



Graduate Program in Genetics and Genomics: A Guide for Graduate Students, 2009-2010

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Graduate Program in Genetics and Genomics
Boston University School of Medicine

Introduction

Welcome to the Graduate Program in Genetics and Genomics (<http://www.bumc.bu.edu/gpgg/>), Boston University School of Medicine! It is a very exciting time to be studying genetics and genomics, and we are thrilled to be a part of this experience for you. The Graduate Program is an interdisciplinary, interdepartmental program housed in the Division of Graduate Medical Sciences. This guide is intended to summarize the requirements for graduate study in the program and to provide other helpful information for you. Other documents regarding academic policies and procedures, registration information, et cetera, are available in the Division of Graduate Medical Sciences, which is located in L-317 or on-line at <http://www.bumc.bu.edu/gms>.

Program Co-Directors

Dr. Shoumita Dasgupta will work closely with the directors of the Genome Science Institute in her roles as program director. Dr. Dasgupta, an Assistant Professor in the Department of Medicine, spearheaded the conception of the courses that contribute to the Graduate Program in Genetics and Genomics. Dr. Dasgupta will be working directly with other members of the program faculty to coordinate these efforts.

Because the program, places special emphasis on the quality of the teaching that will come out of our program, Dr. Dasgupta's position was created to ensure that the courses will be centrally-managed and quality-controlled. Additionally, she will be providing continuity to the courses by overseeing them globally as well as by teaching in them. Furthermore, Dr. Dasgupta will be responsible for managing operation of the program by instituting procedural changes as recommended by the various standing committees and serving as a liaison between the students and faculty. She will also review requests for substitute credit from advanced degree students, will adjust the curriculum to reflect scientific developments, and will evaluate performance of the faculty based on their teaching evaluations and in-class observations. It is our belief that having a faculty member devoted to the pedagogical aspects of our program will create a very high standard of excellence.

Richard H. Myers, PhD is Co-director of the Graduate Program in Genetics and Genomics, and director of the Genome Science Institute (GSI) on the Boston University Medical Campus. He has been a member of the faculty at the Boston University School of Medicine since 1980, and is currently Professor of Department of Neurology, and has academic appointments in the Department of Medicine, the Bioinformatics Program and in the School of Public Health, the Departments of Environmental Health, Biostatistics and Epidemiology. Dr. Myers is Director of the Neurogenetics Laboratory, which currently has funding from several NIH and foundation sources. He has mentored many doctoral students in his lab over the years (his former students have gone on to work at Pfizer pharmaceuticals, GlaxoSmithKline, Boston University School of Medicine, Tulane University, the University of Florida, Harvard University, and Applied Biosystems Inc. to

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name a few). Dr. Myers' role will include providing counsel to students as they develop their research interests and he will be particularly involved in mentoring GPGG students around dissertation projects. Dr. Myers will also facilitate the relationship between the GPGG and other programs on the BU Medical Campus and with the GSI faculty members.

Genome Science Institute Overview

The BUMC Genome Science Institute (GSI) was established in 2008 with the mission to expand our understanding of the role of genes in human health by fostering collaboration and serving as a resource for Boston University investigators engaged in genetics and genomics research and education. The GSI was formed in recognition that at BU excellent research in genetics and genomics spans many departments and schools, and that an institute connecting these varied investigators would have a synergistic effect. The GSI is directed by Richard Myers, PhD (Professor of Neurology) with Associate Directors Kenn Albrecht, PhD (Assistant Professor of Medicine) and Anita DeStefano, PhD (Associate Professor of Biostatistics) and has 120 faculty members from the schools of Medicine, Public Health and Dental Medicine. The GSI sponsors a seminar series, symposia, and other opportunities for formal and informal interaction among faculty and students. Please look for emails and notices from the GSI. The GSI leadership and faculty will work closely with the Graduate Program in Genetics and Genomics to continually expand and strengthen the opportunities for training and research for students at BU interested in genetics and genomics. The GSI directors can be contacted at gsi@bu.edu.

