



INTERDISCIPLINARY PROGRAM IN NEUROSCIENCE
NEUROSCIENCE, B.S.
2018-2019

Bachelor of Science (B.S.) in Neuroscience

The B.S. in Neuroscience is an interdisciplinary program emphasizing the relationship between the biology and chemistry of the nervous system and the behavior of an organism. This degree prepares students for medical school and other health-related fields, graduate study in neuroscience, and industry work in the neuroscience field.

The program blends core coursework in biology, chemistry, psychology, physics, mathematics, and computer science with dedicated neuroscience courses. Students choose elective courses in neuroscience or related disciplines, which enable them to tailor the degree to their specific interests. For example, students with a strong psychology interest may take a combination of psychology and neuroscience courses for their electives, while students with a biology interest may take more biology courses for their electives. The official, up to date, neuroscience curriculum is available in the university course catalog at catalog.gmu.edu. Previous catalog years can be accessed at <https://catalog.gmu.edu/archives/>.

Essential Resources

Mason Neuroscience Website: <https://cos.gmu.edu/neuroscience/>

Official Mason Catalog: <https://catalog.gmu.edu/>

Health Professions Advising: <https://prehealth.gmu.edu/>

Degree Evaluation: View in **Degree Works** through Patriot Web <https://patriotweb.gmu.edu>.
Instructions here: <https://registrar.gmu.edu/students/degree-evaluation/degree-works/>

Transfer Credit Services:
<https://www2.gmu.edu/admissions-aid/how-apply/transfer/transfer-credit-policy>

Advising

E-mail: neurosci@gmu.edu

Appointment Instructions: <https://cos.gmu.edu/neuroscience/advising/>



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Neuroscience, B.S. Degree Requirements

Students must complete at minimum of 120 credits applicable to their degree, with a minimum of 45 upper level credits (300 level and above).

Neuroscience Foundation Courses (51-54 credits)

A. Biology

- [BIOL 213](#) Cell Structure and Function ([Mason Core](#)) (4)
 - *Grade of C- required*

Select **one course** (3 or 4 credits) from the following, *Grade of C- required*:

- [BIOL 311](#) General Genetics (4)
- [BIOL 326](#) Animal Physiology (3) (offered sporadically)
- [BIOL 425](#) Human Physiology (3) (offered in summer only)
- [BIOL 430](#) Advanced Human Anatomy and Physiology I (4)
- [BIOL 431](#) Advanced Human Anatomy and Physiology II (4)

B. Chemistry

- [CHEM 211](#) General Chemistry I¹ ([Mason Core](#)) & [CHEM 213](#) General Chemistry Laboratory I ([Mason Core](#)) (4)
 - *Grade of C required*
- [CHEM 212](#) General Chemistry II ([Mason Core](#)) & [CHEM 214](#) General Chemistry Laboratory II ([Mason Core](#)) (4)

C. Mathematics

Select **one course** (3 or 4 credits) from the following:

- [MATH 113](#) Analytic Geometry and Calculus I ([Mason Core](#)) (4)
- [MATH 114](#) Analytic Geometry and Calculus II (4)
- [MATH 213](#) Analytic Geometry and Calculus III (3)

D. Statistics

Select **one course** (3 or 4 credits) from the following:

- [BIOL 214](#) Biostatistics for Biology Majors (4)
- [STAT 250](#) Introductory Statistics I ([Mason Core](#)) (3)
- [PSYC 300](#) Statistics in Psychology (4)
- [MATH 352](#) Statistics (3)

E. Physics

Select **one of the following sequences** (8 credits):

- [PHYS 243](#) College Physics I ([Mason Core](#)) & [PHYS 244](#) College Physics Lab ([Mason Core](#))
 - *Grade of C required*
- [PHYS 245](#) College Physics II ([Mason Core](#)) & [PHYS 246](#) College Physics Lab ([Mason Core](#))

