information you submit for the public announcement – Date, Time, Location, Committee Members Names, Title and Abstract.

There are specific deadlines set by the Registrar's Office and the SEAS Deans Office that must be met in order to complete your degree requirements to have your degree conferred during the applied term. Once you apply for your degree you will receive the notification emails with those specific dates. You MUST adhere to those dates or you will be removed from the degree candidate list.

_____ ME Plan--Complete 3 program assessments and submit to The Graduate Student Coordinator.

_____ MS Plan--Apply for your degree in the Student Information System (SIS). **Dependent on defense date.**

Graduation application DUE DATES – October 1 for January graduation, February 1 for May graduation, and June 1 for august graduation.

_____MS Plan--Upload your dissertation to LIBRA.

Due date – refer to date published by the SEAS Graduate Office for the term you have applied for graduation.

CHECKLIST FOR PHD PROGRAM

_____ Appoint your PhD Committee (the composition can change over time as you progress through the program)

_____ Submit a **Plan of Study** form→ MUST BE COMPLETED PRIOR TO SCHEDULING PhD QUALIFYING EXAM

_____ Schedule and take the Ph.D. Qualifying Exam

_____ Complete TAship requirements

_____ Propose EEEs (fill out one "EEE proposal form" for each EEE, and your PhD Committee needs to sign them)

_____ Submit written draft of PhD Proposal to advisor and then, if approved by him/her/them, to your PhD Committee

_____ Schedule and do your PhD Dissertation Defense Proposal with PhD Committee

_____ Complete EEEs (fill out one "EEE summary form" for each EEE, and your PhD Committee needs to sign them)

_____ Schedule and do your PhD "Permission to Write" meeting (this is optional, but strongly encouraged)

_____ Schedule and do your PhD Dissertation Defense with PhD Committee. This examination is public and announcement of it must be distributed at least 7 days in advance.

Two forms must be prepared in advance of the scheduled defense: **Report on Final Examination** and **Dissertation Outcome Assessment**. Your Graduate Program Coordinator will prepare these using the information you submit for the public announcement – Date, Time, Location, Committee Members Names, Title and Abstract.

There are specific deadlines set by the Registrar's Office and the SEAS Deans Office that must be met in order to complete your degree requirements to have your degree conferred during the applied term. Once you apply for your degree you will receive the notification emails with those specific dates. You MUST adhere to those dates or you will be r***emoved from the degree candidate list.***

_____ Apply for your degree in the Student Information System (SIS). **Dependent on defense date.** TERM DUE DATES – by October 1 for January graduation, February 1 for May graduation, and June 1 for August graduation.

_____ Upload your dissertation to LIBRA. Due date – refer to date published by seas grad office for term you have applied for graduation.

_____ Submit Survey of Earned Doctorates. Print completion certificate, scan and email to the SEAS Graduate Engineering Registrar. Due date – refer to date published by SEAS Graduate Programs Office for term you have applied for graduation.

_____ Schedule and do your Exit Interview with the BME Graduate Program Director

APPENDIX I: DEPARTMENTAL COMMITTEES AND DIRECTORS

UNDERGRADUATE PROGRAM DIRECTOR:
Shannon Barker
Email: sb3xk@virginia.edu

GRADUATE PROGRAM DIRECTOR:
Don Griffin
Email: dg2gf@virginia.edu

GRADUATE PROGRAM COMMITTEE:
Chair: Don Griffin
Members: Silvia Blemker, Don Griffin, Gustavo Rohde, Eli Zunder, Mohammad Fallahi-Sichani, Jason Papin (Graduate Senior Advisor)

MS AND PHD GRADUATE RECRUITMENT AND ADMISSIONS COMMITTEE (24-25**):**
Chair: Kevin Janes
Student Co-Chairs: Sami Felton and Shay Ladd
Staff support: Recruitment Gina Talley
Admissions Kim Fitzhugh