Program Faculty

Here is a current list of the program faculty, including degree, ranking, as well as their "specialties." Additional details on each faculty member's scientific interests can be found through the graduate program web site (<http://www.bumc.bu.edu/gpgg>).

Faculty	Degree	Position	Area of expertise
Kenn Albrecht	Ph.D.	Assistant Professor	Mammalian Gonadal Sex Determination
Yuriy Alekseyev	Ph.D.	Research Assistant Professor	Director, Microarray Resource
Shoumita Dasgupta	Ph.D.	Assistant Professor	Co-Director of Graduate Studies in Genetics and Genomics
Mark Eller	Ph.D.	Research Associate Professor	Telomere-based DNA Damage Responses
Lindsay Farrer	Ph.D.	Professor	Genetic Risk Factors for Neurodegenerative Disease
Alan Herbert	MBChB, Ph.D.	Assistant Professor	Genetics of Complex Traits in the NHLBI Framingham Heart Study Cohort

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Darrell Kotton	M.D.	Assistant Professor	Stem Cell Biology and Gene Therapy
Marc Lenburg	Ph.D.	Associate Professor	Data Analysis and Informatics for Microarray Experiments
Weining Lu	Ph.D.	Assistant Professor	Molecular Genetics of Kidney Development and Congenital Anomalies
Zhijun Luo	Ph.D.	Associate Professor	AMPK, Metabolic Syndromes, and Cancer
Jeff Milunsky	M.D.	Associate Professor	Genetics of Human Deafness
Monty Montano	Ph.D.	Assistant Professor	HIV Pathogenesis, Muscle biology, and Aging
Richard Myers	Ph.D.	Professor	Genetics of Adult Onset Complex Disease, Co-Director of Genetics and Genomics Graduate Program
Caryn Navarro	Ph.D.	Assistant Professor	Oocyte Specification and Development
Dan Remick	M.D.	Professor	Inflammation, Tissue Injury, and Death
Carol Rosenberg	M.D.	Associate Professor	Early Markers of Breast Cancer Tumorigenesis
Avi Spira	M.D./M.Sc.	Associate Professor	Genomics of Lung Cancer and COPD Diagnosis
Martin Steffen	M.D./Ph.D.	Assistant Professor	Technologies for Mammalian Systems Biology
Sam Thiagalingam	Ph.D.	Assistant Professor	Molecular Genetics of Breast and Lung Cancer

Genetics Research Outside the Program

There are also a number of labs carrying out genetics research in other departments of the School of Medicine, and some of them are the doctoral labs of our current students. We do support sending students to these labs, but each request must be made on an individual basis to insure that the proposed research and mentoring meet the education mission of the Graduate Program in Genetics and Genomics. Over the next few months, we will also continue to expand our list of thesis lab choices. A minimum of three rotations will be completed, and we ask that the first rotation be conducted with a member of our core faculty above. The second and third rotations can be selected from the broader genetics and genomics community at Boston University School of Medicine. Notably, the Genome Science Institute will be hosting a **research symposium on October 8 from 1-5 pm in Hiebert Lounge**. This will be a unique opportunity to learn more about potential rotation labs.

Genome Science Institute and Graduate Program Administrator . . .

University administrators are, admittedly, a strange breed. But we are lucky enough to have a saint working behind the scenes to make sure the program doesn't burst into flames or implode upon itself (figuratively, of course. If you see an actual fire, don't look for either of them because they'll be running like hell!). Below is Becky's photograph and details so you can easily recognize her face! She wears various hats throughout the day, but a good rule of thumb is that if your query involves money or tuition, see Becky.



Becky Washburn (beckyw@bu.edu), Financial Coordinator

Degree Requirements:

Your progression through the Ph.D. program will involve a number of components. As a first year student, your primary foci will be both coursework and rotations. Participation in laboratory rotations will provide you an opportunity to learn more about the research going on in labs in the Program before choosing a dissertation lab. Laboratory research should be taken as seriously as the coursework you will be doing at the same time. General outlines of the course requirements for students joining our Program through various mechanisms are below.