OR

- [PHYS 160](#) University Physics I ([Mason Core](#)) & [PHYS 161](#) and University Physics I Laboratory ([Mason Core](#))
 - *Grade of C required*
- [PHYS 260](#) University Physics II ([Mason Core](#)) & [PHYS 261](#) University Physics II Laboratory ([Mason Core](#))

F. Psychology

Grade of C- required in each

- [PSYC 100](#) Basic Concepts in Psychology ([Mason Core](#)) (3)
- [PSYC 375](#) Brain and Sensory Processes (3)
- [PSYC 376](#) Brain and Behavior (3)
- [PSYC 373](#) Physiological Psychology Laboratory (1)

G. Computer Science

- [CDS 130](#) Computing for Scientists ([Mason Core](#)) (3)

H. Neuroscience

Grade of C- required in each

- [NEUR 327](#) Cellular, Neurophysiological, and Pharmacological Neuroscience (3)
- [NEUR 335](#) Molecular, Developmental, and Systems Neuroscience (3)

I. Technical Writing

Select **one course** from the following, *Grade of C- required*:

- [NEUR 410](#) Current Topics in Neuroscience (3)
- [NEUR 411](#) Seminar in Neuroscience (3)

Neuroscience Electives (24 credits)

Students should consult with an advisor to choose appropriate elective courses. Courses that are not on the pre-approved list below must be approved by the director of the program. If you would like to inquire about approval of a course not on the list, are unsure if a course will count as a neuroscience elective, or if you have taken a course listed below and it is not showing as a neuroscience elective in DegreeWorks, please e-mail an advisor at neurosci@gmu.edu.

WARNING: Be advised that many of the courses below require pre-requisites, which may or may not be included as part of the neuroscience curriculum. Be sure to look up pre-requisites when creating a 4-year plan. Consult the course catalog <https://catalog.gmu.edu/> and/or an advisor to ensure you take the proper pre-requisite courses.

Select **24 credits** from the following:

- [BENG 101](#) Introduction to Bioengineering
- [BENG 313](#) Physiology for Engineers
- [BIOL 305](#) Biology of Microorganisms
- [BIOL 306](#) Biology of Microorganisms Laboratory
- [BIOL 311](#) General Genetics
- [BIOL 326](#) Animal Physiology
- [BIOL 417](#) Selected Topics in Molecular and Cellular Biology (when topic is Foundations of the Mammalian Brain)
- [BIOL 420](#) Vaccines
- [BIOL 425](#) Human Physiology
- [BIOL 430](#) Advanced Human Anatomy and Physiology I
- [BIOL 431](#) Advanced Human Anatomy and Physiology II
- [BIOL 452](#) Immunology
- [BIOL 453](#) Immunology Laboratory
- [BIOL 471](#) Evolution
- [BIOL 483](#) General Biochemistry
- [BIOL 484](#) Eukaryotic Cell Biology
- [BIOL 515](#) Developmental Neurobiology
- [CDS 301](#) Scientific Information and Data Visualization
- [CHEM 313](#) Organic Chemistry I
- [CHEM 315](#) Organic Chemistry Lab I
- [CHEM 314](#) Organic Chemistry II
- [CHEM 318](#) Organic Chemistry Lab II
- [CHEM 321](#) Quantitative Chemical Analysis
- [CHEM 333](#) Physical Chemistry for the Life Sciences I
- [CHEM 334](#) Physical Chemistry for the Life Sciences II
- [CHEM 463](#) General Biochemistry I
- [CHEM 465](#) Biochemistry Lab
- [CHEM 464](#) General Biochemistry II
- [MATH 114](#) Analytic Geometry and Calculus II
- [MATH 203](#) Linear Algebra
- [MATH 213](#) Analytic Geometry and Calculus III
- [MATH 214](#) Elementary Differential Equations
- [NEUR 405](#) RS: Laboratory Methods in Behavioral Neuroscience
- [NEUR 410](#) Current Topics in Neuroscience (when not used to fulfill the technical writing requirement)
- [NEUR 411](#) Seminar in Neuroscience (when not used to fulfill the technical writing requirement)
- [NEUR 440](#) Independent Study in Neuroscience
- [NEUR 450](#) Honors Thesis Proposal
- [NEUR 451](#) Honors Thesis
- [PHYS 262](#) University Physics III ([Mason Core](#))
- [PHYS 263](#) University Physics III Laboratory ([Mason Core](#))
- [PSYC 304](#) Principles of Learning