ME GRADUATE RECRUITMENT AND ADMISSIONS COMMITTEE (24-25**):**
Chair: Don Griffin

SEMINAR COMMITTEE:
Chair: Mohammad Fallahi-Sichani

DIVERSITY COMMITTEE:
Chairs: SEAS Kristen Naegle
SoM Mete Civelek

APPENDIX II: Graduate BMES (GBMES) Student Chapter Officers 2024-2025

President: Wisam Fares
International Students Chair: Yonatan Degefu
Outreach Chairs: Manasi Krishnakumar and Kareem El Ghazawi
Student Advocate: TBD
Diversity, Equity, and Inclusion Chairs: Lexi Wallace, Kaitlyn Wintruba, and Tanya Cruz
Recruitment Chairs: Sami Felton and Shay Ladd
Professional Development Chairs: Hayley Sussman and Danielle Klunk
Seminar and Symposium Chairs: Lavie Ngo and Malcolm O'Malley
Social Chairs: Julian Vitello and Stefany Maslova
Sustainability/ Green Labs Chair: Audrey Kidd
ME Chairs: TBD

APPENDIX III: IMPORTANT AND USEFUL STUDENT LIFE RESOURCES

General UVA information:
BME home page: https://engineering.virginia.edu/bme
BIMS home page: http://www.bims.virginia.edu
UVA Graduate Guide: http://www.virginia.edu/graduateguide/
UVA Health System home page: http://www.med.virginia.edu/
School of Engineering: https://engineering.virginia.edu/
School of Medicine: http://www.healthsystem.virginia.edu/education-research/medschl.cfm

Academic information:
Academic Calendar: http://www.virginia.edu/registrar/calendar.html
Course Offering Directory: http://www.virginia.edu/registrar/ -- click on Course Offering Directory link
Registrar's Office: http://www.virginia.edu/registrar/
Summer Session Office: http://www.virginia.edu/summer
SEAS Forms: https://engineering.virginia.edu/graduate-study/current-grad-students/academic-planning/important-forms-graduate-students
Lous List: https://louslist.org/ Informal course listing pages

Students with disabilities or learning needs:
BME strives to be as accessible as possible. If you anticipate any issues related to the format, materials, or requirements of your coursework, please meet with instructors ***as early as possible*** outside of class to explore potential options. Students with disabilities may also wish to work with the Student Disability Access Center (SDAC) to discuss a range of options to removing barriers courses, including official accommodations. SEAS has an SDAC advisor, Courtney MacMasters, physically located in Engineering. You may email her at cmacmasters@virginia.edu to schedule an appointment. For general questions please visit the SDAC website: *sdac.studenthealth.virginia.edu*. If you have already been approved for accommodations through SDAC, please send your accommodation letter to your instructors to develop an implementation plan together.

Religious accommodations
It is the University's long-standing policy and practice to reasonably accommodate students so that they do not experience adverse consequences when sincerely held religious beliefs or observances conflict with academic and research requirements. Students who wish to request accommodation for a religious observance should submit their request to instructors by email ***as far in advance as possible***. Graduate students are encouraged to discuss research-based accommodations with their advisors in advance of any religious event so that lab members may support one another in the needs of each student, while maintaining productivity of the lab. Students who have questions or concerns about accommodations for religious observance or religious beliefs may contact the University's Office for Equal Opportunity and Civil Rights (EOCR) at *UVAEOCR@virginia.edu* or 434-924-3200.

Library and Computing Facilities:
Claude Moore Health Sciences Library: https://guides.hsl.virginia.edu/home
PubMed: https://www.ncbi.nlm.nih.gov/pubmed?otool=uvirlib
ITC Web: http://www.itc.virginia.edu
OVID Medline
UVA Research Computing: https://www.rc.virginia.edu/
UVA Library Research Data Services + Sciences: https://data.library.virginia.edu/

Career Planning and Development:
Engaging in career development is an important part of the student experience. For example, presenting at a research conference, attending an interview for a job or internship, or participating in an

extern/shadowing experience are not only necessary steps on your path but are also invaluable lessons in and of themselves. Most labs will encourage and support activities related to career development. Many conferences offer travel grants to students, and SEAS and BIMs may have student representatives at various conferences.

