



**Boston University** Chobanian & Avedisian  
School of Medicine

# Master of Science in Anatomy & Neurobiology



2023 -2024 Program Guidelines



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## Departmental Resource Matrix

Maria Medalla, PhD PhD Advisor mmedalla@bu.edu	-Questions regarding program requirements -Troubleshooting enrollment and GMS requirements -Academic, career, and research advice, PhD students
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All students should familiarize themselves with the general policies of the Division of Graduate Medical Sciences as well as the program-specific requirements for the Anatomy & Neurobiology Vesalius Program found within this document. Supplement to Boston University [Division of Graduate Medical Sciences Guidebook](#).



## Guide for Master of Science Candidates

### A. Overview of the MS Program

The MS degree in Anatomy & Neurobiology is a rigorous full-time, two-year program that incorporates anatomical and neurobiological principles coursework. In addition, the degree has a strong focus on training outstanding educators through a combination of coursework and one-on-one mentoring. The program also requires the acquisition of scientific and scholarly expertise through the generation of a master's research thesis.

The program for the MS degree consists of the equivalent of one year of foundational course work and one year of directly supervised research work. Candidates are required to complete 32 credits at the graduate level. Course selection for the MS program is done in consultation with your academic advisor.

By the end of their first year of study, masters degree students will be expected to identify a research advisor from among the department's faculty and spend the first summer occupied with scientific research. This faculty member will then advise the student on which courses should be taken in the second year of their training.

The research work and the results obtained will be presented as a written thesis at the end of the MS program. This should be comparable in design and content to a full-length article in a scientific journal. The MS program has a maximum time limit of five years after initial registration into the program.

The goals of the Masters in Anatomy & Neurobiology (Vesalius) Program are to provide trainees with the knowledge base and skills to become proficient in basic biomedical research and to develop outstanding pedagogic skills. Successful completion of these goals enables our students to pursue further studies in the biomedical sciences including teaching, research, and health care. At the conclusion of the program students will be able to:

- Demonstrate an understanding of Anatomy, Neuroscience, Statistics, and other graduate-level elective anatomical and neuroscience topics through successful completion of our core curriculum.
- Demonstrate proficiency in pedagogical skills in the context of the Teaching in Biomedical Sciences course and through teaching fellowships in advanced biomedical courses (as listed above).
- Demonstrate an understanding of pedagogical theory through the development of a mentored Vesalius teaching practicum, which involves the development of a didactic lesson or exercise under the direct mentorship of department faculty.
- Demonstrate proficiency in scientific data acquisition and analysis through mentored research in one of the department's research labs.
- Describe and interpret scientific findings of their laboratory research study through the development of a written, publication-quality thesis.
- Demonstrate an understanding of the professional skills (including an ability to read and interpret scientific literature) required of biomedical scientists and educators.

## B. Course Requirements for the MS Degree

### Required Courses (28-30 credits)

- Exptl. Design & Statistical Methods or Elementary Biostatistics 2-3 Cr AN 704/MS 700/BS 704
- Professional Skills 2 Cr AN 715
- Human Gross Anatomy 6 Cr AN 719
- Neuroanatomy Through Clinical Cases 4 Cr AN 725
- Graduate Histology 4 Cr AN 726
- Research Colloquium (Journal Club) 2 Cr AN 801/AN 802
- Vesalius 1: Teaching in the Biomedical Sciences 2 Cr AN 806
- Vesalius 2: Applied Teaching in the Biomedical Sciences 2 Cr AN 809
- Vesalius 3: Teaching practicum in the biomedical sciences 2 Cr AN 805
- One Departmental Elective Course (see next page) \* 2-4 Cr

### Elective Course Options\*

#### Courses typically offered in the Fall Semester

- Cellular Organization of Tissues (Histology) 4 Cr AN 722
- Fundamentals of Cell & Molecular Neurobiology 4 Cr AN 777
- Systems Neurobiology 4 Cr AN 810
- Scientific Writing 2 Cr AN 815
- Human Anatomy and Osteology 4 Cr FA 712
- Advanced Human Osteology 4 Cr FA 806
- Forensic Biology 3 Cr FS 702
- Forensic Pathology 3 Cr FS 712
- Molecular Biology of Forensic DNA 3 Cr FS 720
- Biomedical Imaging Foundations 4 Cr IM 600