- [PSYC 309](#) Sensation, Perception, and Information Processing
- [PSYC 317](#) Cognitive Psychology
- [PSYC 472](#) Current Topics in Brain and Behavior

The following courses have been pre-approved as neuroscience electives by the advising office, but are not currently listed in the catalog as electives. If you take one of these courses, please inform an advisor. The advisor will submit paperwork so the course shows properly in Degree Works.

- [BIOL 426](#) Mechanisms of Aging
- [BIOL 427](#) Biology of Obesity and Weight Loss (offered in summer only)
- [BIOL 482](#) Introduction of Molecular Genetics
- [MATH 116](#) Analytical Geometry and calculus II (Honors)
- [NEUR 406](#) Zebrafish Neurodevelopment Laboratory
- [NEUR 461](#) Special Topics in Neuroscience (you may take up to 12 credits in different topics)
- [NEUR 480](#) Biological Basis of Alzheimer's Disease
- [PSYC 441](#) Criminal Behavior: Psychological and Neurological Aspects
- [PSYC 461](#) Special Topics. NOTE: THIS IS ONLY APPROVED WHEN THE TOPIC IS:
 - Drugs and the Brain
 - Animal Cognition
 - Animal Behavior
 - Exploring Brain Health and Sickness in Books and Film
 - Disorders in the Brain
 - Psychology of Stress and Health
 - Neuronal Basis of Learning and Memory

In order to meet a minimum of 120 credits, this degree requires an additional 42-45 credits which may be applied toward any remaining [Mason Core](#) requirements (outlined on the next page) [Requirements for Bachelor's Degrees](#), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Mason Core

Note: Some [Mason Core](#) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining [Mason Core](#) requirements. Official Mason Core requirements are listed at <https://catalog.gmu.edu/mason-core/>.

Foundation Requirements

A. Written Communication

- ENGH 101: Composition (3)

B. Oral Communication

- Select an approved course at <https://catalog.gmu.edu/mason-core/> (3)

C. Quantitative Reasoning

- [MATH 113](#) Analytic Geometry and Calculus I (4) *Neuroscience Requirement*

D. Information Technology and Computing

- [CDS 130](#) Computing for Scientists (3) *Neuroscience Requirement*

Exploration Requirements

E. Arts

- Select an approved course at <https://catalog.gmu.edu/mason-core/> (3)

F. Global Understanding

- Select an approved course at <https://catalog.gmu.edu/mason-core/> (3)

G. Literature

- Select an approved course at <https://catalog.gmu.edu/mason-core/> (3)

H. Natural Science

- [BIOL 213](#) Cell Structure and Function (4) *Neuroscience Requirement*
- [CHEM 211](#) General Chemistry I & [CHEM 213](#) General Chemistry Laboratory I (4) *Neuroscience Requirement*

I. Social and Behavioral Sciences

- [PSYC 100](#) Basic Concepts in Psychology (3) *Neuroscience Requirement*

J. Western Civilization/World History

- Select an approved course at <https://catalog.gmu.edu/mason-core/> (3)

Integration Requirements

H. Written Communications

- ENGH 302 Advanced composition (3)
 - Literature Core is a pre-requisite to ENGH 302

I. Writing-Intensive *Neuroscience Requirement*

Select **one course** from the following:

- [NEUR 410](#) Current Topics in Neuroscience (3)
- [NEUR 411](#) Seminar in Neuroscience (3)