Office of Career Planning and Placement: http://www.career.virginia.edu/
SEAS Office of Engineering Career Services: http://www.seas.virginia.edu/careerdevelopment/
SEAS Professional Development: https://engineering.virginia.edu/future-grads/professional-and-career-development-graduate-students
Handshake: https://career.virginia.edu/handshake
UVA PhD Plus: https://phdplus.virginia.edu/
Tomorrow's Professor Today: https://cte.virginia.edu/programs-grants

Resources for Underrepresented Minority Students and Women in Science:
Graduate and Postdoctoral Diversity Programs: https://graddiversity.virginia.edu/
Center for Diversity in Engineering: http://www.seas.virginia.edu/admin/diversity/
Black Graduate and Professional Student Organization (BGPSO): https://www.facebook.com/bgpso/
Graduate Student LatinX Organization (gradLatinX): https://www.facebook.com/groups/UVAgradLatinX/
Society for Women Engineers (SWE): https://www.facebook.com/groups/UVAGradSWE
Women in Math and Science (WIMS): http://wimsuva.wixsite.com/wims-uva
LGBTQ Center: https://lgbtq.virginia.edu/
Nursing Mother Room Locations: http://www.hr.virginia.edu/news-events/news/nursing-mothers
Parental Leave Policy: http://uvapolicy.virginia.edu/policy/PROV-028
Report a Barrier: https://reportabarrier.virginia.edu/
UVA Title IX: https://eocr.virginia.edu/title-ix
Office of African American Affairs: https://oaaa.virginia.edu/
Diversity at UVA: https://vpdiversity.virginia.edu/
President's Commission on Slavery and the University: https://slavery.virginia.edu/

Housing Resources:
International Center Temporary Student Lodging: https://internationalcenter.virginia.edu/lodgings
On-grounds graduate housing: https://housing.virginia.edu/graduate-students
Off-grounds housing: https://offgroundshousing.student.virginia.edu/
Housing Division: http://www.virginia.edu/housing/

Confidential Resources:
Counseling and Psychological Services: https://www.studenthealth.virginia.edu/caps
Faculty Employee Assistance Program: https://uvafeap.com/
Maxine Platzer Lynn Center: http://womenscenter.virginia.edu/
UVA's University Ombuds: Homepage | University Ombuds (virginia.edu)
UVA Medical Center, including the Emergency Department* (434) 924-2231
Student Health: Gynecology* (434) 924-2773
Student Health: Psychologists in the Student Disability Access Center (SDAC): (434) 243-3915
https://www.studenthealth.virginia.edu/student-disability-access-center/accommodation-services
UVA Teen and Young Adult Health Center**: (434) 982-0090 https://childrens.uvahealth.com/services/teen-health
* The University's Medical Center Emergency Department and the Elson Student Health Center Gynecology Department are the only local facilities with nurses who are specially trained to collect evidence for victims of sexual assault; that evidence collection must occur within 120 hours of the assault. According to the Virginia Department of Forensic Science, some types of forensic evidence may be collected for up to 120 hours after a sexual assault; however, the sooner the care is received the more options are available for evidence collection and/or medical treatment. The UVA Emergency Department is open 24 hours a day, 365 days a year. The Elson Student Health Center is open Weekdays from 8:00 AM - 5:00 PM and available after hours at (434) 297-4261.
** Provides health care for ages 12 to 26.