#### Courses typically offered in the Spring Semester

- Learning and Memory (even-numbered years) 2 Cr AN 702
- Neurobiology of Aging (odd-numbered years) 2 Cr AN 707
- Advanced Clinical Anatomy 2 Cr AN 708
- Developmental Cognitive Neuroscience (on-demand\*) 4 Cr AN 716
- Methods in Neuroscience 4 Cr AN 718
- Advanced Neuroanatomy (even-numbered years) 4 Cr AN 724
- Neurobiology of the Visual System (on-demand\*) 2 Cr AN 807
- Cognitive Neuroscience (on-demand\*) 4 Cr AN 811
- Dynamic Modeling 2 Cr AN 820
- Methods of Functional Imaging of the Brain 2 Cr IM 630
- Molecular Basis of Neurologic Disease 2 Cr MS 783

\*(includes courses from programs in Forensic Science [FS]; Forensic Anthropology [FA] and Imaging [IM]) \*Many courses are only offered when requested by 5 students or more.





**Requirements for the Vesalius Module:**

All Masters degree students complete the Vesalius Module. Masters students must have successfully completed these prerequisite courses to pursue the Vesalius Module:

- Human Gross Anatomy 6 Cr AN 719
- Neuroanatomy Through Clinical Cases 4 Cr AN 725

The module consists of three courses/components. The program begins with a course on the development of teaching skills in the biomedical sciences. This is followed by a teaching apprenticeship (service as a teaching fellow in one or more of the medical or graduate required courses above), and concludes with a Mentored Teaching Project that involves the development of a didactic lesson or exercise under the direct mentorship of experienced and award-winning faculty.

- Vesalius 1: Teaching in the Biomedical Sciences 2 Cr AN 806
- Vesalius 2: Teaching Apprenticeship 2 Cr AN 809
- Vesalius 3: Mentored Teaching Project (Practicum) 2 Cr AN 805

**Typical curriculum for Masters in Anatomy & Neurobiology students:**

**Year 1:**

**Fall**

Human Gross Anatomy	6 Cr	AN 719
Neuroanatomy Through Clinical Cases	4 Cr	AN 725

**Spring**

Vesalius 1: Teaching in the Biomedical Sciences	2 Cr	AN 806
Professional Skills for Students in the Biomedical Sciences	2 Cr	AN 715
Graduate Histology	4 Cr	AN 726
Elective (see list above)	2 Cr	
Research Colloquium (Journal Club)	2 Cr	AN 801/802

*\*Early in the spring semester, students will identify a research lab and mentor with whom they will do their research thesis. It is expected that students will obtain any necessary training and access to facilities so they are ready to begin full-time research after spring courses end. Students must commit a combined 40 hours/week of coursework and lab work, where each credit hour of coursework is considered to be 3 hours/week.*

**Year 2: Fall-Spring**

**During Year 2 students must take:**

An approved statistics course (if not taken in year 1)	2-3 Cr
AN 809 Vesalius 2: Teaching Apprenticeship	2 Cr
AN 805 Vesalius 3: Teaching Practicum	2 Cr
AN 901/902 Research as desired	Variable
Electives as desired (see list above)	Variable

**Students may petition the GEC for certain exemptions from the requirements. Materials should be submitted with the petition letter before the time of registration to the Graduate Program Director. Rules regarding course exemption and taking courses outside the typical Curriculum:**

1. If it is deemed that an equivalent and appropriate graduate-level course has been successfully completed in the preceding three years, the student may petition the GEC to be exempt from the course. The syllabus of the proposed course should be submitted with a written petition. If the petition is approved, then the course may be substituted for another course.
2. Students must petition the GEC for permission to take courses outside the standard curriculum.

**1. Grades**

To receive credit in any course taken as part of the MS degree program, students must receive a B- grade or better. Fulfillment of this academic level places a student in good academic standing. A grade of C+ or lower is considered a failure (F). If there is a failure in one of the basic departmental required courses then the student is no longer in good academic standing, and this course must be remediated in a manner that is deemed appropriate by the GEC.

When the work of a course has not been completed within the semester of registration, the grade of I (Incomplete) may be given at the discretion of the instructor and depending on the reason for incomplete work. This automatically becomes a permanent grade of F (unsatisfactory grade) unless the course work is completed within 12 months from the time the incomplete grade is assigned, per GMS guidelines.

**2. Teaching**

Teaching is an essential part of our MS Degree Program. MS candidates complete 40 hours of teaching under the rubric of the Teaching Apprenticeship (AN 809). This requirement is typically fulfilled during the second year of study.

Each year the student will be given the opportunity to request their top teaching apprenticeship choices. The GEC will then review all requests and, in consultation with course directors, will determine teaching assignments based on student seniority, student choice, and other matters that impact student coursework/thesis writing. The GEC will make every effort to match a student with their preferred teaching assignment. The GEC makes the final decision regarding teaching assignments.