Ph.D. in Genetics and Genomics (Post Bachelor's)

Required Courses

Year One, Fall Semester

1. Principles of Genetics and Genomics, GMS GE 701	4
one of two below	
2. General Biochemistry, GMS BI 755	4
or	
Cell Biology, GMS MS 753	
	<hr/> 8 cr

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Year One, Spring Semester

1. Advanced Topics in Genetics and Genomics, GMS GE 702	4
2. Molecular Biology, GMS BI 782	<u>4</u>
	8 cr

Year Two, Fall Semester

Genetics and Genomics Colloquium I, GE 703	2
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Year Two, Spring Semester

Genetics and Genomics Colloquium II, GE 704	2
Ethico-Legal Issues in Bioscience, MS 610	4

Elective Courses¹

Year Two, 4 Elective credits total from the following lists:

Fall:

Human Genetics, GMS MS 781	4
Genetics and Epidemiology of Disease, GMS MM 701	2
Cellular Aspects of Development and Differentiation, GRS BI 610	4
Computational Biology: Genomes, Networks, Evolution, ENG BE 562	4
Comprehensive Immunology, GMS MI 713	4
Cancer Biology and Genetics, GMS MM 703	2
Pharmacogenomics, GMS PM 832	2
Protein Structure and Function, GMS BI 783	2
Molecular Mechanisms of Growth and Development, GMS BI 787	2
Receptors and Signal Transduction, GMS BI 790	2
DNA and Protein Sequence Analysis, ENG BE 561	4
Gene Regulation and Pharmacology, GMS PM 880	2
Molecular Basis of Neurologic Diseases, GMS MS 783	2
Systems Neuroscience, GMS AN 810	4

Spring:

Gene Targeting in Transgenic Mice, GMS BI 776	2
Biochemical Mechanisms of Aging, GMS BI 786	2
Mass Spectrometry and Functional Genomics, GMS BI 793	2
Elementary Biostatistics, GMS MS 700	2
Genetics of Microorganisms, GMS MI 714	4
Growth Control and Cell Transformation, GMS MI 717	4
Teaching Methods in the Biomedical Sciences, GMS AN 804	2
Technology Commercialization: From Lab to Market, MET AD 893	4

¹ If student interest exists in taking courses not listed above for elective credit, we will be flexible on this issue and will evaluate each request on a case-by-case basis.

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Neuroanatomical Basis of Neurologic Disorders, GMS AN 808	2
Cognitive Neuroscience, GMS AN 811	4

Additional information on these courses can also be found on our graduate courses web site (<http://www.bumc.bu.edu/gpgg/gpgg-core-courses>), on courseinfo (<http://courseinfo.bu.edu>) & blackboard (<http://blackboard.bu.edu>), and on the GMS web site (<http://www.bumc.bu.edu/gms>). The first year curriculum focuses on foundations in genetics and genomics as well as groundwork in the supporting core subjects of biochemistry, molecular biology, cell biology, and critical thinking. The second year will allow the students to focus their studies on an area relevant to their own dissertation research. For instance, a student in a “molecular mechanisms of cancer” lab may choose from electives that focus on cancer and growth control (MM 703, BI 790, MI 717). If a student chooses to focus their research on developmental genetics, a combination of related courses (GMS BI 787, GRS BI 610) may be more appropriate. In contrast, a student in a computational lab may choose to build on the quantitative aspects of genetics and genomics discussed in Principles of Genetics and Genomics (GMS GE 701) and Advanced Topics in Genetics and Genomics (GMS GE 702) with a more quantitative, model-oriented set of electives (ENG BE 561, ENG BE 562, GMS BI 793).

During their first year, graduate students will focus primarily on the coursework described above and on laboratory rotations. Because one of your rotation mentors will eventually become your dissertation advisor, you should take your rotation experiences quite seriously. We will require our Ph.D. candidates to participate in a minimum of three laboratory rotations to ensure exposure to a variety of scientific approaches. Due to time constraints, M.D.-Ph.D. students will have the option of joining a dissertation laboratory after two rotations. The rotations will last ten weeks each, with the dates indicated below.