Other useful information:

UVA Collab: https://collab.itc.virginia.edu/portal - BME Grad Studies

Athletics: http://virginiasports. com/

CAV Care- Information pages on sexual violence community prevention and support options for victims and survivors: Home | CavCare (virginia.edu)

The University of Virginia is committed to ending sexual violence and providing care, support, and resources to those who experience it.

CAVCARE infographics and visual aids Infographics and Visual Aids | CavCare (virginia.edu)

These pages are full of easy to understand informational graphics for many on-going issues and needs of the UVA community.

Not on Our Grounds- EOCR Infographic for students: Student Infographic (virginia.edu)

University response infographic for Title IX reports, what to expect: PowerPoint Presentation (virginia.edu)

Note- An Official Report is only begun if the student specifically requests the Title IX Office to file a report. While faculty, staff, and other responsible parties have to report all knowledge of alleged incidents of misconduct, official reports need to be specifically requested by the claimant.

International Studies Office: http://www.virginia.edu/iso/

All international students should maintain close and on-going communications with the ISO, and play close attention to any and all emails and notices from this office.

Intramural/Recreational Sports: http://www.virginia.edu/ims/

All students with paid tuition and fees should have access to the various rec centers. Specific courses or programs may cost extra.

Parking and Transportation: http://www.virginia.edu/parking/

Real Time UVA Bus locator: https://uva.transloc.com/

Student Health: http://www.virginia.edu/studenthealth/

While much of the care provided is covered by the Student Insurance plan, students are encouraged to ask about any extra expenses that may be incurred for visits, medication, lab work, and referrals.

UVA ADA Coordinator: https://eocr.virginia.edu/ada-coordinator

The University's ADA team helps to resolve disability-related issues, conducts disability-related training, and serves as the University's primary resource for questions and concerns about services and accommodations for individuals with disabilities, including third parties, students, faculty, and staff for the University's Academic Division and UVA Health. Access issues may arise in a variety of contexts, including with respect to the University's online presence, built environment, extracurricular activities, events, the classroom, parking and transportation, Grounds, and more. To contact the ADA team directly, please email adacoordinator@virginia.edu or call (434) 924-3295.

UVA News: https://news.virginia.edu/

Report a Barrier: https://reportabarrier.virginia.edu/

The University of Virginia is committed to equal access and the civil rights of people with disabilities. Barriers to this access may include things such as an inaccessible website, an inoperative elevator, a blocked access ramp, video without captions, or other lack of access to an event or program.

EOCR Office for Equal Opportunity and Civil Rights: The mission of the University's Office for Equal Opportunity and Civil Rights (EOCR) is to ensure equal opportunity and to protect the civil rights of all University community members through proactive outreach, education, and effective response and resolution. https://eocr.virginia.edu/

Student Mistreatment and Other Unacceptable Behaviors - Policies and Guidelines (virginia.edu) Applies to:

School of Medicine faculty, staff, and students.

Reason for this policy:

A core value of the University of Virginia School of Medicine is a respectful, cooperative, safe, and professional learning environment for students in the School of Medicine and affiliated educational, laboratory, and clinical settings. This policy states the expectation of such an environment.

Policy Statement:

All faculty and staff must adhere to the School of Medicine Code of Conduct. The environment in which students learn must be free from mistreatment and other unacceptable behaviors that may be used adversely to control, influence, or affect the well-being of any student; exhibiting such behaviors conflicts with the mission and values of the School of Medicine. Allegations and complaints

of the occurrence of these behaviors will be quickly and fully investigated and, if the allegations are founded, appropriate disciplinary or other actions will be initiated. The terms "mistreatment" and "unacceptable behaviors" include but are not limited to:

