



The Graduate School *of the*
Stowers InstituteTM
for Medical Research

2023-2024
Catalog & Handbook

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MISSION STATEMENT

The mission of The Graduate School of the Stowers Institute for Medical Research is to prepare a superb cadre of predoctoral researchers from around the world for the pursuit of innovative and creative investigations in the biological sciences.

VISION STATEMENT

The Graduate School of the Stowers Institute for Medical Research will prepare a select group of young scientists whose truly transformative and integrative approaches to research will revolutionize 21st century biology.

PROGRAM VALUES

The program focuses on extending the ability of predoctoral researchers through hands-on laboratory experience that stresses highly critical thinking in combination with in-depth training in the latest methodologies.

PROGRAM PHILOSOPHY

GSSIMR is designed to provide exceptionally talented predoctoral researchers with mentorship and hands-on experience to refine their abilities to carry out independent biological research. The program emphasizes research as the primary component and seeks applicants with strong records of research as undergraduates and postgraduates. In addition, it is important that the predoctoral researchers come to GSSIMR with a high level of general knowledge and are willing to pursue the growth of that general knowledge on their own time.

CORE COMPETENCIES STATEMENT

The Core Competencies are a set of standards in which predoctoral researchers must demonstrate proficiency prior to program completion. These standards incorporate the mission, vision, program values, and program philosophy into actions that can be assessed and evaluated to ensure GSSIMR graduates are prepared for their next steps in pursuit of innovative and creative investigations in the biological sciences.

CORE COMPETENCIES

Predoctoral Researchers will demonstrate competency in each of these areas upon completion of their degree program.

1. Research Leadership

Predoctoral researchers will manage a scientific project by identifying significant biological problems, formulating hypotheses, considering a variety of experimental approaches, interpreting data from experiments using knowledge gleaned from literature, and discussing their ideas and results with other scientists.

2. Critical Thinking

Predoctoral researchers will demonstrate a strong capacity for critical thinking by reading, analyzing, and critiquing scientific articles and by critically assessing scientific talks. Using this knowledge, predoctoral researchers will identify gaps in knowledge and develop questions and experiments to address those gaps.

3. Scientific Knowledge

Predoctoral researchers will acquire strong scientific knowledge in their area of research and will use evidence from primary literature and laboratory expertise to demonstrate their knowledge of concepts, methods and models, including how they were derived and used. Predoctoral researchers will exhibit a broad basis of knowledge about other areas of research.

4. Experimental Skills

Predoctoral researchers will independently research appropriate scientific methods suitable for a biological question, devise applicable experiments with controls, execute the experiments in an organized and precise fashion, interpret the experimental results, perform appropriate statistical tests, and trouble-shoot experiments as necessary.

5. Scientific Communication

Predoctoral researchers will communicate their research by writing and presenting. They will write hypothesis-driven research proposals and descriptions of scientific discoveries, such as a scientific manuscript and/or a thesis of their own original research contributions and develop and refine their own writing through editing. Predoctoral researchers will create and present scientific talks that include an introduction, results and conclusions, effective graphics and slide content, and will respond to scientific questions.

6. Professional & Ethical Behavior

Predoctoral researchers will conduct themselves professionally and ethically as scientists. They will record and manage data with scientific integrity, comply with safety standards in the laboratory, communicate about situations when they observe unethical or unsafe behaviors by others, and be a collegial and reliable lab member and colleague.

HISTORY OF GSSIMR

GSSIMR was created by the scientists of the Stowers Institute for Medical Research (SIMR), with leadership from Scott Hawley who was later named the first Dean of the program. Together the Dean and faculty developed a graduate school that complemented the SIMR mission, “To make a significant contribution to humanity through medical research by expanding our understanding of the secrets of life, and by improving life’s quality through innovative approaches to the causes, treatment, and prevention of diseases.”

SIMR was established in 1994 through the extraordinary generosity of cancer survivors James “Jim” E. Stowers Jr., the founder of American Century Investments, and his wife Virginia G. Stowers, who dedicated their personal fortune to improving human health through basic research.

SIMR opened its doors to the first scientific research teams in November 2000 after completion of its state-of-the-art research facility in Kansas City, Missouri. Currently, SIMR is home to nearly 550 researchers and support personnel (including 100 postdoctoral research associates and 70 predoctoral researchers), 16 independent research programs, and more than a dozen technology development and core facilities. Notable discoveries from SIMR’s laboratories appear regularly in the leading peer-reviewed journals in biomedicine. Stowers scientists have established SIMR’s international reputation for highest quality basic research aimed at finding answers to some of the most important questions of human biology, health, and disease.

GSSIMR admitted its first class of 9 predoctoral researchers in 2012. The program continues to grow and there are currently 49 predoctoral researchers in the program and 29 Ph.D. graduates. Predoctoral researchers are in 12 labs of the 16 independent research programs.

Dean Hawley became Dean Emeritus in June 2019. On July 1, 2019 Matt Gibson assumed the role of Dean of the Graduate School and Sarah Zanders as Vice Dean. GSSIMR is accredited by the Higher Learning Commission (hlcommission.org), an institutional accreditor recognized by the U.S. Department of Education. Initial full accreditation was awarded November 4, 2021.

GSSIMR is a 501(c)(3) nonprofit corporation, incorporated in Missouri with a primary mission of providing graduate education relating to medical or scientific research, with an emphasis on innovative research techniques. The Stowers Institute for Medical Research (“SIMR”), a Medical Research Organization as defined in the Internal Revenue Code, is the sole corporate member of GSSIMR. GSSIMR and SIMR are members of the Stowers Group of Companies which is a unique group of interrelated nonprofit and for-profit organizations, each of which pursues different goals in furtherance of a common mission to make a significant contribution to humanity through medical research.

ADMINISTRATION

The daily operation of the graduate program is directed by the Dean, the Vice Dean, the Associate Dean for Administration & Registrar, the Assistant Dean for Administration and Assessment, and the Assistant Dean for Academic Affairs. The team also includes a Project Manager and is supported by the Administrative Coordinator. The Dean reports directly to the President.

FACULTY

The faculty of GSSIMR provides each predoctoral researcher with guidance and encouragement to support their success in a research program and assists with the next step in the developing scientist's career. The faculty includes principal investigators, heads of departments, and technology center directors from SIMR. They have each earned a Ph.D. degree (or equivalent) and are internationally recognized scientists. Each faculty member is considered a leader in their field, and many have developed the methodologies that allow much of the current effort in their respective field of study. All faculty members have published in peer-reviewed scientific journals, and most are the recipients of one or more prestigious honors or awards. The faculty members have extensive experience in teaching at the graduate level.

The **Faculty Governing Council (FGC)** is composed of all professors and research professors as voting members as determined by the Dean and approved by the Graduate School Board of Directors. The purpose of the GSSIMR Faculty Governing Council is to provide a forum in which the GSSIMR faculty community comes together to achieve its common mission and outcomes. Through the FGC, the faculty assumes primary responsibility for the determination and implementation of its academic programs and curriculum, for the teaching activities of GSSIMR, for the development of academic policies, and for input and recommendations on planning. They effectively discharge their responsibilities as well as initiate and contribute to the open communication and governance of GSSIMR. Further, the faculty receives and responds to information and communications which affect GSSIMR and faculty responsibilities. The faculty actively participates in decision-making for the program and in maintaining a superb graduate school. The FGC has four committees that assist in the work of the faculty. They are detailed below.

The **Academic Progression and Assessment Committee** is comprised of at least three faculty as voting members, one predoctoral researcher as a voting member, and the Associate Dean for Administration & Registrar and the Assistant Dean for Administration and Assessment as ex officio non-voting members. The Dean appoints the chair and members to this committee. The purpose of the Academic Progression and Assessment Committee is to establish and maintain an assessment program, lead the effort to assess achievement of the learning outcomes, as well as to evaluate criteria for progression and graduation, review academic conduct policy and procedures, and hear appeals.

The **Admissions Committee** is comprised of at least four faculty as voting members, two predoctoral researchers as voting members, the Assistant Dean for Academic Affairs as an ad hoc member, and the Assistant Dean for Administration and Assessment as an ex officio non-voting member. The Dean appoints the chair and members to this committee. The purpose of the Admissions Committee is to determine the criteria for admissions, which applicants will be interviewed, conduct the interviews, and select the applicants they consider to be most suitable for admission.

The **Curriculum Committee** is comprised of at least three faculty as voting members, no more than two predoctoral researchers as voting members, the Assistant Dean for Academic Affairs as an ad hoc member, and the Assistant Dean for Administration and Assessment as an ex officio non-voting member. The Dean appoints the chair and members to this committee. The purpose of the Curriculum Committee is to review and evaluate the curriculum in general, to consider vital content as well as deficiencies in the curriculum, and to discuss its major goals and directions. The committee shall provide a forum for faculty and administrators to discuss and make decisions regarding the content, design, delivery, and evaluation of the curriculum. The committee is open to feedback from predoctoral researchers and solicits this feedback when appropriate.

The **Rotation Committee** is comprised of at least three faculty as voting members and the Assistant Dean for Administration and Assessment as an ex-officio non-voting member. The Dean appoints the chair and members to this committee. The purpose of the Rotation Committee is to assess and evaluate the progress of all GSSIMR first-year predoctoral researchers during their second-term laboratory rotations in a fair and equitable manner and to assess their presentation skills. This evaluation is part of the continuous assessment of the predoctoral researchers' progress.