J. Synthesis/Capstone

- Select an approved course at <https://catalog.gmu.edu/mason-core/> (3)

4-Year Example Schedule (General)

First Year	Fall		Spring	
	Course	Credits	Course	Credits
	BIOL 103*	4	BIOL 213	4
	CHEM 211	3	CHEM 212	3
	CHEM 213	1	CHEM 214	1
	PSYC 100	3	MATH Requirement**	3-4
	Mason Core	3	Mason Core	3
	UNIV 100	1		
Total	15	Total	14-15	

Second Year	Fall		Spring	
	Course	Credits	Course	Credits
	BIOL 311	4	Statistics	3-4
	MATH Requirement** or Mason Core	3-4	PSYC 376	3
	PSYC 375	3	PSYC 373	2
	Neuro Elective**	3-5	Mason Core	3
		Mason Core	3	
Total	13-16	Total	14-15	

Third Year	Fall		Spring	
	Course	Credits	Course	Credits
	PHYS 243	3	PHYS 245	3
	PHYS 244	1	PHYS 246	1
	NEUR 327	3	NEUR 335	3
	Neuro Elective**	3	Neuro Elective**	3
	Mason Core	3	Neuro Elective**	3
Mason Core	3	Mason Core	3	
Total	16	Total	16	

Fourth Year	Fall		Spring	
	Course	Credits	Course	Credits
	NEUR 411	3	Neuro Elective**	3
	CDS 130	3	Neuro Elective**	3
	Mason Core	3	Elective	3
	Neuro Elective**	3	Elective	3
Neuro Elective**	3	Elective	3	
Total	15	Total	15	

This degree requires 120 total credits. 45 of these credits must be upper level (300 level and above).

*BIOL 103: It is recommended that students without a strong biology background take BIOL 103 before BIOL 213. BIOL 103 credits will count as 'general elective' credits towards your degree.

**MATH Requirement: Students must take MATH 113 or MATH 123/124 (2 semesters). Students must take the math placement test (http://math.gmu.edu/placement_test.php) to determine if they can enroll directly into MATH 113 (Calculus I). If you do not place directly into MATH 113, you will need to take MATH 105 (Precalculus) before MATH 113.

Core Sequence Recommendations

- Take ENGH 100 (or 101) as one of your first year Core courses
- Literature Core must be taken before ENGH 302
- ENGH 302 should be taken in the junior or senior year, and should be completed before NEUR 411
- Synthesis Core should be taken in the junior or senior year

Neuroscience Course Sequence Recommendations

- Take the PSYC sequence (PSYC 375, 376 & 373) before the NEUR sequence (NEUR 327, NEUR 335). Take these courses in the order suggested in the 4-year plan.
- Take NEUR 411 in the junior or senior year, after you have completed several of the required PSYC and/or NEUR courses and ENGH 302.

Neuroscience Electives

- 24 Neuroscience elective credits are required.
- Students who plan to apply to graduate programs, including the Accelerated M.S. Biology, should take Organic Chemistry I with Lab (CHEM 313 & 315) as one of their electives.
- See the list of pre-approved neuroscience electives in the course catalog at catalog.gmu.edu.
- Courses that are not on the pre-approved list below must be approved by the director of the program. If you would like to inquire about approval of a course not on the list, please e-mail an advisor at neurosci@gmu.edu.

Summer Courses

The program is designed so it can be completed without summer courses. However, taking summer courses can alleviate the course load during the fall and spring, and free up room to take more electives. We recommend all students meet with an advisor to discuss summer coursework.