• threatening or abusive language, profanity or language that is perceived by students to be demeaning, berating, rude, loud or offensive, publicly belittling or humiliating, and/or
• actual or threatened inappropriate physical or sexual contact, and/or
• other forms of behavior that are perceived as intimidation or physical or sexual harassment by students, and/or
• patterns of disruptive behavior or interaction that could interfere with teaching, learning or adversely impact the quality of care rendered to any patient, and/or
• bias, defined as a threat or act of harassment or intimidation – verbal, written or physical – which is personally directed against or targets a student because of that student's race, age, color, disability, national or ethnic origin, political affiliation, religion, sex (including pregnancy), sexual orientation, gender identity or expression, marital status, veteran status, or family medical or genetic information, and/or
• inappropriate or unprofessional criticism intended to belittle, embarrass, or humiliate a student or others; and/or
• requiring a student to perform menial tasks intended to humiliate, control, or intimidate the student; and/or
• requests for a student to perform personal services; and/or
• grading or assigning tasks used to punish a student rather than to evaluate or improve performance.

Information about complaints of student mistreatment or a negative learning environment will be shared only with individuals essential to achieve resolution. Students must feel free to bring complaints without fear of retaliation. No person shall be subjected to any adverse action for making a good faith report of misconduct or participating in any proceeding under this policy.

The School of Medicine prohibits retaliation directed against a student for making a good faith complaint under this policy or for assisting or participating in the complaint process. Retaliation is prohibited, even when the underlying complaint is without merit or is not substantiated.

NIH Resources for Resilience and changing the nature of science: Becoming a Resilient Scientist (BRS) series | Office of Intramural Training & Education at the National Institutes of Health (nih.gov)
Emergency Alert Sign-up page: https://uvaemergency.virginia.edu/uva_alerts
Respect UVA: https://hr.virginia.edu/employee-relations/respect-uva

If you are having trouble making ends meet, the University has the following resources:

Emergency Funds | Student Financial Services (virginia.edu)**Emergency Funds at UVA**

We know that sometimes you need financial help in a hurry. Whether you just need a few hundred dollars for a short-term loan through SFS or more extensive help, we've got resources for you to explore. Read below for options available to you, either through SFS or other departments at the University.

Emergency Loan from SFS (for when you need fast cash for a short time)

The Emergency Loan is a short-term, interest-free loan available to undergraduate students for up to $500 and graduate students for up to $750 per semester. The loan is due on the last day of the month after it is taken out (e.g. a loan taken out any day in February will be due March 31). As long as it is paid on time, there is no fee or interest. If it is paid late, there is a one-time late fee of $10.

To apply for an Emergency Loan, please email sfs@virginia.edu rather than visiting Carruthers Hall in person. Emergency Loans can only be obtained during the semester (i.e., the first day of classes through the last day of classes), and are only available to Summer Session students if they are enrolled in the following fall term. The last day for spring graduates to obtain an Emergency Loan is March 31. The last day for fall graduates to obtain an Emergency Loan is October 31. Past due balances must be paid prior to obtaining an Emergency Loan.

Be sure to sign up for direct deposit if you have not already done so! Information is at https://sfs.virginia.edu/tuition-billing/billing-payment/refunds/direct-deposit.

Hoo Needs Help

This program is a partnership between the Division of Student Affairs and Student Financial Services. Aid may come in a variety of forms, including grants, loans and/or university and community resources. We will do our best to contact students within 5-7 business days of their application being submitted. Response times may be longer than usual over weekends, holidays, or when the University is not in session. After a student submits their

application someone will reach out to you to discuss all options available to you including unused financial aid. Click here to get started.

GradBridge Loan

The GradBridge loan provides support to graduate students transitioning from fellowship stipends to wage assistantships or other related employment statuses. To request a GradBridge loan, contact us at sfs@virginia.edu or (434) 982-6000 to speak with one of our staff. We'll help you understand how the process works and get your loan started.

We'll send you a DocuSign form for you to complete, and you can borrow up to $2,500 per term. Once you have completed the form, you should generally expect to receive your funds within 7 days. If you have set up direct deposit, you will likely receive your funds sooner than that. If you do not set up direct deposit, we will send a paper check to your current mailing address in SIS. We highly recommend you set up direct deposit!