Rotation	Choices due to Dr. Dasgupta	Dates in Lab
1	9/11/09	9/14/09 – winter break
2	12/18/09	1/4/10 – 3/5/10
3	3/5/10	3/8/10 – 5/14/10

Notably, the first rotation will be conducted with a core member of the Graduate Program in Genetics and Genomics. The M.D.-Ph.D. students often choose to begin their rotations during the summer between the Med I and Med II years; a second rotation can be carried out during the Med II fall semester or after completion of the Med II year over the summer. Both arrangements accelerate the M.D.-Ph.D. student’s thesis lab placement such that they have already joined their thesis lab prior to beginning their first year of Ph.D. study.

When considering rotation choices, many variables should be evaluated including area of research, availability of mentor, funding status of the lab, and publication record of the group, to name a few. To help you sort out these issues, please feel free to approach Dr. Kenn Albrecht, our program rotation advisor, as well as the program directors with your questions.

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The placement of the Ph. D. student in their first rotation will occur during the first week of school in the fall. This will allow the students to have a chance to meet the PIs in person to discuss potential rotation projects before choosing their first rotation advisor. Subsequent rotation choices will be based on information gathered by the students from research in progress seminars, informal meetings between the students and PIs, as well as from the fall Genome Science Institute Symposium. These matches will be coordinated by the Student Performance Committee who will maximize the number of students going to their top choice labs, ensure equitable distribution of students throughout the Program, and verify that the PI has the time, resources, and interest to train the students.

Upon completion of each rotation, students are asked to complete a rotation evaluation that summarizes the student's contributions to the research and the research environment. Similarly, the rotation advisor will also complete an evaluation to assess a student's performance in the rotation.

Subsequently, the candidate's dissertation advisor will be chosen from the pool of rotation advisors, and their thesis research will begin after completion of the third rotation. These placements will be made no earlier than the midpoint of a Ph.D. student's third rotation or an M.D.-Ph.D. student's second rotation. Similarly, the Student Performance Committee will oversee this matching process as well.

Post-Master's

Candidates who enter the program after completing an advanced degree, including students pursuing M.D.-Ph.D. degrees, will be eligible to substitute parallel coursework from their previous graduate institutions in lieu of any elective or course with the exception of Principles of Genetics and Genomics, Advanced Topics in Genetics and Genomics, and the Genetics and Genomics Colloquium. Appropriate substitutions will be approved by the Program Director upon documentation of similarity in scope and content of the previously completed course. In the case of Boston University medical students, we will eliminate the Biochemistry requirement and the Electives requirements. We are not making this type of substitution available to students for the three core Genetics and Genomics courses listed above because we want to ensure the quality of the knowledge base upon which our students will build their graduate studies. Formal coursework must account for a minimum of 14 of the 32 credits required of Post-Master's students and 22 of 32 credits required of M.D.-Ph.D. students. An outline of the curriculum options is included below.

Ph.D. in Genetics and Genomics (Post-Master's)

Required courses: Post Master's student with previous Biochemistry, Cell Biology, and Molecular Biology training

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Year One, Fall Semester

1. Principles of Genetics and Genomics, GMS GE 701 4
one of two below
2. General Biochemistry, (waive requirement)
or
Cell Biology, (waive requirement)

Year One, Spring Semester

1. Advanced Topics in Genetics and Genomics, GMS GE 702 4
2. Molecular Biology, (waive requirement)

Year Two, Fall Semester

- Genetics and Genomics Colloquium I, GE 703 2

Year Two, Spring Semester

- Genetics and Genomics Colloquium II, GE 704 2
Ethico-Legal Issues in Bioscience, MS 610 4

Elective courses: To be taken during either year one or year two
4 or fewer credits total (depending on possible waivers)
(e.g., a student who has taken both Biochemistry and Cell Biology: transfer waiver for one to requirements and for other to electives.)