4-Year Example Schedule (pre-med)

First Year	Fall		Spring	
	Course	Credits	Course	Credits
	BIOL 103*	4	BIOL 213	4
	CHEM 211	3	CHEM 212	3
	CHEM 213	1	CHEM 214	1
	PSYC 100	3	MATH Requirement**	3-4
	Mason Core	3	Mason Core	3
	UNIV 100	1		
Total	15	Total	14-15	

Second Year	Fall		Spring	
	Course	Credits	Course	Credits
	BIOL 311	4	PSYC 376	3
	MATH Requirement** or Mason Core	3-4	PSYC 373	2
	PSYC 375	3	CHEM 314	3
	CHEM 313	3	CHEM 318	2
	CHEM 315	2	Mason Core	3
		Mason Core	3	
Total	15-16	Total	16	

Third Year	Fall		Spring	
	Course	Credits	Course	Credits
	PHYS 243	3	PHYS 245	3
	PHYS 244	1	PHYS 246	1
	BIOL 430	4	BIOL 431	4
	BIOL 483	3	NEUR 327	3
	Statistics	3-4	Mason Core	3
Total	14-15	Total	14	

Fourth Year	Fall		Spring	
	Course	Credits	Course	Credits
	NEUR 335	3	NEUR 411	3
	BIOL 305	3	CDS 130	3
	BIOL 306	1	Mason Core	3
	SOCI 101	3	Elective	3
	Mason Core	3	Elective	3
Mason Core	3			
Total	16	Total	15	

This degree requires 120 total credits. 45 of these credits must be upper level (300 level and above).

*BIOL 103: It is recommended that students without a strong biology background take BIOL 103 before BIOL 213. BIOL 103 credits will count as 'general elective' credits towards your degree.

**MATH Requirement: Students must take MATH 113 or MATH 123/124 (2 semesters). Students must take the math placement test (http://math.gmu.edu/placement_test.php) to determine if they can enroll directly into MATH 113 (Calculus I). If you do not place directly into MATH 113, you will need to take MATH 105 (Precalculus) before MATH 113.

Core Sequence Recommendations

- Take ENGH 100 (or 101) as one of your first year Core courses
- Literature Core must be taken before ENGH 302
- ENGH 302 should be taken in the junior or senior year, and should be completed before NEUR 411
- Synthesis Core should be taken in the junior or senior year

Neuroscience Course Sequence Recommendations

- Take the PSYC sequence (PSYC 375, 376 & 373) before the NEUR sequence (NEUR 327, NEUR 335)
- Take NEUR 411 in the junior or senior year, after you have completed the PSYC and/or NEUR course sequences and ENGH 302.

Neuroscience Electives

- 24 Neuroscience elective credits are required.
- Pre-med students who take the recommended courses above (CHEM 313, CHEM 315, CHEM 314, CHEM 318, BIOL 483, BIOL 430, BIOL 431, BIOL 305, and BIOL 306 = 25 credits) will satisfy the neuroscience elective requirement through with these courses. However, we recommend students take additional neuroscience-related elective courses as their schedule allows.

Summer Courses

The program is designed so it can be completed without summer courses. However, taking summer courses can alleviate the course load during the fall and spring, and free up room to take more electives. In general, *we do not advise students take pre-med required courses during the summer*. We recommend all students meet with an advisor to discuss summer coursework.

Placement Exams and Transfer Credit

Math Placement Test

Students must take MATH 113 or MATH 123/124 (2 semesters) for this degree. Students must take the math placement test (http://math.gmu.edu/placement_test.php) to determine if they can enroll directly into MATH 113 (Calculus I). If you do not place directly into MATH 113, you will need to take MATH 105 (Precalculus) before MATH 113.

No placement test is required if you received AP/IB/transfer credit for MATH 105 or higher. However, the credit must be approved by Admissions before you can register for a higher math.

Placement test information:

Website: http://math.gmu.edu/placement_test.php

E-mail Catherine Sausville at csausvil@gmu.edu with questions

Transfer Credit

Evaluation of Transfer Credit (All transfer credit information, including equivalency search):

<http://admissions.gmu.edu/transfer/transferCreditEvaluation.asp>

Academic Credit by Exam (All credit exam information, e.g.: AP/IB score information):

<http://admissions.gmu.edu/exams/>

Honors in Neuroscience

Students in the B.S. in Neuroscience program have the opportunity to graduate with honors in the major by completing an honors thesis. The honors program is a 3 semester program that culminates in the successful completion and presentation of an honors thesis, which is an independent research project. Students who are interested in completing an honors thesis should plan to take NEUR 410 or NEUR 411, the writing intensive requirement for the neuroscience major, in their junior year. Catalog information about the honors program can be found at catalog.gmu.edu.