OBJECTIVES OF THE PROGRAM

The program stresses critical thinking and the rapid development of experimental prowess. The program also focuses on in-depth understanding of the latest methodologies and approaches. All successful predoctoral researchers share a demonstrated ability to perform biological research, as evidenced by previous research experience. Predoctoral researchers are expected to develop and execute a research project that addresses a significant biological question, which will result in a Ph.D. in Biology. Predoctoral researchers on average should complete the program in 5 to 6 years. Predoctoral researchers perform their thesis research in laboratories working at the cutting edge of modern biological inquiry under the direct supervision of outstanding investigators at the Stowers Institute for Medical Research (SIMR). The program culminates with the expectation that each predoctoral researcher is able to identify interesting biological problems, devise interdisciplinary approaches to those problems, and execute investigations using the best tools available.

DIVERSITY AND INCLUSION

The Graduate School of the Stowers Institute for Medical Research is committed to creating a welcoming and inclusive learning environment for all. We continually strive to create a culture where predoctoral researchers, research scholars, and summer scholars have equal access and equal opportunity regardless of race, ethnicity, nationality, gender or LGBTQ+ identity.

Inside and outside our walls, GSSIMR stands opposed to all forms of discrimination and racial injustice. We acknowledge that the roots of systemic racism throughout society are deep and tangled, and that bias and discrimination still exist within a scientific research community where not all scholars have equal access or recognition. While opposing blatant injustice in the world around us, we remain steadfastly committed to equality within our own program and to the long-term goal of dismantling all forms of discrimination in science.

ACCREDITATION AND CERTIFICATION

GSSIMR is accredited by the Higher Learning Commission (hlcommission.org) an institutional accreditor recognized by the U.S. Department of Education. Initial full accreditation was awarded November 4, 2021.

GSSIMR is certified by the State of Missouri to operate as an institution of higher education in the State of Missouri. Authority comes from the Missouri Department of Higher Education. GSSIMR reapplies for certification to operate each year.

ADMISSIONS

GSSIMR recruits predoctoral researchers who have already demonstrated a high degree of research proficiency. All applicants are required to have obtained a bachelor's degree (B.S. or B.A.) or equivalent from an accredited institution as a prerequisite for admission. Although the majority of entering predoctoral researchers will have a solid background in modern molecular biology and biochemistry, the program also encourages applications from candidates who have a demonstrated interest in disciplines such as mathematics, physics, chemistry, or computer science. In all cases, a record of previous scientific research is the primary criterion for admission as demonstrated through the summary of research submitted with the application, mentors' recommendation letters, and publications, if any. Grade point average (GPA) and test scores (e.g., GRE and TOEFL) are not required for admission to GSSIMR. All application materials must be submitted in English. No application fee is required.

International applicants must complete at least the equivalent of a U.S. four-year degree, including all state and external/internal examinations required for the degree/diploma. Usually this is a minimum of four years of study, beyond grade 12, at the university level, culminating with the award of a first or second degree. Although a degree in another country may have a name similar to a U.S. degree, this does not necessarily indicate the degree can be accepted as equivalent. For example, three-year general degrees (from Canada, India/Pakistan, France, Lebanon, etc.) are not accepted for admission to GSSIMR. International applicants admitted to the program work with Stowers Immigration Services to review and determine visa status on an individual case-by-case basis.

All official academic records must show the dates of enrollment; the subjects or courses taken, together with the units of credit or time allotted to each subject; and, if rank is determined, rank in the total class or group. The records must also include a complete description of the institution's grading scale or other standard of evaluation. Maximum and minimum marks and the steps between them must be indicated.

Unless academic records and diplomas are *routinely* issued in English by the institution, the official records *in their original language* must be submitted with an authorized, complete, and exact English translation. Applicants' academic credentials, if earned outside of the U.S., are reviewed for the purpose of assessing institutional accreditation, as well as the U.S. equivalency of the degree and grades.

Applicants are considered and accepted without regard to race, creed, color, religion, gender, sexual orientation, national origin, age, disability, military status, or any other status protected by law.

GSSIMR has two mechanisms for admission to the Ph.D. program. The standard admission process begins in September when the application service is open. Applications for the standard admission process must be received by December 1 (or the subsequent Monday, if December 1 falls on a weekend) for admission in August of the following year. The direct admission process begins on April 15 for admission in August of the same year.

Standard Admission Process

The application process is through a centralized application service for biomedical sciences programs, BioMedCAS. The application process includes a completed application form and the following items for each applicant:

1. Biographical information, educational background, and CV
2. Detailed summary of undergraduate or post-bachelor's degree research project(s)
3. List of publication(s) on which the applicant is an author with a description of their contribution to the paper(s)
4. Description of an interesting unanswered question in the field of study of a SIMR principal investigator. The response must include next step experiments or possible approaches that might best be used to address that problem.
5. Personal candidate statement
6. Description of any additional relevant research experience
7. Three reference letters
8. Official transcript(s) from all post-high school institutions

After further review by the Admissions Committee and a possible virtual interview, the applicants under consideration are invited to visit GSSIMR and SIMR to participate in a thorough interview process. Travel and accommodations for all interviewees is arranged and paid for by GSSIMR.

Each interview consists of the applicant doing the following:

1. Making a brief scientific presentation to the Admissions Committee and faculty members who choose to attend
2. Meeting individually with faculty members
3. Touring the facilities
4. Meeting with predoctoral researchers and alumni

Following the interviews in February, the Admissions Committee chooses candidates to whom to extend offers. The deadline for decisions from the candidates is April 15.

Direct Admission Process

GSSIMR faculty can host qualified applicants to join GSSIMR as predoctoral researchers for direct admission to their lab without laboratory rotations. Direct admission predoctoral researchers initiate their academic program at the beginning of either Summer or Fall term, complete the module course sequence, and then join the host lab without participating in rotations. All other GSSIMR academic requirements, policies, and protocols apply to direct admission predoctoral researchers. Applicants through the direct admission system must have at least 2 months experience in the host lab prior to applying to the program. This is equivalent to a rotation experience.

Direct admission applicants submit a complete application package to the Dean for Academic Affairs via the host PI by the established deadline for review by the Admissions Committee. This includes a completed application with biographical information and the following elements:

1. Cover letter written by the host PI
2. Applicant's CV
3. Two letters of reference from outside the host lab
4. Official transcript(s) from all post-high school institutions

5. Personal Statement
6. Research Project Summary
7. Research Goals Statement

Applicants who apply to the standard admission process can be eligible for the direct admission process with the support of a host PI following the standard admission cycle if an interview or an offer was not extended to the applicant.

The Admissions Committee direct admission review process begins after the receipt of final standard admission acceptances on April 15. Each interview includes the following:

1. A brief scientific presentation to the Admissions Committee and faculty members who choose to attend
2. Meeting individually with faculty members
3. Meeting individually with GSSIMR administration

The maximum total number of positions available for direct admission will be determined by the GSSIMR Dean and communicated to the Admissions Committee, with a maximum total of three per year. Admissions Committee members wishing to host a direct admit predoctoral researcher are recused from the entire review process. Individual labs may host one new direct admit predoctoral researcher per year and a total of no more than two direct admit predoctoral researchers at any given time.

ACADEMIC PROGRAM

The program at GSSIMR stresses critical thinking and the rapid development of experimental prowess, instead of traditional didactic coursework.

In August, the program starts with a series of intensive all-day modular courses with topics ranging from Gene Expression to Developmental Biology and Evolution and Model Systems. Attendance is required for each of the modules, which include significant lab work, as well as lectures and critical reading and discussion of relevant papers.

In the spring of their first year, standard admission predoctoral researchers engage in three consecutive two-month rotations in labs of their choice. Undistracted by traditional coursework, expectations are extremely high for predoctoral researchers to focus almost exclusively on a short-term research project. Direct admission predoctoral researchers do not participate in laboratory rotations and are directly admitted to a particular lab for thesis research. After completion of the modular courses, predoctoral researchers participate in a fifteen-week course that is devoted to the development of the necessary proficiency in scientific communication.

Standard admission predoctoral researchers enter their thesis research labs in June of their first year and direct admission predoctoral researchers enter in January of their first year. All predoctoral researchers undergo an assessment of knowledge, performance, and research progress within the first two years of their thesis research. Most critically, doctoral candidates are expected to develop and execute a research project that addresses a significant biological question to complete their degrees.

The function of the module courses is to introduce the predoctoral researchers to the core disciplines and expose them to the scientific capabilities of SIMR. Further, through the rotation courses and the thesis labs, the predoctoral researchers are provided the opportunity to have high-quality, hands-on experiences in the research of SIMR. Having exposure to the scientific capabilities and participating in the hands-on experiences positions the predoctoral researchers for success both in the program and beyond.

The program strives for the completion of a research project in five years. Upon completion of their research projects, predoctoral researchers are expected to be able to identify interesting biological problems; devise and create interdisciplinary approaches to those problems; and execute investigations using the best tools available. Predoctoral researchers are expected to demonstrate proficiency in the Core Competencies by the end of their program. The minimum requirements for successful completion of the Ph.D. program at GSSIMR are the passing of all modules, successful completion of a minimum of 126 credit units (although a predoctoral researcher completing five years of study and research will have a total of 196 hours), a passing grade on the Qualifying Assessment, a written thesis on original research, and the defense of the written thesis. No credit is given for hours earned at another institution. No 700-level course may be taken for credit more than once.