The following Departmental courses are commonly requested for graduate student teaching assignments:

- One section of Gross Anatomy (Graduate or Medical)
- One section of Anatomy for Dental studental students

Students may opt to teach in other courses and may express their preference to the GEC. Prior to this request, students should have spoken with the Course Director of their chosen course to assess availability/feasibility.

**3. Academic Probation**

If a student receives a grade of C+ or lower in any course, the student will be notified in writing that they have been placed on Academic Probation. Students in danger of failure in any course will be identified, and a plan



for improving their grades will be generated. Students on Academic Probation must meet with their advisor to develop a plan for academic improvement and remediation of relevant coursework (when allowed). Students on Academic Probation must receive grades of B- or higher in all coursework in subsequent semesters. If this condition is not met, the student is at risk for dismissal from the program.

The following regulations and restrictions will apply during the probationary period:

- The student is required to meet with the Graduate Program Director in order to assess progress prior to the start of the ensuing semester, and again before the deadline to drop a course with a "W." It is the responsibility of the student to initiate these meetings.
- The student must prioritize registration for core courses that are offered during the probationary period; registration of elective courses is an option only when all the core courses are not offered in that semester, have been completed, or are in progress.

#### 4. Academic Dismissal

Upon receiving written notice of dismissal, students may appeal this decision to the Associate Provost of GMS, per GMS guidelines.

## C. Research Requirements for the MS Degree

### 1. Overview of Research Requirements

Scientific research in the Department of Anatomy & Neurobiology will focus on advancing knowledge in the fields of anatomy and/or neurobiology. Anatomical and/or neurobiological research must be the principal focus of the masters thesis; however, a student may include education research as a complementary component of the thesis.

All MS degree students will participate in scientific laboratory research. Students must engage in a minimum combined 40 hours/week of coursework and lab work.

At the end of the first year, students are encouraged to finalize the choice of laboratory in which their thesis project will be performed. Students are expected to engage in full-time research during the summer after the first year. In the second year, students should aim to carry out full-time research, complete other requirements for their degree, and engage in teaching activities.

MS candidates are strongly encouraged to present their research at the annual Henry I. Russek Student Achievement Day at the end of their second year. Students are also encouraged to consider presenting their Vesalius Teaching Practicum projects at the annual John McCahan Education Day.

### 2. Primary Research Advisor

During the time the student does not have a primary research advisor, the Graduate Director (Dr. Foley) will advise students on the choice of courses to be taken. Once a primary research advisor has been selected, this faculty member will assume advising responsibilities.

MS degree candidates should become affiliated with a faculty member and their research laboratory during the first year in the Graduate Program. This faculty member will serve as the primary research advisor and, in this role, will supervise the student's research and advise the student on course work.

The primary research advisor is typically a member of the regular faculty of the Department of Anatomy & Neurobiology, or a faculty member of another department within GMS may also serve as a student's primary research advisor if approved by the GEC. When the primary research advisor is not a full-time faculty member in the Department of Anatomy & Neurobiology, then the second reader of the thesis must be a member of the regular faculty of the Department of Anatomy & Neurobiology and a faculty member of GMS.

### 3. Writing of the Thesis

The format and formal requirements for a thesis are outlined on the GMS website (see Guide for Writers of Theses and Dissertations at [Research, Thesis, Capstone and Dissertation Information | Graduate Medical Sciences](#).)

The thesis is to be based on the research carried out by the MS degree candidate. The research project is to be well-conceived and, in the best-case scenario, suitable for submission as an article to a scientific journal.

The student MUST refer to the [GMS Graduation Calendar](#) for all graduation deadlines, including the exact due date of the Thesis, which is typically April 1. This information, along with other important graduation deadlines, can be found on the Division of Graduate Medical Sciences website.

## D. Assessment of MS Degree Candidate Progress

During the spring of the first academic year, the student and his/her advisor will meet with the GEC in the Annual Student Review. The review is a forum for the student to highlight and explain their academic, research, and teaching accomplishments over the past year, and to detail plans for the coming year. This meeting also allows for direct oversight of the Committee on the timely progression of each student through their degree program and to maintain the academic, research, and professional standards of the Department, and it serves as an environment in which students may ask questions or voice concerns.

Prior to the meeting, each student will submit a form to the GEC that details the past year's coursework, academic performance, and teaching performance.

The student should be prepared to answer the following questions (as appropriate):

1. What progress was made in the previous year with respect to a) course requirements; b) research progress; c) professional development, and; d) service to the Department, School, and/or community?
2. If performance in class or in research did not fulfill the expectations of the student, advisor, or committee, what will be done in the future to ensure expectations are met?
3. What are the goals of the student in the coming year for a) courses; b) research progress; c) professional



development, and; d) service to the School and/or community?