Course Sequence

1. NEUR 410: Current Topics in Neuroscience or NEUR 411: Seminar in Neuroscience. These are the writing intensive courses for the neuroscience major.
2. NEUR 450: Honors Thesis Proposal
3. NEUR 451: Honors Thesis

Eligibility

To be eligible, students must have completed at least 60 credits, have a minimum cumulative GPA of 3.25, and a minimum GPA of 3.25 in neuroscience courses.

Selecting a Thesis Advisor

Thesis projects are completed under the supervision of a faculty member at Mason, who serves as the “thesis advisor.” Students must identify a faculty member who agrees to serve as the thesis advisor before applying to the program. We recommend that students begin research in a faculty member’s lab 1 or more semesters before they are planning to enroll in NEUR 450: Honors Thesis Proposal.

Students who are interested in doing research at Mason, and potentially completing an honors thesis, should identify faculty whose research aligns with their interests. Contact these faculty to set up a meeting and discuss available research opportunities in their labs. Neuroscience faculty research interests and contact information can be found on the [faculty web page](https://cos.gmu.edu/neuroscience/people/) <https://cos.gmu.edu/neuroscience/people/>.

Applying to the Program

Students should apply to the program in the semester before they intend to enroll in NEUR 450. Follow the procedures below.

1. Get a verbal agreement from your thesis advisor to do the honors thesis.
2. E-mail the proposed thesis topic to the director of the B.S. in Neuroscience program, Saleet Jafri (sjafri@gmu.edu). Copy your thesis advisor on the e-mail.

Assembling a Committee and Enrolling

1. Once you have received confirmation of acceptance to the program, you should form a committee of 3 faculty who will evaluate your thesis. The committee will consist of the neuroscience director, your thesis advisor, and one additional neuroscience faculty member. We recommended that students discuss the selection of the additional faculty member with their thesis advisor. Once you have assembled your committee, send this information to the neuroscience director.
2. Enroll in NEUR 450: Honors Thesis Proposal. Enrolling in NEUR 450 requires an [Individualized Section Form](#), which should be submitted to a neuroscience advisor.

Completing the Program

1. While enrolled in NEUR 450, you should work on preparing your honors thesis proposal. Specific proposal requirements should be discussed with your thesis advisor. At a minimum, proposals should include: a description of the project, preliminary studies, and approach. The proposal should be submitted to your thesis advisor for approval. Once approved, the proposal should be e-mailed to the director of the B.S. in Neuroscience program, Saleet Jafri (sjafri@gmu.edu). Copy your thesis advisor on the e-mail.
2. Once the director has accepted your proposal, you will enroll in NEUR 451: Honors Thesis. Enrolling in NEUR 451 requires an [Individualized Section Form](#),
3. Requirements for the completion and presentation of the thesis in NEUR 451 should be discussed with your thesis advisor. Upon completion of NEUR 451, the completed thesis must be approved by both the thesis advisor and the program director.
4. To graduate with honors, students must earn a minimum GPA of 3.50 in their honors courses, maintain a minimum cumulative GPA of 3.25, and complete an honors thesis.

Research Opportunities

The Interdisciplinary Program in Neuroscience at Mason provides students with an abundance of opportunities to gain research experience.