REQUIREMENTS FOR A PH.D. IN BIOLOGY DEGREE

Module Courses Requirement

Module courses are designed to introduce predoctoral researchers to a wide range of conceptual and practical topics relevant to research at SIMR and the wider scientific community. With the exception of *Scientific Communication*, each module meets all day each day for ten days. *Scientific Communication* is a two-credit unit course that meets for several hours after the module courses are completed.

Predoctoral researchers are required to attend all modules offered in the fall of their first year in accordance with the Attendance Policy (found under “Policies” in this Catalog/Handbook). It may be acceptable to miss a small portion of a module (up to one day). However, if extraordinary circumstances, such as a prolonged illness or family emergency, result in a predoctoral researcher missing a significant portion of a module, the same or equivalent module may be taken the following year. In all circumstances of absenteeism, regardless of length, the Dean and Assistant Dean for Academic Affairs must be notified immediately. Approval of a short absence must be obtained in advance, if at all possible, from the Dean and course instructors. Approval of make-up modules must be obtained from the Dean.

Module courses are subject to some modifications from year to year by the Curriculum Committee. Below are a list and description of the modules offered in the fall of 2023.

BIO 702	<i>Genomic and Computational Approaches to Understanding Gene Expression</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 706	<i>Neuroscience</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 707	<i>Cell Dynamics, Stem Cells and Developmental Biology</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 708	<i>Cell Biology</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 710	<i>Genetics</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 711	<i>Evolution and Model Systems</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 712	<i>Gene Expression: Transcription to Translation</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units

Genomic and Computational Approaches to Understanding Gene Expression

BIO 702

Regulation of eukaryotic transcription is a complex process involving interactions between transcription factors, RNA polymerase, chromatin structure and chromatin remodeling enzymes. With the rise of genomics and computational approaches, these components of transcription can be mapped at the genome-wide level *in vivo* and can be used to describe any biological system at the transcriptional level. Different data types from the same system can then be used to further dissect the mechanisms of gene regulation. In this module, predoctoral researchers learn to develop biological hypotheses that are testable by genomic methods, understand available experimental techniques and concepts for analysis, and critically evaluate the obtained results. A problem-driven

approach is used to analyze particular sets of high throughput data, discuss and implement appropriate analysis tools, and learn how to display and interpret the results. In order to enable all predoctoral researchers to more fully participate in the process, instruction of basic knowledge in UNIX, R, and statistics is an essential component of the course. Journal clubs with mandatory participation help the predoctoral researchers to understand how genomic methods have successfully been used to reveal transcriptional mechanisms and biological insights in a variety of systems. The module provides both a conceptual framework and practical skills for using genomic methods in future research.

Neuroscience

BIO 706

The brain is the most complex organ. It detects and evaluates environmental and internal stimuli to produce appropriate responses. From scratching nose to Beethoven's symphony, all spring from the organization of building blocks of the nervous system. In neuroscience, it is necessary to ask fundamental questions about how the nervous systems develop, organize, and function. The goal of this module is to survey important concepts developed in this vast field over the last 100 years and provide a framework to think about major unsolved problems in neuroscience. The course is designed to provide the predoctoral researchers with a perspective on the numerous fascinating and complex functions of the nervous system to stimulate an interest in their future research. To achieve this goal, conceptual issues will be discussed as well as some basic technical issues to facilitate reading and understanding of the literature.

The format of the course has two integral parts: a two-hour instructor-led session in the morning followed by a predoctoral researcher-led discussion session in the afternoon. In the morning session, odor-guided behaviors are used as a thread to introduce and discuss key questions and concepts, such as how animal senses the external world, how that information is conveyed to other areas of the brain, how various experiences are integrated, how animal produces a coherent response and how experiences in the moment creates a memory for the future. These key questions and concepts will not be restricted to just odor-guided behaviors but will also include other senses and systems.

The afternoon session will be in a journal club format focusing on a few landmark papers on specific topics. It is expected that the predoctoral researchers will identify the major conceptual question being addressed in the paper, the specific hypothesis, whether the data supports the conclusions and future directions. To make the course interactive and to pique predoctoral researchers' interest, predoctoral researchers will identify a topic/question that they wish to understand. Response from the predoctoral researchers will be considered in preparation of the course material.

Cell Dynamics, Stem Cells and Developmental Biology

BIO 707

The objective of this module is to gain theoretical knowledge and practical experience in modern developmental biology principles and techniques as they apply to whole organism development. This integrated module covers the dynamic cellular and morphogenetic processes involved in embryological development of organisms and their reiterated use in stem cell biology and regeneration. Introductory lectures are followed by in-depth analysis of some of the classical work on these topics. The goal is to help predoctoral researchers develop a clear understanding of the key questions addressed in this area of research, the basic approaches and useful

experimental models, and the unsolved mysteries for future scientists. With an emphasis on mouse, zebrafish and chick model organisms, this module covers the development and genetics of each species and the processes of cell migration and tissue morphogenesis; epithelial-mesenchymal transformation; musculoskeletal development; placode and sensory system development; and organogenesis and the signaling pathways that govern them. A central component of this module is practical experience in embryo manipulation and gain- and loss-of-function techniques for analyzing true *in vivo* gene function during embryogenesis. Each of these biology topics provides the basis for understanding the importance and regulation of stem cells and their applications to disease and regeneration.

Cell Biology

BIO 708

Predoctoral researchers will learn about cell biology by first discussing key cellular components, followed by cellular activities executed at the RNA and protein level. These topics are then integrated into the discussion of how cells communicate with their environment and each other by studying key signaling pathways. The laboratory portion of the module will expose predoctoral researchers to a wide array of microscopic methods used by cell biologists and will complement the didactic portion of the course. The module features introductory lectures followed by in-depth reading and analysis of some of the classical as well as up-and-coming work on these topics.

Genetics

BIO 710

The goal of this module is to introduce predoctoral researchers to sophisticated concepts in chromosome biology and genetics. The module provides predoctoral researchers with a basic understanding of genetic principals and how genetics can be used to yield biological insights. Concepts include genome stability and mutation, heritability, meiosis, mitosis, linkage and recombination, epistasis, complementation, and modes of inheritance. The module includes interactive lectures, assigned readings, and hands-on laboratory components. The lectures and readings cover both classic and modern experimental approaches. The laboratory components introduce sophisticated imaging techniques, including superresolution microscopy, used to study chromosome biology and allele transmission in model organisms such as *Drosophila melanogaster*, *Saccharomyces cerevisiae*, and *Schizosaccharomyces pombe*.

Evolution and Model Systems

BIO 711

The broad goal of this module is to introduce predoctoral researchers to current concepts in evolutionary biology, with an emphasis on comparative approaches within the field of evolutionary developmental biology. Predoctoral researchers will gain an appreciation for major themes in the history of life on earth, become familiar with the development of critical features of major phyletic groups within Metazoa, and learn the molecular mechanisms of inheritance which constitute the mechanistic basis for organismal evolution. This module course will cover evolutionary concepts encompassing the classical evolutionary perspective as well as modern DNA sequence-mediated approaches to understanding the origin of variation within and between species. Lectures and reading of the primary literature will highlight a diversity of invertebrate and vertebrate model organisms, as well as the emerging potential for the dual application of genomics and incisive molecular genetic methods to address questions in a wide variety of species. Developmental processes, such as signal transduction and the specification of cell types, will be discussed within an inter-species comparative framework. In addition,

ecological and physiological aspects of animal evolution will be considered. Consistent with a strong emphasis on the use of modern experimental methods to address evolutionary questions, the laboratory sessions are designed to familiarize predoctoral researchers with the wide variety of research organisms available within the Stowers Institute, as well as the unique advantages of each. Logistically, introductory morning lectures will be followed by either laboratory sessions or in-depth reading and analysis of classical and contemporary literature in the afternoons and evenings.

Gene Expression: Transcription to Translation

BIO 712

The focus of this module course is on fundamental principles of gene expression. The course covers the basics of messenger RNA (mRNA) transcription, stability, and translation in eukaryotic organisms. This module includes lectures, assigned readings, oral presentations, and experimental design. The module course covers chromatin remodeling and stages that can affect how much mRNA molecules are produced in a cell. Predoctoral researchers will discuss the transcription machinery and its role in gene regulation. The course also covers post-transcriptional regulation, covering molecular mechanisms that affect mRNA stability, as well as gene regulation at the level of translation. Gene regulatory network and RNA structures and biotypes including mRNA, tRNA, rRNA, and non-coding RNAs are discussed. This module includes lectures related to approaches taken to dissect molecular mechanism. Predoctoral researchers discuss gene regulation with respect to time and space as well as mRNA processing including splicing and poly-adenylation. In addition, this module includes experimental (“wet”) as well as computation (“dry”) experiments that allow the predoctoral researchers to learn about molecular techniques, equipment and models organisms, or systems that can be used to address biological questions. Scientific literature discussion across the module allows predoctoral researchers to learn more about a specific gene expression topic and practice oral communication through presentations and discussions about data visualization. Predoctoral researchers generate, collect, and analyze their own data as well as analyze published gene expression data. By the end of the module, predoctoral researchers present their data, conclusions, and future directions in scientific presentations.