4. What is the timeline for completion of the program, and what are the student's future plans?

## E. Department and Graduate Student Seminars and Journal Club

- Graduate student attendance at all Departmental Seminars is mandatory. The only exception to this requirement is when attendance at a seminar conflicts with attendance at a course taken for credit.
- All students must participate in Journal Club once each year. Only one Journal Club is taken for credit.

## F. Graduate Education Committee (GEC)

This committee directs and oversees the graduate programs within the Department of Anatomy & Neurobiology. Its responsibilities include, but are not limited to: admissions decisions, policy-making, the establishment of academic requirements, the resolution of disputes, and advice on the administration of programs (e.g., training grants) affecting graduate students. The Committee is chaired by the Graduate Programs Director and includes a minimum of three other faculty members and the Department Chair (ad hoc).

The Graduate Program Director or other members of the GEC will advise students on the choice of courses to be taken prior to the student selecting a primary research advisor.

The GEC has the power to dismiss students for reasons of academic underachievement, poor conduct, or lack of professionalism. The student may appeal a decision of dismissal to the Chair of the Department and/or the Ombuds, who will present the student's case to the GEC. Note that there are also GMS policies about program dismissal that are covered in the [GMS Policies and Procedures handbook](#).

## G. Department Graduate Student Organization

During the first month of the academic year, department graduate students as a group will be responsible for: (1) recommending an Ombuds, (2) selecting representatives to plan the annual Raviola seminar and reception, (3) selecting representatives to designated department committees, and (4) selecting graduate student representatives who act as the primary spokespersons for graduate student concerns.

## H. Ombuds

A member of the Department will be selected to serve as Ombuds; in this role, the faculty member will mediate any dispute or hear any concerns from those who wish to discuss an issue outside of the normal administrative structure of the Department. Interactions with the Ombuds will be held in confidence unless otherwise requested by the student or if there is a safety concern. The Ombuds will be selected by the Graduate Students on an annual basis; students must inform the GEC of the selection.

## I. Miscellaneous

### 1. Tutoring, Extramural Teaching or Other Employment

Students may participate in tutoring or extramural teaching with permission from their advisor. In addition, international students should check with their ISSO advisor about whether this is allowable as well.

### 2. Vacations and Leaves of Absence

In addition to the standard Medical School, National and State holidays and winter intersession, a maximum two-week vacation period may be taken by the student during the year. The timing and length of the vacation should be discussed well in advance with the student's advisor. Normally, students should expect to engage in research during the summer months. Students should inform the Departmental Administrator of their vacation plans. Note that spring break is not observed for graduate students.

The GMS Bulletin, under Academic Policies and Procedures, describes the procedures involved with Leaves of Absence.

### 3. Student Committee Position Descriptions

Graduate students are encouraged to participate in service activities within and outside of the department. Some potential opportunities include:

**Student Representative:** The PhD student rep will co-run graduate student meetings with the master's rep, introduce new PhD students at the departmental retreat, plan practice sessions for qualifying exam presentations and writing/reviewing workshops, and plan seminars for post-quals PhD students (and introduce them).

**Ambassadors (4+):** This group of students will take on social media and newsletter responsibilities. They will run the department Instagram account in conjunction with Anna, answer questions from prospective students through the Unibuddy system, and will compile and distribute the departmental newsletter with short updates from faculty, staff, students, and alumni each semester. Articles typically include recently awarded grants, new students and/or faculty, conference updates, recent publications, presentations, and a report from the chair.

**K-12 Outreach (4+):** These students will coordinate educational outreach and/or volunteer activities in the community. Past events included hosting booths featuring hands-on activities relating to neuroscience at community events (Museum of Science, Cambridge Science Festival). They will also distribute information about community service/outreach events organized by other student groups (GWISE, NGSO).

**Social Committee (4+):** Students organize social gatherings for the graduate students of the department, allowing students to "get-to-know" each other outside of the classroom (>3 per semester). Department funds are available on a case-by-case basis. Students will also distribute information about and coordinate attendance of social events organized by the NGSO. These students will represent A&N in the planning of joint BU, Harvard, MIT events.

**Raviola Day Task Force (3):** These students will work closely with Melissa and Anna to organize the annual Spring seminar in honor of Dr. Giuseppina D'Elia Raviola, who was an outstanding scientist in our department. This event typically includes a seminar from the keynote speaker, as well as time to meet with faculty, lunch with





students, and a reception to follow the seminar.