M.D.-Ph.D. in Genetics and Genomics

Required courses: M.D.-Ph.D. student

Year One, Fall Semester

1. Principles of Genetics and Genomics, GMS GE 701 4
2. Cell Biology, GMS MS 753 4

Year One, Spring Semester

1. Advanced Topics in Genetics and Genomics, GMS GE 702 4
2. Molecular Biology, GMS BI 782 4

Year Two, Fall Semester

- Genetics and Genomics Colloquium I, GE 703 2

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Year Two, Spring Semester

Genetics and Genomics Colloquium II, GE 704	2
Ethico-Legal Issues in Bioscience, MS 610	4

Elective courses: no additional electives required.

Students from other programs within BUSM

Because of the highly interdisciplinary nature of the research that is carried out in the Graduate Program in Genetics and Genomics, our faculty have attracted the attention of a diverse group of students in other Departments and Programs. Some students who join labs in the Program, seek out faculty with joint appointments in their home Department. This body of students maintains their affiliation with their admitting graduate program but may participate in community events such as our seminar series. In addition, there is significant interest in joining the Graduate Program in Genetics and Genomics from the Program in Cell and Molecular Biology (CMB) in particular; upon choosing a thesis lab, these students must join the Department and Program of the advisor they have selected. At this point, they must fulfill the requirements of the new Program they have joined. Candidates who enter the Graduate Program in Genetics and Genomics after completing the first year curriculum of the CMB, will be eligible to substitute parallel coursework from their previous programmatic affiliation. An outline of the curriculum options for these students is included below.

Ph.D. in Genetics and Genomics, Program in Cell and Molecular Biology

Required courses:

Year One (CMB), Fall Semester

1. General Biochemistry, GMS BI 755	4
2. Cell Biology, GMS MS 753	4
3. Critical Thinking in Cell and Molecular Biology, GMS CM 761	<u>2</u>
	10 cr

Year One (CMB), Spring Semester

1. General Biochemistry II, GMS BI 756	4
2. Molecular Biology, GMS BI 782	4
3. Critical Thinking in Cell and Molecular Biology II, GMS CM 762	<u>2</u>
	10 cr

Year Two (G&G), Fall Semester

1. Principles of Genetics and Genomics, GMS GE 701	4
2. Genetics and Genomics Colloquium I, GE 703	<u>2</u>
	6 cr

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Year Two (G&G), Spring Semester

1. Advanced Topics in Genetics and Genomics, GMS GE 702	4
2. Genetics and Genomics Colloquium II, GE 704	2
3. Minicourse in Cell and Molecular Biology, GMS CM 766	2
4. Ethico-Legal Issues in Bioscience, MS 610	<u>4</u>
	10 cr

Elective courses: no additional electives required.

Although there is not currently significant overlap in the areas of study represented by the Programs in Behavioral Neurosciences and Medical Nutrition Sciences with our Program, because the research carried out in the Graduate Program in Genetics and Genomics is interdisciplinary in nature, it is feasible that areas of common interests may develop with time. To accommodate students wishing to engage in such interdisciplinary studies, we will ask them to enroll in our proposed first year curriculum as well as the Genetics and Genomics Colloquium during their second year of study. Tentatively, we will waive the elective requirement in lieu of their specialized training in Behavioral Neurosciences or Medical Nutrition Sciences. These unique situations will be resolved on a case-by-case basis by the Program Directors.

Responsible Conduct of Research Requirement

A University-wide program in the Responsible Conduct of Research (<http://www.bu.edu/research/policies/ethicsprogram.html>) is being offered on the Medical Campus and the Charles River Campus. The series of four seminars and case discussions will introduce students to some of the complexities of conducting research, including mentor and trainee responsibilities, publication practice and responsible authorship, research misconduct, and research involving animal or human subjects. **First year students are required to attend all four of these meetings**, two in the fall semester and two in the spring semester. Each session will be offered once on the medical campus and once on the Charles River campus. Registration will occur via the web, and an email announcement will be circulated to notify you of this process. Space permitting, advanced graduate students may also participate in these sessions.