Laboratory Rotations Requirement

During the spring semester of the first year, standard admission predoctoral researchers complete three consecutive two-month rotations in labs of their choice. Each rotation immerses predoctoral researchers in the research program of a single laboratory where they address a specific research question under the direction of an advisor and senior laboratory staff. Predoctoral researchers are expected to fully commit to the rotation lab and to successfully complete a short-term research project requiring substantial experimental effort. As a result of these three rotations, predoctoral researchers are in a position to enter a thesis laboratory of their choosing, with consent of the principal investigator. While the primary focus during laboratory rotations is on research work, predoctoral researchers are also expected to attend lab meetings, seminars, and journal clubs. Direct admission predoctoral researchers do not participate in laboratory rotations and are directly admitted to a particular lab for thesis research.

Predoctoral researchers are expected to work in the lab at least 36 hours per week. Each rotation is an 800-level course for 6 credit units, for a total of 18 credit units for the term.

BIO 801-840	<i>Laboratory Rotation I</i>	8 weeks	6 credit units
BIO 801-840	<i>Laboratory Rotation II</i>	8 weeks	6 credit units
BIO 801-840	<i>Laboratory Rotation III</i>	8 weeks	6 credit units

See the Laboratory Entry Policy and the Laboratory Rotations Placement Protocol in the GSSIMR Policy and Protocol Manual for the complete process.

Additional Course Requirement

Predoctoral researchers will complete an additional course early in their program. The course is designed to give predoctoral researchers experience reading and critiquing papers, and to teach them to present their ideas and opinions in written and oral form in a constructive, organized, and rigorous manner.

Scientific Communication

BIO 713

Predoctoral researchers will improve their skills relating to written and oral presentations of scientific research. The predoctoral researchers will write hypothesis-driven research proposals and descriptions of scientific discoveries based on course discussions, primary literature, and laboratory experiences. Predoctoral researchers will create and present scientific talks relating to lab topics. These talks will include an introduction, results and conclusions, effective graphics, and slide content, and will respond to scientific questions. The predoctoral researchers will learn to present their ideas and opinions in a constructive, organized, and rigorous manner. Predoctoral researchers will discuss Wednesday seminar speaker presentations to understand the components of effective scientific presentations.

BIO 713	<i>Scientific Communication</i>	24 weeks	2 credit units
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Thesis Research Requirement

Standard admission predoctoral researchers begin their thesis research immediately following the completion of the laboratory rotations requirement at the end of their first year. Direct admission predoctoral researchers begin their thesis research in the spring semester of their first year. Predoctoral researchers are expected to develop and execute a research project that addresses a significant biological question to satisfy the requirements of a Ph.D. degree. Following successful completion of the Qualifying Assessment, predoctoral researchers devote the remainder of their time in the program to laboratory research. They are also expected to participate in lab meetings, seminars, and journal clubs.

Supervisory Committees are formed after the predoctoral researcher enters the thesis lab. Each Supervisory Committee is comprised of a minimum of four faculty members, one of whom is the thesis research advisor. The remaining members (at least one of whom is an Investigator or Associate Investigator at SIMR) are appointed by the thesis advisor and predoctoral researcher and approved by the Dean. One of the committee members may be faculty from outside SIMR. The Supervisory Committee directly supervises a predoctoral researcher's progress toward the thesis and administers the Qualifying Assessment. The predoctoral researcher needs to notify the Associate Dean for Administration & Registrar of the committee members within three months

of being in the thesis lab. The Graduate School office covers the costs for the travel, meals, and accommodation for the Supervisory Committee member who is from outside SIMR.

Thesis laboratory research continues until the predoctoral researcher has defended a thesis through an open seminar and is examined by the Supervisory Committee.

The thesis laboratory is a 900-level course for 15 credit units for a fall term, 18 credit units for a spring term, and 6 credit units for a summer term, for a total of 39 credit units per year (fall, spring, and summer terms).

Qualifying Assessment Requirement

Overview

Within the first two years of their thesis research, predoctoral researchers undergo a Qualifying Assessment, which consists of a written thesis proposal and an oral presentation. The primary aim of the Qualifying Assessment is to provide the predoctoral researcher with an invaluable opportunity to receive intensive and constructive feedback in order to strengthen their thesis proposal. Predoctoral researchers will be evaluated with the Scientific Writing and Scientific Presentation Scoring Templates.

The written proposal should be conceived with assistance of a research advisor, but should represent the predoctoral researcher's own plan. The written proposal contains the specific aims of the research, detailed background, preliminary data, and planned experimental approaches for the thesis project being pursued or a closely related project. An additional part of the proposal is a brief summary (two to three pages, double spaced) of the objectives for the meeting, similar to what is prepared for any Supervisory Committee meeting. The written proposal will be evaluated by the Supervisory Committee using the Scientific Writing Scoring Template.

The oral component of the Qualifying Assessment includes the discussion of the project with the Supervisory Committee. The thesis advisor should be present for the discussion of the project but may not be present when the Supervisory Committee votes on a grade of Pass or Fail. The oral component will be evaluated by the Supervisory Committee using the Scientific Presentation Scoring Template.

Preparing for the Qualifying Assessment

Predocctoral researchers are expected to fully prepare for the Qualifying Assessment, and failure to adequately do so will require a second assessment within six months of the first attempt. Failure to adequately prepare for a second assessment is grounds for dismissal from the program as determined by the Academic Progression and Assessment Committee.

To schedule the Qualifying Assessment, the predoctoral researcher works with GSSIMR's Administrative Coordinator to find a date and time when all Supervisory Committee members are able to attend. Three hours should be allowed for the Qualifying Assessment, and the Administrative Coordinator will arrange a conference room and appropriate catering for the meeting. GSSIMR will arrange travel for the outside committee member and coordinate preparations with the lab's administrative assistant. Outside committee members may be present via virtual formats for the Qualifying Assessment.

The predoctoral researcher sends the written proposal and brief summary to the Supervisory Committee and the Associate Dean for Administration at least two weeks prior to the Qualifying

Assessment so the committee has time to read all of it. If the Supervisory Committee needs more than two weeks to read the proposal and summary, they need to let the predoctoral researcher know well in advance.

The written portion is 5-10 pages long, single space. It is written like an NIH proposal with Introduction, Specific Aims, Background and Significance, Preliminary Data, and Planned Experimental Approaches to address each Aim. Examples to review can be found at: <http://www.niaid.nih.gov/researchfunding/grant/pages/appsamples.aspx>. The written portion should contain clearly labeled figures and be carefully checked for spelling and grammatical errors. Some amount of time and effort needs to be applied to make an optimal proposal. It should be written by the predoctoral researcher, but can be revised with the aid of the research advisor and other members of the lab. An additional part of the proposal is a brief summary (two to three pages, double spaced) of the objectives for the meeting, similar to what is prepared for any Supervisory Committee meeting.

The Qualifying Assessment

The Qualifying Assessment is scheduled for three hours. The oral presentation component of the Qualifying Assessment is 20-30 minutes long and followed by extensive discussion. The presentation is less general than a Friday Science Club talk, but less specific than a lab meeting. It should be revised and practiced with the research advisor and other lab members.

The predoctoral researcher takes to the meeting a blank copy of the Qualifying Assessment Report document. At the beginning of the meeting, one committee member (not the advisor) is appointed as chair of the meeting to complete the Qualifying Assessment Report. After the oral presentation, all committee members sign one copy of the Qualifying Assessment Report, and the chair sends that in interoffice mail to the Associate Dean for Administration. Within a week of the Qualifying Assessment, the chair completes a blank form, emails it to the Associate Dean for Administration and copies all committee members, and attaches a copy of the written proposal.

Ph.D. Candidate Status:

Candidacy is defined as that period in a predoctoral researcher studies when they are deemed ready to undertake independent and original research resulting in a completed thesis. Predoctoral researchers who have achieved candidacy status are deemed to have acquired the necessary advanced knowledge of the subject by completing the course requirements, developed the needed technical skills for work in the subject, and demonstrated the ability to do the research necessary to begin work on a thesis. A predoctoral researcher must do the following before achieving candidate status:

1. Complete all module courses and laboratory rotation courses.
2. Complete the written thesis proposal that is approved by the Supervisory Committee.
3. Successfully complete the Qualifying Assessment.

Thesis Defense Requirement

Overview

The completion of a body of research that addresses a significant biological problem and is likely to result in at least one publication in a peer-reviewed journal is required for the successful completion of the Ph.D. research program. The Supervisory Committee will ultimately assess whether this criteria is met during the Thesis Defense. In general, the publication forms the main

body of a thesis. A detailed literature review precedes the thesis and a discussion of the possible next steps in the research follows the thesis. A detailed reference section is added at the end of the thesis with citations throughout the document.

To defend the thesis, a predoctoral researcher presents an open seminar and subsequently is examined by the Supervisory Committee. Satisfactory defense of the thesis and fulfillment of all requirements of GSSIMR results in the granting of the Ph.D. degree in Biology.

Preparing for the Thesis Defense

Prior to scheduling a Thesis Defense, the predoctoral researcher meets with members of their Supervisory Committee (at least the GSSIMR faculty members) with the intent of proposing the final timeline towards the Thesis Defense. This meeting is scheduled as a regular Supervisory Committee meeting with additional information about the predoctoral researcher's intent written in the summary provided to the committee. If the Supervisory Committee agrees to the proposed content of and a timeline for the Thesis Defense, the predoctoral researcher schedules it as instructed below.