**DEIJ Representative (1-2):** Although the DEIJ committee is open to all students, faculty, and staff in the department, these students will serve as designated reps to act as a liaison between our department's DEIJ committee and that of other departments, as well as with the BU DEI Office and the recently created Center for Antiracist Research, in the effort to help create and share resources and initiatives that promote diversity, equity, and inclusion within our scientific and academic community. An informal overview of each DEIJ meeting will be presented at the following A&N graduate student meeting.

**Graduate Medical Science Student Organization (GMSSO) (1-2):** These students will represent A&N at monthly GMSSO meetings and report back any events or resources we should know about. An informal overview of each GMSSO meeting will be presented at the following A&N graduate student meeting.

**BPSO Representative (1-2):** These students will represent A&N at monthly BPSO ("business") meetings and report back any events or resources we should know about. An informal overview of each BPSO meeting will be presented at the following A&N graduate student meeting.

#### 4. Important Dates:

For GMS academic calendars please visit: [GMS academic calendars](#)

#### 5. Teaching Fellow Expectations

The following was prepared by the Course Directors to describe the requirements and expectations for graduate students serving as Teaching Fellows (TF) in their respective courses. Please contact the Course Director if you have any specific questions or concerns.

##### **GMS AN 719 Human Gross Anatomy, Course Director: Linda Afifi (lafifi@bu.edu)**

##### **Responsibilities for each unit would include the following:**

1. Attend, teach, facilitate dissection during scheduled lab hours
2. Conduct 2 x 45minute exam review sessions on lab content
3. Prosection of TA designated donor ahead of scheduled lab times
4. Prosection of student designated donors (n=3) to help facilitate dissections before lab (i.e, skinning, thoracotomy, hemisecting, creating skin flaps, reflections etc.)
5. Assist with practical exam set-up (2 hours)

Unit 1 Back & Limbs  
Unit 2 Thorax, Abdomen, Pelvis  
Unit 3 Head & Neck

##### **GMS AN 725 Neuroanatomy through Clinical Cases, Course Director: Elizabeth Whitney (ewhitney@bu.edu)**

##### **Responsibilities:**

Assist students during lab sessions: 1.5 hrs/week  
Weekly office hours: 1.5 hrs/week  
Weekly homework: review student submission for completion only  
Write 3-5 practice questions/wk

##### **MED MS 135, MS 231, MS 232 Principles Integrating Science, Clinical Medicine and Equity(PISCES), Anatomy Thread Director: Jonathan Wisco (jjwisco@bu.edu)**

##### **Objectives**

Anatomy and Neurobiology Graduate Student TA's will learn best practices for teaching and learning in a multi-disciplinary environment, develop instructional materials and review content, and teach in the medical school PISCES modules. Teaching opportunities include in lab-style learning environments, and in-person and Zoom recitation sessions. Students can repeat their teaching experiences in 4-week or 2-week time periods, to cover different content teaching experiences. If interested, medical education scholarly opportunities are available.

Prosection and Teaching (exact dates are subject to change)

*3rd and 4th weeks in June; 1st week in July*

Cadaver prosection of thorax, abdomen, pelvis; head and neck; and back and limbs during the Anatomy and Ultrasound Medical Educator Fellowship

*4th week in August, 1st-3rd weeks in September*

M1 student teaching, and some cadaver prosection in Foundations 2

Week 1: Thorax

Week 2: Abdomen

Week 3: Pelvis

Week 4: Neuroanatomy

*2nd-4th weeks in October*

M2 student teaching, and some cadaver prosection in Dermatology/Rheumatology/Musculoskeletal System (DRMSK)

Week 1: Upper extremity

Week 2: Lower extremity

Week 3: Neck and Back

*3rd week in November*

M2 student teaching, and some cadaver prosection in Head and Neck Integration

Week 1: Head and Neck

In each anatomy-related PISCES week above, there are two anatomy labs, which will be semi-guided prosections based on the dissections that were completed in June. Expect that final dissection clean-up will be necessary in preparation for labs. Each PISCES module is split into 2-week sub-modules. The anatomy assessments will include weekly Team-Based Learning (TBL) individual and group readiness assurance tests (iRAT/gRAT), and a shortened practical exam with written exams that include all sub-module content.

##### **Learning Best Practices for Teaching and Learning**



Each week students are required to complete readings and reflections on best practices for teaching and learning and will meet with the Course director to correlate teaching activities.

**GMS AN 726 Graduate Histology, Course Director: Maryann MacNeil (mamst@bu.edu)**

This course will focus primarily on the histology (microscopic structure and function) of cells and tissues of the body. The Teaching Fellow will assist students with the application of skills based on visual learning. The TF will guide students through tissue sections using our online virtual microscopy system, Biolucida. This will require a solid understanding of the lecture material that precedes the laboratory sections.