Teaching Requirement

Ph.D. students, upon successful completion of the core courses, will be required to serve as teaching assistants for one of the Program's courses. The teaching assistants will serve to lead discussion and review sections as well as support exam and homework grading. The TA assignments will be made according to academic performance in the courses in question. Acting as a TA for one semester under Dr. Dasgupta's guidance will satisfy the teaching requirement for the Ph.D. degree, but further teaching opportunities will be available for students who are interested in developing these skills. For more information on these opportunities, please see Shoumita Dasgupta.

The Qualifying Process

Successful completion of the coursework and rotations during the first two years of graduate study will prepare the Ph.D. students to advance to Ph.D. candidacy through the qualifying process. This process depends on the following sequence of events:

- Completion of all required core and elective courses with a passing grade (A to B final overall grade for all courses with the exception of 900-level courses which are graded on a Pass/Fail scale). In addition, a student with 8 or more credits of permanent incomplete or failing (C+ final overall grade or lower for all courses with the exception of 900-level courses which are graded on a Pass/Fail scale) grades on their record will be asked to leave the program. We as a Program will also take the preemptive step of placing students on academic probation (as in other School of Medicine grad programs), if a student gets more than 8 credits of B-. This will be monitored by the Student Performance Committee.
- Skilled preparation of a five page, written, grant-style dissertation proposal based on their thesis research as well as a paper critique on an unrelated topic in genetics and genomics chosen by the chair of your examining committee. The inclusion of a written component in the qualification process will serve to normalize the process across the student body and to allow reserved personalities to demonstrate their aptitude. Furthermore, this portion of the qualifying process will satisfy the written qualification requirement of the Division of Graduate Medical Sciences.
- Proficient performance in an oral examination based on the written proposal and critique. This forum will test the student's ability to critically think about the area of their thesis research and about biological problems in general. The examining panel will also be free to explore outside topics in order to assess the student's knowledge of genetics and genomics broadly. The examining panel will be chosen by the student and dissertation advisor based on related areas of expertise to the proposed dissertation research. The panel will be composed of five faculty examiners, two members who must be core faculty of the Graduate Program in Genetics and Genomics and three additional members who are faculty members at Boston University School of Medicine. The outside faculty members may hold joint appointments with the Graduate Program in Genetics and Genomics as well as another graduate program. For CMB students, at least three of the members of the examining panel must be members of the CMB program. The examining panel will be required to adhere to the written guidelines of the Qualifying Examination Format Committee to ensure equitable administration of the exam. Students' proficiency on the exam will be judged in three categories by the examining panel: pass, pass requiring modifications, and fail. Categorization of students' performance as pass or pass requiring modifications can be reached through majority consensus of the examining panel, but a straight failure of the student will require a unanimous vote of the examining panel. A unanimous vote of inadequate performance on the qualifying exam, however, does not automatically block the student from retaking the exam; this decision will be left to the judgment of the panel and will be considered on a case-by-case basis. Before a student is offered the opportunity to retake the exam, he will receive feedback from the examining committee to help him identify areas to focus on in subsequent preparation for the second

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exam. If successful completion of the qualifying exam is not achieved, the Student Performance Committee, who will be familiar with the student's academic performance, and the examining panel will review the status of the Ph.D. candidate and consider if it is in the student's best interest to award an M.A. in Genetics and Genomics. A student will be eligible to receive an M.A. degree if they have successfully completed their coursework and have written a suitable Master's-level thesis.

These milestones normally must be met by September 1st at the start of the third year.

Dissertation Research:

Upon advancing to Ph.D. candidacy, graduate students will focus on their dissertation research. This research will be conducted under the supervision of their chosen graduate advisor. The student will be responsible for conducting a rigorous, in-depth program of investigation into an area of research that is within the scope of their graduate advisor's expertise and interests. The student's progress will be assessed continuously by the graduate advisor and at least annually by a dissertation advisory committee. This committee will be composed of the student's advisor and at least four other faculty members with a minimum of three faculty members from the Graduate Program in Genetics and Genomics and one Division faculty member from an outside department. The dissertation advisory committee will serve to provide outside perspectives on the research program and to mediate any disputes between the student and their advisor.