To schedule the Thesis Defense, the predoctoral researcher works with GSSIMR's Administrative Coordinator to find a date and time when all Supervisory Committee members are able to attend. Four hours should be allowed for the Thesis Defense: one hour for the open seminar followed by three hours for examination by the Supervisory Committee. GSSIMR's Administrative Coordinator will arrange appropriate conference room(s) and catering for the meeting. GSSIMR will arrange travel for the outside committee member and coordinate preparations with the lab's administrative assistant. Outside committee members may be present via virtual formats for the Thesis Defense.

The predoctoral researcher sends the thesis to the Supervisory Committee and the Associate Dean for Administration at least two weeks prior to the Thesis Defense so the committee has adequate time to read and review the document. If the Supervisory Committee needs more than two weeks to read the proposal and summary, they need to let the predoctoral researcher know well in advance.

Co-Curricular Requirements

GSSIMR has identified specific co-curricular programs that are learning activities essential to the curriculum. The programs identified as co-curricular align with and augment the curricular goals stated in the Core Competencies. These co-curricular programs serve to enhance the academic program, are assessed with learning objectives based on the Core Competencies, and are not credit bearing.

Scientific Conferences and Courses

Predoctoral researchers attend scientific conferences and courses domestically and around the world. Conferences and courses provide a wider platform to discuss and disseminate scientific findings and emerging techniques. In addition to bolstering the current research of predoctoral researchers, conferences and courses provide a networking opportunity as predoctoral researchers meet leaders in their field from the US and around the world. GSSIMR provides funding for one conference or course per year to every predoctoral researcher. In addition, attendance to conferences and courses are funded by individual laboratory budgets and conference awards. No credit is awarded for attending or presenting at conferences or courses.

Laboratory Safety, Radiation Safety, and Biosafety Level 2 Trainings (12 hours)

These laboratory safety training sessions occur early in the program and consist of lectures and a tour. SIMR, while maintaining regulatory compliance with several federal, state and local agencies, has the responsibility to provide a safe and healthy working environment for all individuals associated with SIMR and to minimize the environmental impact of performing basic medical research. These courses are designed to give predoctoral researchers the tools necessary to conduct science in a safe manner at SIMR by discussing the regulatory requirements of OSHA, EPA, MDNR, NRC, and other regulatory agencies and applying them to real research scenarios. No credit units are offered for these trainings.

Responsible Conduct of Research Course (9 weeks; 2 hours per day, 1 day per week)

The course is required for all predoctoral researchers. The course lasts for nine weeks and meets weekly. Each course meeting is led by a panel of faculty and uses selected case studies to encourage practicing scientists to think about the principles of responsible conduct in research; to appreciate the devastating effect of scientific misconduct on public trust, institutional reputation, and individual careers; and to understand why at GSSIMR and SIMR there is zero tolerance for material deviation from commonly accepted standards for proposing, conducting, and reporting research. No credit is awarded for attending the course.

Science Club

Predoctoral researchers are expected to attend a weekly Science Club where GSSIMR's predoctoral researchers and SIMR's junior scientists present their research. Predoctoral researchers are required to present at least one time (and preferably more) during their tenure in the lab. No credit units are offered for attending Science Club.

SIMR Lecture Series

Predocctoral researchers are expected to attend the SIMR Lecture Series. The Lecture Series brings renowned scientists from around the world to SIMR to give talks about a variety of scientific topics. The thesis advisor may require a predocctoral researcher to attend other seminars throughout the year. No credit units are offered for attending seminars.

Extra-Curricular Opportunities

GSSIMR Course Teaching Assistant

Predocctoral researchers enrolled in the GSSIMR program can serve as a teaching assistant in GSSIMR module courses. Teaching assistants must participate in planning activities, assessment activities, and teaching components. However, teaching is not a requirement of the program, and no credit units are available for teaching.

Crossroads Programs

The Crossroads program at SIMR fosters a sense of community among predocctoral and postdoctoral researchers. Crossroads activities are organized by a volunteer committee and include a variety of career-related and professional development workshops covering skills such as funding and grantsmanship, oral presentation skills, and effective manuscript writing. The annual Crossroads Research Conference is one of the major scientific and social events that Crossroads organizes. Crossroads Research Conference provides predocctoral and postdoctoral researchers with the opportunity to present their research to their peers with oral and poster presentations and to socialize on an Institute-wide level. Crossroads also organizes career development workshops that provide career resources for predocctoral and postdoctoral researchers to help them reach the next stage of their careers.

Data Clubs

Predocctoral researchers organize weekly or biweekly meetings where they present their data or a recent journal publication to their fellow predocctoral researchers. Other researchers in the SIMR community whose work is relevant to the presenter can be invited to join. The meetings are informal and are designed to help support the GSSIMR predocctoral researchers' scientific progress and their community. No credit is awarded for organizing, presenting, or attending the meetings.

Supergroup Participation

Groups of SIMR laboratories that have similar interests or are in similar fields often form a "Supergroup." The formation of these groups is spearheaded by the heads of the laboratories (the Principal Investigators) or other senior scientists. Currently, there is a Translational Research Seminar Supergroup, a Chromosome and Gene Expression Supergroup, a Developmental Biology Supergroup, and a Cell Division Supergroup. Predocctoral researchers in the relevant labs attend the meetings of the supergroups, which generally occur bi-monthly, and present their research and data. This is an opportunity for the predocctoral researchers to gain further experience presenting to colleagues, listening to and responding to questions and feedback, and communicating with audiences. No credit is awarded for presenting or attending the meetings.

Open Mic Science Club

Predoctoral researchers organize, attend, and participate in a seminar series that occurs over the summer months. Predoctoral researchers and SIMR researchers present their work to their colleagues and get feedback from those in attendance. Like the Friday Science Club, which is suspended during the summers, Open Mic Science Club is an opportunity for predoctoral researchers to present to the wider SIMR community. No credit is awarded for organizing, presenting, or attending the meetings.

PH.D. SAMPLE PLAN OF STUDY

Fall – Year 1

Course Number	Course Title	Credit Hours
BIO 702	Genomic and Computational Approaches to Understanding Gene Expression	2
BIO 706	Neuroscience	2
BIO 707	Cell Dynamics, Stem Cells and Developmental Biology	2
BIO 708	Cell Biology	2
BIO 710	Genetics	2
BIO 711	Evolution and Model Systems	2
BIO 712	Gene Expression: Transcription to Translation	2
	TOTAL HOURS FALL	14

Spring - Year 1 – Standard Admission

Course Number	Course Title	Credit Hours
BIO 8XX	Rotation Lab- PI Name 1	6
BIO 8XX	Rotation Lab- PI Name 2	6
BIO 8XX	Rotation Lab- PI Name 3	6
BIO 781	Research Integrity Course	0
	TOTAL HOURS SPRING	20

Spring - Year 1 – Direct Admission

Course Number	Course Title	Credit Hours
BIO 9XX.1	Thesis Lab- PI Name	18
<i>Form Supervisory Committee (Direct Admission)</i>		

Summer - Year 1

Course Number	Course Title	Credit Hours
BIO 9XX.1	Thesis Lab- PI Name	6

Fall - Year 2

Course Number	Course Title	Credit Hours
BIO 9XX.2	Thesis Lab- PI Name	15
<i>Form Supervisory Committee (Standard Admission)</i>		

BIO 713	Scientific Communication	2
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Spring - Year 2

Course Number	Course Title	Credit Hours
BIO 9XX.3	Thesis Lab- PI Name	18

Summer - Year 2

Course Number	Course Title	Credit Hours
BIO 9XX.1	Thesis Lab- PI Name	6
<i>Have a minimum of one meeting with Supervisory Committee by the end of Year 2.</i>		

Fall - Year 3

Course Number	Course Title	Credit Hours
BIO 9XX.2	Thesis Lab- PI Name	15

Spring - Year 3

Course Number	Course Title	Credit Hours
BIO 9XX.3	Thesis Lab- PI Name	18

Summer - Year 3

Course Number	Course Title	Credit Hours
BIO 9XX.1	Thesis Lab- PI Name	6
<i>Complete Qualifying Assessment by the end of Year 3.</i>		

Fall - Year 4

Course Number	Course Title	Credit Hours
BIO 9XX.2	Thesis Lab- PI Name	15

Spring - Year 4

Course Number	Course Title	Credit Hours
BIO 9XX.3	Thesis Lab- PI Name	18

Summer - Year 4

Course Number	Course Title	Credit Hours
BIO 9XX.1	Thesis Lab- PI Name	6
<i>Have a minimum of one meeting with Supervisory Committee in Year 4. By the end of Year 4, have a minimum of two Supervisory Committee meetings, in addition to the Qualifying Assessment. A total of 6 meetings in Years 2, 3 and 4 is suggested.</i>		

Fall - Year 5

Course Number	Course Title	Credit Hours
BIO 9XX.2	Thesis Lab- PI Name	15

Spring - Year 5

Course Number	Course Title	Credit Hours
BIO 9XX.3	Thesis Lab- PI Name	18

Summer - Year 5

Course Number	Course Title	Credit Hours
BIO 9XX.1	Thesis Lab- PI Name	6
<i>Thesis Defense</i>		

TOTAL HOURS COMPLETED:**196**

EVALUATION IN THE PH.D. PROGRAM

Predoctoral researchers are expected to develop and execute a research project that addresses a significant biological question, which will result in a Ph.D. in Biology. Predoctoral researchers on average should complete the program in 5 to 6 years. The minimum requirements for successful completion of the Ph.D. program at GSSIMR are the passing of all modules, successful completion of 126 credit units (although a predoctoral researcher completing five years of study and research will have a total of 196 hours), a written thesis on original research, and the defense of the written thesis. No credit is given for hours earned at another institution. No 700-level course may be taken for credit more than once.