You'll have until the end of the term to pay off the loan completely, and you can make partial payments along the way on your balance due.

APPENDIX IV: RESOURCES FOR INTERACTING WITH BME OFFICE STAFF

APPENDIX IV: RESOURCES FOR INTERACTING WITH BME OFFICE STAFF

Travel Reimbursement Logistics:

- **START BY…**UVA uses the Workday system for reimbursements.
    - **If you have Workday Access:** If you can log into Workday using your UVA credentials you can create an expense report and submit your own reimbursements. Instructions on creating an expense report can be found here: https://uvafinance.virginia.edu/resources/create-expense-report-qrg
    - **If you do not have Workday Access:** For those students that do not have Workday access you must fill out the Non-Employee Reimbursement Form and send itemized receipts to bme-finance@virginia.edu to have them process your reimbursement. A valid Workstring must be included with the documentation you submit (your PI or Lab Manager will have this information). If you have never received a reimbursement payment you will have to register in PaymentWorks (a BME fiscal team member must start this process and you will be sent a link from PaymentWorks to complete the registration) before your reimbursement can be started in Workday. Please contact bme-finance@virginia.edu with any questions regarding reimbursements.
- **PLANE TICKETS:** For plane tickets you are more than welcome to use one of the department p-cards, **but you are not allowed to physically take the p-card, so you should bring a laptop with you to the Main BME Office**. Please be aware that **some airlines are now asking for the credit card used to book the tickets at check-in**. Keep this in mind if you are considering using one of the BME fiscal teams credit card for plane tickets (**you will not be allowed to take the UVA credit card with you on your trip**). Alternatively, you can ask bme-finance@virginia.edu for the contact information for one of our approved travel agency contacts, where they have these p-cards on file and can easily make their travel arrangements and then those will automatically be charged to the p-card.

- **CONFERENCE REGISTRATION:** For conference registrations it is highly recommended to use a p-card (follow same instructions as stated above for plane tickets).
- **HOTEL ACCOMMODATIONS:** For accommodation p-card is not available as they cannot pay for accommodation in advance. (Also, Air Bnb's not allowed on p-cards.). So you must pay for your hotel/AirBnB yourself. You must seek reimbursement ***after your trip***.
- **GETTING REIMBURSED:** You have 30 days from the last day of your trip to submit your receipts, otherwise it becomes taxable income. The time it will take for you to get reimbursed depends on how long it will take for each process to go through approvals, but it should normally ***not take longer than a week*** unless there are circumstances, such as the PI not approving the expense in Workday on time.

Instructions for Reserving Meeting Rooms and Classrooms:

1) If you want to reserve these rooms, you need to email Taylor (tmm7yp**@virginia.edu**) in the Main BME Office **at least 2 weeks in advance of your meeting:**

MR5 1041 (BME Classroom)
MR5 2019 (BME Library)
MR5 2012 (BME Small Conference Room inside the BME office)

For any equipment issues or support please contact BME IT (Henry Pritchard: BME-ITSupport@virginia.edu)

2) If you want to reserve these rooms, you need to go to this link and make your reservation: http://rs.med.virginia.edu/rsrequest/login.asp

MR5 2005 (before 1:00pm Monday- Thursday and all day Friday's)
MR6 G501
MR6 2502
MR6 3501
MR6 3502
Pinn Hall 1005
Pinn Hall 1014
Pinn Hall 1017

3) If you want to reserve these rooms, you need to email the people indicated here:

MR5 1005 (Megan Payne: mlp9df)
MR5 1019 - CVRC Library (Megan Payne: mlp9df)
MR5 2005 after 1:00pm (Lucille Bland: LTM3E)
MR5 3005 (Susan Bywaters: SAB6J)
MR6 2501 (Glenn Glover: GMG6N)
Pinn Hall Conference Rooms and Auditorium (Sibyl Hale: SDH9T)