While the student is conducting their dissertation research, they are expected to actively participate in Program and Institute seminar series, lab meetings, and other research activities of their thesis lab.

Although the period of dissertation research will not be limited in maximal duration, it is the job of the dissertation advisory committee to facilitate expeditious progress towards the Ph.D. degree. Once the research has developed into several chapters of publication quality work, the advisory committee will ask the student to begin compiling her written thesis, and a date for the Division public seminar and formal dissertation defense will be scheduled. The public seminar will be delivered to a general audience of Division of Graduate Medical Sciences faculty, students, and researchers. Later that day, the public seminar will be followed by a formal dissertation defense which will occur behind closed doors in the presence of the Dissertation Advisory Committee. This committee will evaluate the student's thesis defense for satisfactory completion of the degree requirements.

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Funding:



The main source of funds for first year graduate students in the Program will be institutional funds granted to the Graduate Program in Genetics and Genomics through the Dean of the Medical School and the Division of Graduate Medical Sciences. These funds will support student stipends, tuition, health insurance, and fees. After the students complete their first year, their stipend support will be derived from their dissertation advisors' grants. In terms of individual funding opportunities, the graduate program requires students to apply for fellowships, in particular the National Science Foundation pre-doctoral fellowship. In addition, our graduate students are also eligible for Graduate Student Research Fellowships sponsored by the Russek Foundation and available through the Division of Graduate Medical Sciences. Fellowships are excellent resources for graduate students as they often cover stipend, provide funds for travel to meetings, can allow you to purchase a computer or other supplies, and look good on your resume! Details on these and other funding opportunities are included in a separate packet, but generally, students should prepare to assemble applications (research statements, letters of reference, etc.) in the fall of their second year.

Seminars: Program and Genome Science Institute
Seminars

Friday Forum / Research In Progress (Or, Institutionalized noshing)

Trainees in the Graduate Program in Genetics and Genomics and the labs of the Genetics Program, Department of Medicine have come together to put together a series of research-in-progress talks on alternating Fridays (generally 1st, and sometimes 5th, Fridays of the month) over pizza. These talks span an array of research areas from molecular genetics to bioinformatics to quantitative human genetics and more. Our students are required to attend throughout their graduate careers and to present approximately annually beginning in their second year. And before you know it, it'll be your turn to give one of these mind-expanding talks! But don't worry, these talks are meant to give students & post-docs an opportunity to present ongoing research to a broad audience, with the intention of receiving useful input and advice and informing your colleagues of the cool research we're doing in the Program. They should be 20-40 minutes long. (There is no shame in giving a well-prepared and concise 20-minute talk). Please aim to organize talks as such:

5-15 minutes for background

10-25 minutes for aims, experimental approaches, and results

5-10 minutes for future directions and discussion.

Trainee Journal Club (Or thinking outside the box)

The trainee journal club will meet on alternate weeks from the Friday Forum / Research in Progress series, generally on the 3rd Friday of the month. For each meeting one person is designated the discussion leader and is responsible for selecting a recent paper on any topic in genetics and genomics. Occasionally, there will be short paper presentations from second year students enrolled in the Genetics and Genomics Colloquium course as well. The purpose of the journal club is to discuss current high-impact research, critique the research presented, and discuss the relevance of this research to the field and to society. It is an interesting time to be in genetics research and this often leads to lively discussion. This also is a great opportunity for trainees to interact with each other in the absence of faculty, and when you get to that point, to consider post-doctoral research options as well. You will receive an e-mail about the first journal club meeting in mid-September.

Genome Science Institute Seminars

The new Genome Science Institute sponsors a seminar program featuring prominent guest speakers as well as internal speakers on Tuesdays at 3 pm. Students also have the opportunity to interact more privately with visiting seminar speakers through organized student lunch forums. In addition, the advanced graduate students will have the opportunity as a class to sponsor a formal Genome Science Institute seminar.