Grading Policy

GSSIMR uses the following grading scale:

- P: Passing
Equivalent to a grade of 70% or above.
- F: Failing
Equivalent to a grade of less than 70%.
- I: Incomplete
- WP: Withdraw Pass
- WF: Withdraw Fail

An instructor may assign the grade of I (incomplete) to predoctoral researchers who have been unable to complete the work of the course because of illness or serious reasons beyond their control. An incomplete grade is appropriate only when enough work in the course has been completed for predoctoral researchers to finish the remaining work without re-enrolling in the course or attending additional classes. The work must be completed within one calendar year, or the incomplete grade will automatically lapse to an F. Predoctoral researchers should not re-enroll in a class for which they earned an incomplete. Predoctoral researchers may not earn a degree or graduate with an incomplete on their transcript.

An instructor may assign the grade of WP (withdraw pass) to predoctoral researchers who are withdrawing from the course and have successfully completed enough work in the course for the instructor to determine a passing grade as of the withdraw date.

An instructor may assign the grade of WF (withdraw fail) to predoctoral researchers who are withdrawing from the course and are failing as of the withdraw date.

Two failing grades in the graduate program is grounds for dismissal. Prior to receiving a failing grade, the predoctoral researcher will be notified by the instructor and/or Assistant Dean for Academic Affairs that they are in jeopardy of not passing. During this conference the predoctoral researcher will be counseled as to what they need to do in order to successfully complete the course. The instructor and/or Assistant Dean for Academic Affairs will schedule a follow-up meeting in order to evaluate progress. Every reasonable effort will be made to assist the predoctoral researcher in their success.

Attendance

To meet the goals of the program, predoctoral researchers are expected to comply with GSSIMR's policies, fully participate in all phases of the research program, and maintain an acceptable time and attendance record. A predoctoral researcher who is unable to meet the time and attendance standard must notify the Assistant Dean for Academic Affairs in advance of the tardiness or absence. With prior approval from the advisor and the Assistant Dean for Academic Affairs, a predoctoral researcher may take personal days, the number of which will be determined by the predoctoral researcher's need. Excessive absences or late arrivals may be grounds for dismissal from the program. As defined by the general attendance policy, "In general, absences will be considered excessive when the absentee rate is 3% or greater. For calculating the absentee or late arrival rate, absences will not count if they are authorized." Authorized absences for predoctoral researchers include, but are not limited to, FMLA absences, vacation leave, jury duty leave, or approved unpaid leave.

Module Attendance for Predoctoral Researchers:

Predoctoral researchers are required to attend all portions of all modules. The required times will be distributed in the schedules that accompany each syllabus. These will include:

- 1) Lectures: in-class, Wednesday seminars, and Friday Science Clubs
- 2) Journal clubs
- 3) Laboratory sessions: scheduled time as well as any extra time that may be necessary to complete the work. If finished early, predocs may be dismissed by the laboratory instructors.

Any absence needs to be cleared by the lead faculty of that module prior to the absence either through email or in person. Reasons must be stated, and approval may be denied. Exceptions to this policy are made for emergencies where it may not be possible to contact faculty ahead of time. In those cases, predoctoral researchers are encouraged to contact the faculty and/or the Assistant Dean for Academic Affairs as they are able. Unexcused absences for non-emergency reasons will be referred to the Assistant Dean for Academic Affairs for subsequent action. In the event of class cancellation due to any reason including weather, predoctoral researchers will be notified via email.

See the Attendance Policy in the GSSIMR Policy and Protocol Manual for the complete policy.

Module Course Evaluation

Each module's faculty evaluates a predoctoral researcher's performance by using the module course report form, and when appropriate the scientific presentation template and scientific writing template, and assigns a Pass/Fail grade.

Laboratory Rotation Evaluation (Standard Admission)

Prior to each rotation, the predoctoral researcher communicates with the rotation advisor/advisor's lab and subsequently writes a paragraph that outlines the project, goals, and expectations to accomplish during their rotation. Following the approval by the rotation advisor (PI), the predoctoral researcher submits the approved paragraph to the Associate Dean for Administration & Registrar for the committee. At the end of each rotation, the predoctoral researcher and advisor complete the Rotation Lab Report. The predoctoral researcher writes a

paragraph to summarize the project, including what they learned and accomplished during the rotation, then forwards the report to the advisor. The advisor writes a paragraph to explain how well the predoctoral researcher executed the project, completes the rotation lab report, and assigns a Pass/Fail grade. The advisor submits the report to the Associate Dean for Administration & Registrar who assembles all reports for the committee. Toward the end of each rotation, the predoctoral researcher makes a presentation to the lab. At the end of the second rotation, each predoctoral researcher makes a brief presentation to the Rotation Committee on what they performed and accomplished in one of the first two rotations and answers queries raised by the committee members. This presentation is a shortened version of the predoctoral researcher's presentation to their rotating lab. The Rotation Committee evaluates the presentations using the rotation lab presentation report form and assigns grades for the presentations and provides those to the Dean.

Thesis Research Evaluation

Term Reports

Three times a year (at the end of each term), the Associate Dean for Administration & Registrar provides a Term Report template through ServiceNow to the predoctoral researcher and thesis advisor to complete. The predoctoral researcher provides a paragraph to explain their project(s) and progress made on their project(s) within the term, and indicates instances and completion of program milestones. The thesis advisor provides a paragraph in response to the predoctoral researcher's project summary, evaluates the predoctoral researcher's performance, confirms instances and completion of program milestones, and assigns a Pass/Fail grade. The thesis advisor submits the completed form through ServiceNow to the Associate Dean for Administration & Registrar.

Supervisory Committee Reports

The objective of the Supervisory Committee meetings is to evaluate the predoctoral researcher's progress, provide recommendations and feedback on their project(s), and assist with their professional development. Predoctoral researchers are required to meet with their Supervisory Committee once a year (and generally meet with them twice a year) to give an oral presentation of their progress.

Scheduling of the meetings is done by the predoctoral researcher and thesis research advisor, at times of year that are agreed upon in advance by the committee members. The suggested meeting time is two hours. The predoctoral researcher informs the Associate Dean for Administration of the meeting at the time it is scheduled, and the Graduate School office assists with meeting arrangements.

One week (seven days) prior to the Supervisory Committee meeting, the predoctoral researcher completes the Predoctoral Researcher Supervisory Committee Meeting Form and sends it to the committee members and Associate Dean for Administration. This form includes the summary of the previous Supervisory Committee meeting, objectives for the upcoming meeting, and summary of progress since the previous meeting (two to three pages, double spaced). The objectives can include topics such as a request for advice on a particular aspect of a project, review of soon-to-be published material, or discussion about readiness to defend a thesis.

Within a week after the Supervisory Committee meeting, the predoctoral researcher completes a summary report of the meeting. The predoctoral researcher should include the feedback

provided by the committee members at the end of the meeting including next steps. The predoctoral researcher then sends the report to the committee chair to finalize. Within three days of receiving the report from the predoctoral researcher, the chair completes the Supervisory Committee Meeting Report and emails the completed report including the completed Supervisory Committee Evaluation to the Associate Dean for Administration and copies all committee members.

Academic Progression Matrix

Once a year, at the end of the summer term, the Academic Progression Matrix is used by the thesis advisor(s) and the predoctoral researcher to assess the predoctoral researcher's learning based on the GSSIMR Core Competencies. The predoctoral researcher reviews each item on the matrix and rates themselves in one of five levels. Once completed by the predoctoral researcher, the thesis advisor completes their assessment of the predoctoral researcher. The predoctoral researcher and the thesis adviser meet to review and compare their assessments. They should make note of the differences, areas of strengths, areas of needed growth, and ways to advance to the next level. Upon graduation, the predoctoral researcher should reach the category of proficient in the matrix for the majority of the items in each category.

Qualifying Assessment

Within the first two years of their thesis research (by the end of the spring term of their third year in the program), predoctoral researchers undergo a Qualifying Assessment, which consists of a written thesis proposal and an oral presentation. The primary aim of the Qualifying Assessment is to provide the predoctoral researcher with an invaluable opportunity to receive constructive feedback in order to strengthen their proposal. The Supervisory Committee for each predoctoral researcher reviews the written proposal and hears the oral component of the Qualifying Assessment. The Supervisory Committee conducts a discussion with the predoctoral researcher regarding the project. The Supervisory Committee votes on a grade of Pass or Fail.

Thesis Defense

Following the thesis open seminar and the thesis examination, the Supervisory Committee discusses whether the thesis and the defense meet the criteria of "the completion of a body of research that addresses a significant biological problem." They discuss and record on the Thesis Defense Report comments, suggestions, and a grade (see below). This feedback and the grade are discussed with the predoctoral researcher immediately following a Supervisory Committee consensus. One of three grades is assigned: pass, conditional pass, or fail.