Research Assistantships

The simplest way to begin gaining research experience is by volunteering as a research assistant in a lab at Mason. Typically, students begin seeking out research opportunities in their sophomore and junior years. The best way to find available research opportunities is to:

1. Identify faculty whose research aligns with your interests. Neuroscience faculty research interests and contact information can be found on the [faculty web page](https://cos.gmu.edu/neuroscience/people) <https://cos.gmu.edu/neuroscience/people>. You may also consider doing research with a faculty member outside of the neuroscience program. Faculty in [Psychology](#), [Biology](#), [Bioengineering](#), and other departments are all good options. Websites for some research centers and labs that may be of interest are listed below.
2. Contact faculty to set up a meeting and discuss available research opportunities in their labs. It is typical to reach out via-email. Keep e-mails brief, but include background about yourself, explain why you are interested in their lab. Demonstrate that you have read some of their research.

Once you have established research in a laboratory, you may be able to earn credit for this research through an Independent Study, the [Undergraduate Research Scholars Program \(URSP\) with OSCAR](#), or an [Honors Thesis](#). These options should be discussed with your research mentor.

Research Centers and Labs

*This list is not exhaustive of the research opportunities at Mason!

Centers:

- Center for Applied Proteomics and Molecular Medicine: <http://capmm.gmu.edu/>
- Center of Excellence in Neuroergonomics, Technology, and Cognition (CENTEC): <http://archlab.gmu.edu/people/rparasur/CENTEC.shtml>
- Center for Neural Informatics, Neural Structures, and Neural Plasticity (CN3): <http://krasnow1.gmu.edu/cn3/>
- Center for the Study of Neuroeconomics: <http://www.neuroeconomics.us/website/>

Labs:

- Arch Lab: <http://archlab.gmu.edu/about.shtml>
- Flinn Lab: <http://psychfaculty.gmu.edu/flinn/>
- Physiological & Behavioral Neuroscience in Juveniles (PBNJ) Lab: <http://krasnow1.gmu.edu/pbnj/>
- Kabbani Lab: <http://krasnow.gmu.edu/kabbani/>
- Fryxell Lab: <http://mason.gmu.edu/~kfryxell/index.html>
- Computational and Experimental Neuroplasticity (CEN) Lab: <http://krasnow1.gmu.edu/CENlab/research.html>
- Computational Neuroanatomy Group (CNG): <http://krasnow1.gmu.edu/cn3/index3.html>
- Krasnow Investigations of Developmental Learning and Behavior (KIDLAB): <http://krasnow1.gmu.edu/kidlab/>
- Neural Engineering Lab: <http://neural.bioengineering.gmu.edu/> and <http://nelab.onmason.com/>
- Complete Neuroscience Faculty List (w/ Research Bios): <https://cos.gmu.edu/neuroscience/people>

Internships and Programs

There are several internship opportunities that may be of interest to undergraduates, both within and outside Mason. For example:

- George Mason Aspiring Scientists Summer Internship Program (ASSIP): <http://assip.cos.gmu.edu/>
- Undergraduate Research Scholars Program (URSP): <http://oscar.gmu.edu/students/>
- Janelia Research Campus Undergraduate Scholars Program: <https://www.janelia.org/you-janelia/students-postdocs/undergraduate-scholars-program>
- NIH Summer Internship Program in Biomedical Science: <https://www.training.nih.gov/programs/sip>
- Georgetown Dean of Medical Education's Academy for Research, Clinical, and Health Equity Scholarship (ARCHES) program: <https://som.georgetown.edu/guarches>
- Neuroscience Seminar in Germany: <http://blogs.cofc.edu/germanneuro/>

Research and Scholarship Intensive Courses

The Interdisciplinary Program in Neuroscience offers several laboratory courses where students design and execute original scholarly research projects as part of the course. Many students present their projects as Mason's research symposiums and at regional and national meetings.