TF is responsible for:

- Attending lab and guiding students through laboratory materials (11 labs=22 hours)
- Writing practice questions for each lecture. 14 total at approximately 1 to 1.5 hours per week

**GMS AN 722 Cellular Organization of Tissues, Course Director: Louis Toth, PhD (ljtoth@bu.edu)**

As per LCME guidelines for Teaching Fellows (TFs) in medical courses, our TFs must be familiar with the educational objectives of the course, and be prepared to teach and evaluate the students. TFs for histology are responsible for supporting the learning of the students in the course. Their prime responsibilities are: (1) to know the material and how we are teaching it (2) to facilitate the learning of the students and (3) to aid the faculty in the administration of the course.

Qualifications for TFs: TFs must have performed well in the BUSM histology course in a recent term. (Grade of B+ or better and permission of the course director are required.)

**Duties of TFs:**

1. TFs are responsible for reviewing the material and having the necessary understanding to teach it. They are encouraged to attend the course lectures and expected to spend time each week reviewing their notes and the textbooks prior to the scheduled staff meetings. They are responsible for attending all meetings of the course faculty, in which we discuss the quizzes and the teaching strategy for the labs and discussions. The faculty may provide TF review sessions for the explicit purpose of reviewing course material and discussing the progress of students. TFs meet once before the beginning of the course to review the course objectives, and to receive guidance about their roles in the teaching and evaluation of students.
2. Tutoring takes place mainly in TF office hours, scheduled at a regular time at the TF's discretion, but usually the day before each discussion and with sensitivity to the course schedules of all students in the course (GMS and pathway). TFs are also expected to help faculty guide individual students one-on-one during discussion sessions as planned. TFs are expected to provide some outside assistance (within limits) for the students in their lab, and are encouraged (but not required) to join the ranks of official paid tutors for the course.
3. TFs assist with running of the discussion sessions, including learning and using the teaching technologies. These currently include lights & projector, SMART Sync, SMART Tools, Point Solutions Responseware, and BACUS Virtual Microscopy. TFs attend an orientation session at the beginning of the semester in which

the use of these technologies is demonstrated. TFs assist on examination days with enforcing proper conduct of the students, and with simple, procedural questions including computer issues. Currently, these involve knowing the test administration procedures of Blackboard-8 and SofTest by ExamSoft. TFs are NOT responsible for creating or checking the content of the course exams.

**Assessment of TFs:**

The performance of the TFs will be assessed through (1) observation by faculty throughout the course, (2) a written performance evaluation at the conclusion of the course, and (3) student-written evaluations included in the students' end-of-course feedback.

Summary of time commitment:

TF Hours	AN722 (Fall Term)
Labs Exams	3 hrs/week
Office Hours	5 hrs/exam x 2 exams
Staff Meetings	2 hrs/week
Preparation	1 hr every week as needed

**GMS AN 718 Methods in Neuroscience, Course Directors: Jean-Jacques Soghomonian, PhD (jjsogho@bu.edu) & Jeannine Foley, PhD (jeannine@bu.edu)**

This course is broken into five modules that span 2.5 weeks (5 lectures total). One TF will be assigned per module (TFs may sign up for multiple modules if space allows). TFs in the course are expected to attend each lecture within their module and read the assigned content for that module. Research beyond assigned material may be necessary. TFs will facilitate classroom discussion. TFs will also be expected to correct a semi-weekly assignment pertaining to each lecture and provide feedback to the students about the quality of their work. Assignments must be graded according to a rubric designed by the TF. This rubric must be submitted to the module director prior to grade distribution. Grades must be provided within one week of assignment due dates. The course modules are as follows:

- Module 1: Behavior
- Module 2: Anatomical/histological Methods
- Module 3: Foundations in Molecular Methods
- Module 4: Analyzing Neuronal Circuits
- Module 5: Analyzing Neuron Activity

**GMS AN 810 Systems Neuroscience Course Director: Doug Rosene, PhD (drosene@bu.edu)**

1. Attend lectures and discussions for the four hours of class over the 15 weeks of the semester. (Estimated total of ~60 hours for the semester.)
2. Read and grade with comments to improve writing the weekly two-page, double-spaced papers that are a summary and critique of an assigned research article - total of about 13-15 papers. This requires reading and if necessary, researching the assigned paper. (Estimate of up to 10 hours per week for 15 weeks = ~ 150 hours for the semester.)
3. Grade student participation in the weekly discussions. (Estimated total of ≤5 hours for the semester to compare grades with other TF and instructors.)
4. Meet with students as needed to advise on performance issues. (Estimated total of <10 hours for the





semester.)