- A passing grade indicates that the predoctoral researcher has met all thesis requirements to receive a Ph.D.
- A conditional pass grade indicates specific adjustments that need to be made to the thesis document. These adjustments may be relatively minor (such as proper reference formatting) to rewriting poorly written sections of the thesis. Changes need to be made by the predoctoral researcher and sent to the Associate Dean for Administration & Registrar within 7 days of the defense. Once these specific changes are made, the thesis document, or sections in question, are redistributed to the Supervisory Committee by the Associate Dean for Administration & Registrar. All Supervisory Committee members respond to the Associate Dean for Administration & Registrar within 14 days of receiving the revisions. A written approval indicates that the predoctoral researcher has addressed their comments and thus meets all thesis requirements to receive a Ph.D. If more

revisions are necessary, this process will continue in 3-day intervals between the committee member who requests more changes, the predoctoral researcher, and the Associate Dean for Administration & Registrar until the committee member(s) is satisfied.

- A failing grade indicates that the predoctoral researcher has not met the stated criteria for a completed thesis. In issuing this grade, the Supervisory Committee must specify the areas that are lacking. This may include, but is not limited to, insufficient data to produce a “body of research that addresses a significant biological problem” to a poorly prepared seminar to unsatisfactory defense of the thesis. The Thesis Defense Report indicates the specific areas that need improvement, and the committee informs the predoctoral researcher at the end of their defense. Following this outcome, the chair of the Supervisory Committee will meet with the Dean to discuss the reasons for the failing grade. This meeting occurs within 7 days of the failed thesis defense. If the chair of the Supervisory Committee is not available, any Supervisory Committee member other than the thesis advisor may meet with the Dean. If the Dean is not available, the Assistant Dean for Academic Affairs may act in their place. Subsequently, the predoctoral researcher and the thesis advisor meet with the Dean to discuss the failing grade. The second Thesis Defense must be scheduled within 6-8 months after the first Thesis Defense. If more time is needed, this may be grounds for dismissal from the program.

PH.D. PROGRAM COMPLETION REQUIREMENTS

The minimum requirements for successful completion of the Ph.D. program at GSSIMR are the passing of all modules, successful completion of a minimum of 126 credit units (although a predoctoral researcher completing five years of study and research will have a total of 196 hours), a passing grade on the Qualifying Assessment, a written thesis on original research, and the defense of the written thesis.

MASTER OF SCIENCE IN BIOLOGY DEGREE PROGRAM

GSSIMR recruits, admits, and enrolls predoctoral researchers exclusively for the Ph.D. program. GSSIMR does not recruit, admit, or enroll predoctoral researchers whose primary objective is a master's degree. However, in certain cases, GSSIMR will confer a Master of Science (M.S.) in Biology to predoctoral researchers who, for various reasons and circumstances, elect not to complete the Ph.D. degree. Circumstances under which a predoctoral researcher could revise their enrollment include, but are not limited to, changes in marital status; changes in parental status; caretaking of a parent, sibling, spouse or child; health issues; and other life changing events.

As with the Ph.D. program, the M.S. program stresses critical thinking and the rapid development of experimental prowess. The program also focuses on in-depth understanding of the latest methodologies and approaches.

Requirements for M.S. Degree

The requirements for the master's degree include a passing grade for each of the module courses, successful completion of the lab rotation requirements, passing grade in the critical analysis of scientific literature course, and at least one year of thesis research as defined for the Ph.D. program (73 credits). In addition, the predoctoral researcher must successfully complete the Qualifying Assessment, submit a written thesis describing research work completed to date, complete the defense of the thesis, and secure a majority vote of the Supervisory Committee; and the thesis advisor must provide a written evaluation.

Predoctoral researchers must receive written permission from the Supervisory Committee, in consultation with the Dean, prior to pursuing a master's degree.

Module Courses Requirement for M.S. Degree

The following module courses are required for the M.S. degree. A complete list of courses with descriptions can be found in other sections of this Catalog/Handbook. Module courses are subject to some modifications from year to year by the Curriculum Committee. Below is a list of the modules offered in the fall of 2023.

BIO 702	<i>Genomic and Computational Approaches to Understanding Gene Expression</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 706	<i>Neuroscience</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 707	<i>Cell Dynamics, Stem Cells and Developmental Biology</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 708	<i>Cell Biology</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 710	<i>Genetics</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
BIO 711	<i>Evolution and Model Systems</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units

BIO 712	<i>Gene Expression: Transcription to Translation</i>	2 weeks (7 hours per day, 5 days per week)	2 credit units
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Laboratory Rotations Requirement for M.S. Degree (Standard Admission)

Standard admission predoctoral researchers complete three consecutive two-month rotations in labs of their choice. Each rotation immerses predoctoral researchers in the research program of a single laboratory where they address a specific research question under the direction of an advisor and senior laboratory staff. Predoctoral researchers are expected to fully commit to the rotation lab and to successfully complete a short-term research project requiring substantial experimental effort. As a result of these three rotations, predoctoral researchers are in a position to enter a thesis laboratory of their choosing, with consent of the principal investigator. While the primary focus during laboratory rotations is on research work, predoctoral researchers are also expected to attend lab meetings, seminars, and journal clubs. Direct admission predoctoral researchers do not participate in laboratory rotations and are directly admitted to a particular lab for thesis research.

Predocctoral researchers are expected to work in the lab at least 36 hours per week. Each rotation is an 800-level course for 6 credit units, for a total of 18 credit units for the term.

BIO 801-840	<i>Laboratory Rotation I</i>	8 weeks	6 credit units
BIO 801-840	<i>Laboratory Rotation II</i>	8 weeks	6 credit units
BIO 801-840	<i>Laboratory Rotation III</i>	8 weeks	6 credit units

See the Laboratory Entry Policy and the Laboratory Rotations Placement Protocol in the GSSIMR Policy and Protocol Manual for the complete process.

Additional Course Requirement for M.S. Degree

Predocctoral researchers will complete an additional course early in their program. The course is designed to give predoctoral researchers experience reading and critiquing papers, and to teach them to present their ideas and opinions in written and oral form in a constructive, organized, and rigorous manner.

BIO 713	<i>Scientific Communication</i>	24 weeks	2 credit units
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Thesis Research Requirement for M.S. Degree

Standard admission predoctoral researchers begin their thesis research in the summer of their first year. Direct admission predoctoral researchers begin their thesis research in the spring semester of their first year. They are expected to develop and execute a research project that addresses a significant biological question. Following successful completion of the Qualifying Assessment, predoctoral researchers devote the remainder of their time in the program to laboratory research. They are also expected to participate in lab meetings, seminars, and journal clubs.

Supervisory Committees are formed after the predoctoral researcher enters the thesis lab. Each Supervisory Committee is comprised of a minimum of four faculty members, one of whom is the

thesis research advisor. The remaining members (at least one of whom is an Investigator or Associate Investigator at SIMR) are appointed by the thesis advisor and predoctoral researcher and approved by the Dean. One of the committee members may be faculty from outside SIMR. The Supervisory Committee directly supervises a predoctoral researcher's progress toward the thesis and administers the Qualifying Assessment. The predoctoral researcher needs to notify the Associate Dean for Administration & Registrar of the committee members within three months of being in the thesis lab. The Graduate School office covers the costs for the travel, meals, and accommodation for the Supervisory Committee member who is from outside SIMR.

Thesis laboratory research continues until the predoctoral researcher has defended a thesis through an open seminar and is examined by the Supervisory Committee.

The thesis laboratory is a 900-level course for 15 credit units for a fall term, 18 credit units for a spring term, and 6 credit units for a summer term, for a total of 39 credit units per year (fall, spring, and summer terms).

Qualifying Assessment Requirement for M.S. Degree

Within the first two years of their thesis research, predoctoral researchers undergo a Qualifying Assessment, which consists of a written thesis proposal and an oral presentation. The primary aim of the Qualifying Assessment is to provide the predoctoral researcher with an invaluable opportunity to receive intensive and constructive feedback in order to strengthen their thesis proposal. Additional information about the Qualifying Assessment can be found in other sections in this catalog as well as in Protocol 1026 in the Policy & Protocol Manual.

Thesis Defense Requirement for M.S. Degree

The completion of a body of research that addresses a significant biological problem is required for the successful completion of the M.S. Degree. The Supervisory Committee will ultimately assess whether this criteria is met during the Thesis Defense. If available, published work forms the main body of a thesis. A detailed literature review precedes the thesis and a discussion of the possible next steps in the research follows the thesis. A detailed reference section is added at the end of the thesis with citations throughout the document.

To defend the thesis, a predoctoral researcher presents an open seminar and subsequently is examined by the Supervisory Committee. Satisfactory defense of the thesis and fulfillment of all requirements of GSSIMR results in the granting of the M.S. Degree in Biology.

In extraordinary circumstances, a proposal to modify the structure of the Thesis Defense may be submitted by the predoctoral researcher to the Supervisory Committee. The Supervisory Committee would need to unanimously agree to the request and then submit a written plan to the Dean for final approval.

For the complete Master's Degree Protocol, please refer to the Policy and Protocol Manual, Protocol Number 1029.