2024-2025 GRA GTA & FELLOWSHIP Schedule

University of Virginia - School of Engineering

Pay Period (10) payments			GTA/ GRA Wages Fall 2024 (before Taxes) Pay Dates		
26-Aug	1	8-Sep	13-Sep	$	1,414.27
9-Sep	2	22-Sep	27-Sep	$	1,414.27
23-Sep	3	6-Oct	11-Oct	$	1,414.27
7-Oct	4	20-Oct	25-Oct	$	1,414.27
21-Oct	5	3-Nov	8-Nov	$	1,414.27
4-Nov	6	17-Nov	22-Nov	$	1,414.27
18-Nov	7	1-Dec	6-Dec	$	1,414.27
2-Dec	8	15-Dec	20-Dec	$	1,414.27
16-Dec	9	29-Dec	3-Jan	$	1,414.27
30-Dec	10	12-Jan	17-Jan	$	1,414.27
				$	**14,142.70**

Fall Fellowships 2024 (before taxes)			
September	23-Aug	$	3,064.25
October	23-Sep	$	3,064.25
November	21-Oct	$	3,064.25
December	18-Nov	$	3,064.25
January	16-Dec	$	3,064.25
		$	**15,321.25**

The fellowship stipends are created on the 23rd of each month. It is mailed or deposited a few days later, with the goal of arriving by the first of the month.

Pay Period (10) payments			GTA/ GRA Wages Spring 2025 (before Taxes) Pay Date		
13-Jan	11	26-Jan	31-Jan	$	1,414.27
27-Jan	12	9-Feb	14-Feb	$	1,414.27
10-Feb	13	23-Feb	28-Feb	$	1,414.27
24-Feb	14	9-Mar	14-Mar	$	1,414.27
10-Mar	15	23-Mar	28-Mar	$	1,414.27
24-Mar	16	6-Apr	11-Apr	$	1,414.27
7-Apr	17	20-Apr	25-Apr	$	1,414.27
21-Apr	18	4-May	9-May	$	1,414.27
5-May	19	18-May	23-May	$	1,414.27
19-May	20	1-Jun	6-Jun	$	1,414.27
				$	**14,142.70**

Spring Fellowships 2025(before taxes)			
January	16-Dec		
February	23-Jan	$	3,064.25
March	23-Feb	$	3,064.25
April	23-Mar	$	3,064.25
May	21-Apr	$	3,064.25
		$	**12,257.00**

The fellowship stipends are created on the 23rd of each month. It is mailed or deposited a few days later with the goal of arriving by the 1st.

Pay Period (6) payments			GRA Wages Summer 2025 (before Taxes) Pay Date		
2-Jun	21	15-Jun	20-Jun	$	1,414.27
16-Jun	22	29-Jun	4-Jul	$	1,414.27
30-Jun	23	13-Jul	18-Jul	$	1,414.27
14-Jul	24	27-Jul	1-Aug	$	1,414.27
28-Jul	25	10-Aug	15-Aug	$	1,414.27
11-Aug	26	24-Aug	29-Aug	$	1,414.27
				$	**8,485.62**

Summer Fellowships 2025 (before taxes)			
June	23-May	$	3,064.25
July	16-Jun	$	3,064.25
August	21-Jul	$	3,064.25
		$	**9,192.75**

The fellowship stipends are created on the 23rd of each month. It is mailed or deposited a few days later with the goal of arriving by the 1st.

GRA/ GTA pays -***via WorkDay***-on the date listed above are transmitted via direct deposit or pick-up at the UVa Payroll Office)

Fellowships stipends are transmitted -***via SIS***- by Direct Depo or mailed to the local address located in SIS.

BME standard for PhD students is $36,771
Bi-weekly wages are $1414.27 before taxes.
Monthly stipends are $3064.25

annual health insurance- student plan- $3877
dental insurance plan- $305