Miscellaneous

Library and Computer Resources

Many resources already exist to allow students to access books, journals, and computerized literature in the Alumni Medical Library of BUSM. Further information about what is available through the Alumni Medical Library can be viewed on their web site located at <http://med-libwww.bu.edu/library/elecres.html>. In addition, our students can make use of the available computing resources in their rotation and dissertation advisors labs. Finally, these resources can be accessed around the clock from off-campus by utilizing the Virtual Private Network (VPN) software available through BU Information Technology (<http://www.bu.edu/tech/help/vpn/>). Furthermore, the Institute will maintain an independent server that will run its own web site and will be accessible to the students for the creation of individual and lab web sites or for the distribution of public data.

Other Useful Stuff:

Staying Connected

E-mail: E-mail addresses are available in the library (12th floor of the L building) or online at (<http://www.bu.edu/webmail/>). Obtaining a valid email address should be part of your Division orientation activities. The webmail site offers access to your ACS e-mail through a user interface called Horde. Once you have an address, please let Becky Washburn (beckyw@bu.edu) and Nancy Roy (nroy@bu.edu) know what it is so that they can add you to seminar announcement lists. You should also make sure that all of your course managers have your e-mail addresses so that you will have access to all of the on-line course resources.

Mailboxes: Each first year student in the program has her own mailbox in E614. Once you choose a lab, your individual mailbox will be taken away and you'll find your mail in your lab's mailbox, but for now please check your mailbox every day (or at minimum every other day!) for important handouts, announcements, and monthly for your stipend checks.

Web site: www.bumc.bu.edu/gpgg

It's a good idea to check the web site out every week. Program news and important documents for current students are also posted. At some point on orientation day, we will take your photo for the program web site.

Student Link: <http://www.bu.edu/studentlink>

The Student Link gives you direct access to public and personal academic, financial and institutional data maintained in the University's central computer files. Whether you want to view your unofficial transcript, check your course schedules, or verify your student account status, Student Link makes it easy. Several Student Link services require a BU login name and Kerberos password. Items listed in italics are public.

Course Info: <http://courseinfo.bu.edu>

Blackboard: <http://blackboard.bu.edu>

Course Info and Blackboard are online resources for Boston University faculty and students. Instructors can post course assignments and materials for quick and easy student access. To find information for a specific class, go to the Course Info or Blackboard website; first select the current semester, then Graduate Medical Sciences, and finally the appropriate course (in our case, you would click on Principles of Genetics and Genomics on the Blackboard site). If you are using Blackboard, all of your courses should

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automatically appear in the margin. Please note that this is the final semester of courseinfo availability; we are in the process of transitioning completely to Blackboard.

City of Boston

Boston University Online City Guide

Please visit the Boston University Visitor Center's Boston Guide (<http://www.bu.edu/visit/boston/index.html>) for information about the city of Boston, including hotel accommodations, visual and performing arts attractions, restaurants, city tours and more.

Public Transportation in Boston

MBTA

For information about public transportation in the greater Boston area, including maps, fares, and schedule information, please visit the website of the Massachusetts Bay Transportation Authority (MBTA) at <http://www.mbt.com> or contact them at (617) 222-5218.

Boston University MBTA Semester Pass Program

Boston University students can purchase Massachusetts Bay Transportation Authority Semester Passes on-line through the University's Student Link (<http://www.bu.edu/studentlink>).

The Semester Pass program allows students to pre-pay for the fall semester (September through December) monthly "T" passes. The Semester Pass program is also available for the spring semester (February through May.) By pre-paying for four monthly passes, students can save approximately 11% off the regular monthly "T" pass price. This program is administered through TranSComm, and further details as well as the application can be found here: <http://www.bumc.bu.edu/parking/transportation-transcomm/mbta-service/>.

Welcome to Boston University

We're all very excited to have you join our Program as a student, and we want to encourage you to speak up if you have any questions or concerns.

Best wishes for an exciting, fascinating, and stimulating graduate career!