- Total number of hours over 15 weeks of the semester will be up ~ 225 hours or an average of ~15 hours per week

### **GMS AN 811 A1 Cognitive Neuroscience**

**Course Directors: Karin Schon, PhD (kschon@bu.edu) and Robert Joseph, PhD (rmjoseph@bu.edu)**

This course meets on both the Charles River and Medical campuses, and generally has two teaching fellows, one from each campus. TFs are expected to attend two-course lectures per week (4.5 hours total) and hold weekly office hours. On days that laboratories are held in lieu of a lecture, TFs will assist the laboratory manager in setting up testing rooms, supervising data collection, and compiling the data for distribution.

Please note TFs should meet with the lab manager a day or two before the lab to run through the experiments.

Students will submit weekly lab reports, and TFs are expected to collect these reports, grade them in coordination with the instructors and return them to the students within 1 week's time. TFs will use Blackboard to post announcements, class materials, and grades.

### **MD-511 Anatomical Sciences-II, Dental Gross Anatomy Course Directors: Elizabeth Whitney, PhD (ewhitney@bu.edu) and Monica Pessina, PhD (mpessina@bu.edu)**

Graduate teaching fellows (TFs) in the Dental Gross Anatomy course will have the opportunity to perform cadaver dissection and present their dissection to small groups of first-year dental students. TFs will organize their own laboratory dissection presentation(s) and will present this to faculty in the days prior to the scheduled laboratory. Faculty will mentor TFs through this process to ensure that all presentations are clear and accurate. In the week preceding each examination, TFs will give review sessions in the laboratory. TFs will also participate in setting up and administering the practical examinations.

Example #1: \*

- Lab 1: Thoracic wall, mediastinum, pleural cavities, heart, lungs, diaphragm
- Lab 2: Anterior abdominal wall and abdominal organs
- Practice Practical: Practice practical set-up (morning)
- Practical Exam 1: Practical examination set-up (morning); Proctor exam (afternoon)
- Review Sessions: 3 sessions x 1 hour

Example #2: \*

- Lab 3: Structures of the neck
- Lab 4: Axilla/ brachium
- Practical Exam 2: Practical examination set-up (morning); Proctor exam (afternoon)
- Review Sessions: 3 sessions x 1 hour

Example #3: \*

- Lab 5: Face, parotid region, suprahyoid region
- Lab 6: Temporal/ infratemporal fossa, retropharyngeal space, cranial contents
- Lab 7: Pterygopalatine fossa, nasal and oral cavities, pharynx, larynx, and self-study of larynx on models
- Practical Exam 3: Practical examination set-up (morning)
- Review Sessions: 3 sessions x 1 hour

\* Note: The above are examples only.

### **GMS AN 777 Fundamentals of Cellular and Molecular Neuroscience, Course Director: Ella Zeldich, PhD (ezeldich@bu.edu)**

Responsibilities for TFs would include the following:

- The classes (lectures and discussions) take place M and F 9:30-11:30. TFs are required to take AN777 themselves as a prerequisite for the position.
- TFs are encouraged to attend the course lectures and discussions and review the material (4 hours of class over the 14 weeks of the semester, an estimated total of ~56 hours for the semester).
- TFs are required to read all the articles, attend all the discussions, and actively help with facilitation of the discussions. This might require researching the assigned paper, if necessary. About 12 articles will be discussed per semester. (2 hours per article, an estimated total of ~24 hours for the semester).
- TFs are required to review and grade 14 tests throughout the semester. The tests will include 5-6 multiple choice questions, 1-2 open-response questions about the material, and 1-2 questions related to the critique of an assigned research article (10-12 hours per week for 14 tests, an estimated total of 140-168 hours for the semester).
- TFs are expected to provide occasional help for students that might face difficulties and need guidance in addition to the office hours that the course director will be providing (up to 1 hour per week for 14 weeks, estimated total of 14 hours for the semester).
- Meetings with the course director for the grade discussions are expected (Estimated total of 8-10 hours for the semester.)
- Total number of hours over 14 weeks of the semester will be 242-272 hours or an average of 18 hours per week.

## **Resources**

### **Getting Around Town**

"The BUS", is a free shuttle running between the medical and Charles River campuses (runs every ½ hour during the academic year, every 12 minutes during rush hour). You can find a detailed schedule at: [Shuttle](#) and on the "Terrier Transit" App.