- **NEUR 405: Laboratory Methods in Behavioral Neuroscience**
- **NEUR 406: Zebrafish Neurodevelopment Laboratory**

Example Career Options in the Field of Neuroscience

Academic Colleges and Universities

Professor positions may be more research oriented or more teaching oriented

Non-University Research Institutes

Howard Hughes Medical Institutes (HHMI): <http://www.hhmi.org/>

Janelia Research Campus—Local branch of HHMI: <https://www.janelia.org/>

Santa Fe Institute: <http://www.santafe.edu/>

Salk Institute: <http://www.salk.edu/>

Hospital Affiliated Research

INOVA Translational Medicine Institute: <http://www.inova.org/itmi/home>

Government Research

National Institutes of Health (NIH): <http://nih.gov/>

National Institute of Neurological Disorders and Stroke (NINDS): <http://www.ninds.nih.gov/>

National Institute on Drug Abuse: <http://www.drugabuse.gov/>

National Institute on Aging: <http://www.nia.nih.gov/>

National Institute of Mental Health: <http://www.nimh.nih.gov/index.shtml>

Military Research

DARPA: http://www.darpa.mil/Our_Work/BTO/Programs/

Office of Naval Research (ONR): <http://www.onr.navy.mil>

Army Research Lab (ARL): <http://www.arl.army.mil/www/default.cfm>

Air Force Research Lab (AFRL): <http://www.wpafb.af.mil/AFRL/>

Pharmaceutical Companies

Pfizer: <http://pfizercareers.com/>

Roche: <http://www.rocheusa.com/portal/usa/careers> Johnson & Johnson: <http://careers.jnj.com/>

Merck: <http://www.merck.com/index.html>

Biotechnology Companies

Life Technologies: <http://www.lifetechnologies.com/us/en/home.html> Bio-Rad: <http://www.bio-rad.com/>

Illumina: <https://www.illumina.com/>

Tech Companies

IBM: <http://www.ibm.com/us/en/>

Northrop Grumman: <http://www.northropgrumman.com/Pages/default.aspx>

Advice to GMU Neuroscience Undergraduates

1. Check your degree status: <http://registrar.gmu.edu/students/degree-evaluation/>
2. GPA matters! A 3.5 GPA or above is considered competitive for graduate and medical schools.
3. Become familiar with PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/>
4. Top Neuroscience Journals:
 - Nature: <http://www.nature.com/nature/index.html>
 - Cell: <http://www.cell.com/>
 - Science: <http://www.sciencemag.org/>
 - Neuron: <http://www.cell.com/neuron/>
 - Journal of Neuroscience: <http://www.jneurosci.org/>
 - Nature Neuroscience: <http://www.nature.com/neuro/index.html>
 - Nature Reviews Neuroscience: <http://www.nature.com/nrn/index.html>
5. Article Access:
 - GMU E-journal finder: <http://library.gmu.edu/phpzone/ej.php>
 - D.C. Region Loan: <https://www.aladin.wrlc.org/Z-WEB/Aladin?req=main c>.
 - Interlibrary Loan: <https://gmu.illiad.oclc.org/illiad/VGM/logon.html>
6. Recommended Podcasts:
 - Nature Podcast: <http://www.nature.com/nature/podcast/>
 - Neuropod: <http://www.nature.com/neurosci/neuropod/index.html>
 - Nature Medicine Podcast: <http://www.nature.com/nm/podcast/index/html>
 - Science Podcast: <http://www.sciencemag.org/site/multimedia/podcast/>
 - Cell Podcast: <https://itunes.apple.com/podcast/cell-podcast/id207189884?mt=2>
 - Radiolab: <http://www.radiolab.org/archive/>
7. Recommended Blog: <http://www.sciencedaily.com/>
8. Neuroscience Resources:
 - Society for Neuroscience: <http://www.sfn.org/>
 - Allen Brain Atlas: <http://www.brain-map.org/>
9. Writing a professional email: https://www.training.nih.gov/writing_professional_e-mail
10. Satisfactory Academic Progress Policy (for Financial Aid): <http://financialaid.gmu.edu/satisfactory-academic-progress-sap/>
11. If you have any questions, please contact the Neuroscience Advisor at neurosci@gmu.edu