The following links provide information about bus passes, public transportation and parking:  
Fall MBTA Student Semester Pass » Parking & Transportation Services | Boston University  
Bus | Schedules & Maps | MBTA  
Parking & Transportation Services

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[Bus | Schedules & Maps | MBTA](#)



## [Parking & Transportation Services](#)

### **Public Safety**

The Medical Campus Public Safety Department is staffed 24 hours a day, seven days a week. There is one Command and Control Center located at 750 Albany Street. Service calls for security, facilities, and emergency response are dispatched from this location and can be reached at (617) 358-4444.

Contact the Command and Control Center to report suspicious and unusual activity. The Public Safety Desk Officer will dispatch an officer to respond to the problem immediately.

### **Incident Reports**

The Public Safety Department encourages all employees and students to report suspicious behavior and/or criminal activity to the Command and Control Center at (617) 358-3998 as soon as possible. The Public Safety Department will document all reported incidents and forward those in need of further investigation to the department's Investigations Unit. Public Safety Department incident reports are the confidential properties of BUMC, and copies will only be released with the approval of the Office of General Counsel. Requests for copies of Public Safety Department incident reports should be directed to Public Safety Administration at (617) 414-4413.

### **Lost and Found**

The Public Safety Department documents and maintains custody of all recovered property at the medical center. Please contact the Command and Control Center at (617) 358-3998 if you find property. An Officer will be dispatched to secure the property and attempt to return it to its owner. In the event that you should lose or misplace property or if property is stolen from you, please contact the Command and Control Center at (617) 358-3998 to report the loss. The Desk Officer will dispatch an officer to meet you and document your loss if necessary.

### **Public Safety Escorts**

The Public Safety Department will provide vehicular or pedestrian escorts to the garages, lots, and surrounding medical center buildings during night and weekend hours upon request. Escorts are subject to availability by calling the Command and Control Center at (617) 358-3998. The Public Safety Department recommends that you utilize the shuttle services available to you that transport to the garages, lots, surrounding medical center buildings, and authorized MBTA stops. Click the shuttle services index for more detailed information.

### **Emergency Call Boxes**

The Public Safety Department has installed emergency call boxes at a variety of locations within and around the perimeter of the medical center. Emergency call boxes are blue metal boxes that are easily identifiable by blue lights located above the box. These call boxes contain auto-dial phones that connect the caller to the Command and Control Center once the emergency button is pushed. These phones should be used in emergencies only and automatically disconnect after 3 minutes. The location of the call will automatically be sent to the Command and Control Center for dispatch and response purposes.

### **Identification Cards**

The Public Safety Department maintains a photographic database of all employees, faculty, and students. Identification cards are to be worn at all times while on medical campus property. For those who require access to restricted areas, a combined Photo Identification/Access Control card is issued. The Public Safety Department issues Identification / Access Control cards in the ID office, located on the first floor of 650 Albany Street. The ID office is on the right when you enter the lobby. You may obtain a badge Monday through Friday, 7:00 am to 3:00 pm. The office will be closed for morning break from 9:00 am-9:15 am, and lunch break is from 12:00 pm-12:30 pm. For more information, you may call (617) 638-6879.

There is a \$35.00 replacement charge for lost photo IDs/access cards. Please go to the cashier's office at 88 East Newton St. 2nd floor to make payment before reporting to the ID office for a replacement ID.

### **The Control Center**

The Control Center is responsible for monitoring all building automation systems and dispatching staff to respond to requests for assistance including fire alarms, heating/air conditioning systems issues, and all other building and grounds issues at the medical center. A Control Center Technician is on duty 24 hours a day, 7 days a week and is responsible for ensuring that there are no interruptions in building services or utilities that will impact the operations of the medical center. The phone number is 617-358-4144. Employees and students should immediately report all facility-related deficiencies to the technician on duty. Fire, smoke, chemical, or radioactive spills should be immediately reported to the Control Center's emergency response number: (617) 414-6666.

### **Disability and Access Services**

Boston University is a community of diverse learners. As such, BU is committed to making reasonable accommodations for students with documented disabilities. Eligible students should contact the office of Student [Disability and Accessibility Services](#) to begin the registration process. Accommodations are not retroactive, so early reporting is highly encouraged.

### **Mental Health Resources**

If you are experiencing a mental health crisis, please call this phone number: 1-800-981-HELP(4357) for telehealth services, or dial 911.

Mental health resources can be found online at [terriers connect](#) and [Boston Emergency Services Team \(BEST Team, Boston\)](#).

This document is updated annually. If you find any incorrect or unclear information, you can suggest an update at [this link](#), indicating that it is for the guidelines.