Co-Curricular Requirements for M.S. Degree

Co-curricular programs are learning activities that complement the formal curriculum. Programs identified as co-curricular align with and augment the curricular goals stated in the Core Competencies. These programs serve to enhance the academic program, are assessed with

learning objectives based on the Core Competencies, and are not credit bearing. There are five required co-curricular activities. These are Scientific Conferences and Courses, Science Club, SIMR Lecture Series, Laboratory Safety, Radiation Safety, and Biosafety Level 2 Trainings, and Responsible Conduct of Research Course. Additional information about the co-curricular requirements can be found in other sections in this catalog as well as in Protocol 1052 in the Policy & Protocol Manual. There are various extra-curricular opportunities available to predoctoral researchers including GSSIMR Course Teaching Assistant, Crossroads Program, Data Clubs, Supergroup Participation, and Open Mic Science Club. Additional information about the extra-curricular activities can be found in other sections in this catalog as well as in Protocol 1052 in the Policy & Protocol Manual.

M.S. SAMPLE PLAN OF STUDY

Fall - Year 1

Course Number	Course Title	Credit Hours
BIO 702	Genomic and Computational Approaches to Understanding Gene Expression	2
BIO 706	Neuroscience	2
BIO 707	Cell Dynamics, Stem Cells and Developmental Biology	2
BIO 708	Cell Biology	2
BIO 710	Genetics	2
BIO 711	Evolution and Model Systems	2
BIO 712	Gene Expression: Transcription to Translation	2
	TOTAL HOURS FALL	14

Spring - Year 1 – Standard Admission

Course Number	Course Title	Credit Hours
BIO 8XX	Rotation Lab- PI Name 1	6
BIO 8XX	Rotation Lab- PI Name 2	6
BIO 8XX	Rotation Lab- PI Name 3	6
BIO 781	Research Integrity Course	0
	TOTAL HOURS SPRING 2021	20

Spring - Year 1 – Direct Admission

Course Number	Course Title	Credit Hours
BIO 9XX.2	Thesis Lab- PI Name	18
<i>Form Supervisory Committee (Direct Admission)</i>		

Summer - Year 1

Course Number	Course Title	Credit Hours
BIO 9XX.1	Thesis Lab- PI Name	6

Fall - Year 2

Course Number	Course Title	Credit Hours
BIO 9XX.2	Thesis Lab- PI Name	15
<i>Form Supervisory Committee (Standard Admission)</i>		

The predoctoral researcher consults with the Dean and then submits a formal request to their Supervisory Committee to pursue the M.S. program due to unforeseen change in personal circumstances.

BIO 700	Scientific Communication	2
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Spring - Year 2

Course Number	Course Title	Credit Hours
BIO 9XX.3	Thesis Lab- PI Name	18

TOTAL HOURS COMPLETED

73

M.S. PROGRAM COMPLETION REQUIREMENTS

The minimum requirements for successful completion of the M.S. program at GSSIMR are the passing of all modules, successful completion of a minimum of 73 credit units, a passing grade on the Qualifying Assessment, a written thesis on original research, and the defense of the written thesis.

SUPPORT RESOURCES AND SERVICES

FINANCIAL SUPPORT

GSSIMR is committed to giving each predoctoral researcher the best research experience in an unrivaled research environment. The program philosophy embraces hands-on experiences, research as the primary component, and self-directed learning. In order to fulfill those goals, predoctoral researchers must constantly read, study, learn, and apply their knowledge. It is the belief of GSSIMR that predoctoral researchers should not be encumbered by a financial burden and should be given the opportunity to focus on research and gaining knowledge in order to successfully pursue innovative and creative investigations in the biological sciences. Therefore, GSSIMR does not charge tuition for the graduate program, nor does it participate in Title IV funding. For additional information please refer to the Policy and Protocol Manual, Policy 935.

GSSIMR provides highly competitive funding support throughout the program for each predoctoral researcher in good standing, does not charge tuition for the graduate program, purchases a laptop and necessary textbooks for each predoctoral researcher, and with SIMR covers all costs of instruction and research. The amount of the funding support is reviewed annually to ensure it remains competitive. As the Ph.D. program requires full time and effort, a predoctoral researcher may not supplement the funding support from other sources unless a written agreement to do so is obtained in advance from GSSIMR. For the complete policy, please refer to the Policy and Protocol Manual, Policy 131GS. Living expenses during the Ph.D. program are the predoctoral researcher's responsibility.

BENEFITS

In addition to the competitive funding support, GSSIMR provides the following insurance benefits, effective on the first day of the program: medical, pharmacy, vision, dental, basic life insurance, and accidental death and dismemberment. Predoctoral researchers are eligible to participate in the Stowers Group 403 (b) Plan. GSSIMR also provides the predoctoral researchers with travel and conference allowances, a laptop computer, and assistance with English language proficiency (if needed).

HEALTH AND WELLNESS

GSSIMR works with SIMR to provide many support tools for the overall health and wellness of the predoctoral researchers. InBalance is the official wellness program that focuses on whole-person wellbeing and is based on an international study by Gallup. InBalance focuses on six pillars of wellbeing and supporting each individual in each of these areas: Career, Financial, Social, Physical, Community, and Mental. Programming and support for each component is provided and participation from the predoctoral researchers is encouraged. Within the umbrella of InBalance, the Stowers Connection is a program that specifically aims at creating a web of information, resources, and social interactions to support the emotional wellbeing of SIMR members including predoctoral researchers.

Predoctoral researchers also have access to the Stowers Employee Assistance Program (EAP). The EAP is a short-term counseling and coaching benefit for personal or professional challenges from daily stressors to major crises and everything in between, via phone, face to face, and online

resources. The EAP is available 365 days a year and 24 hours a day and is no charge to the predoctoral researchers. SupportLinc is the Employee Assistance Program (EAP) as of 2023 and is offered as a free and confidential service for predoctoral researchers and their families to access 24 hours a day. These services include professional counseling and coaching, work-life balance support, daily living support, financial assist, child/adult care resources, legal assist, and a robust website for additional supports. EAP services are provided by highly trained and qualified professionals in counseling, coaching, well-being, stress, family matters, relationships, and much more.

Predoctoral researchers with SIMR medical benefits can access health care providers for physical and mental health needs via the website associated with their benefit plan.

Predoctoral researchers have 24/7 access to the campus fitness center. Equipment and classes are provided at no charge to the predoctoral researchers. They can work on their fitness at their own pace or participate in group exercise classes taught by certified instructors, such as yoga, body conditioning, strength, and agility. An indoor recreational facility is located at the Stowers Support Facility for team sports and other activities, including basketball, volleyball, and badminton. Predoctoral researchers also have access to 3 free individual fitness consultations to help them evaluate and reach their fitness goals.

ADDITIONAL COUNSELING SERVICES

Predoctoral researchers are eligible for free and confidential counseling on-site with a contracted mental health professional. Sessions are limited and can be scheduled by visiting the provider's website at: <http://sheryl-lavelock.clientsecure.me>.

GSSIMR has contracted with the University of Missouri-Kansas City (UMKC) to provide counseling services to predoctoral researchers. Predoctoral researchers can access counseling through UMKC's Community Counseling and Assessment Services. Counselors are Ph.D. students who are in the last stages of their program and understand the unique demands of doctoral programs. This service is free to GSSIMR predoctoral researchers, has convenient hours, and is located near GSSIMR. For additional information and to schedule an appointment call Kathryn Brewer, Ph.D. at 816-235-2725 or 816-235-5614 or contact her via email brewerkj@umkc.edu.

RELOCATION

GSSIMR provides each predoctoral researcher with financial assistance for eligible moving expenses to enable them to move from their previous city of residence to the Kansas City area. Upon arrival in Kansas City, a predoctoral researcher is provided with up to seven nights of transitional housing accommodations while they complete their arrangements to move into their own housing.

FACILITIES AND EQUIPMENT

GSSIMR is housed on the 10-acre campus of SIMR in the heart of Kansas City, Missouri. Lectures occur in conference and seminar rooms in the 600,000 square-foot facility, and laboratory work takes place in various laboratories and core facilities.

The SIMR campus is regarded as one of the most technologically advanced biomedical research facilities ever built. Predoctoral researchers conduct research in laboratories and scientific support facilities that contain basic, common research supplies and equipment as well as specialized equipment as needed by that laboratory or facility. Scientists also share equipment that is housed in common research areas.

SIMR's support facilities encourage collaboration among scientists and foster efficiency in research. Each facility is headed by an expert in the field who works with research teams to offer access to the latest technology and techniques.

GSSIMR's administrative offices are in a central location within the Research Buildings. The area contains a comfortable space with wireless access in which predoctoral researchers can meet, exchange ideas, and socialize. Also in the area are the R. Scott Hawley Classroom, a place to practice scientific talks, a kitchenette for snacks and beverages, and a work room with printers and office supplies.

Predoctoral researchers may exercise in the SIMR fitness center, which is open 24 hours per day. Also available to predoctoral researchers are indoor and outdoor recreation, such as volleyball, basketball, bocce ball, badminton, yoga and Zumba. Predoctoral researchers may walk through or relax in the fountain garden on the west side of the campus. In addition to the on-site recreation opportunities, predoctoral researchers are invited to participate in the annual Corporate Challenge activities with the Stowers Group of Companies (SGC). Started in 1980, the Kansas City Corporate Challenge is an Olympic-type event that allows Kansas City area corporations to interact with each other through a variety of sporting events.

The Stowers Café offers subsidized meals and a diverse menu. It is open for breakfast and lunch Monday-Friday and makes available packaged meals for other times. A self-service espresso and tea station is open 24 hours a day in the Café and is free of charge.

LEARNING RESOURCES AND SERVICES

ASSISTANCE WITH SCIENTIFIC WRITING AND PRESENTATIONS

Many of the module courses require predoctoral researchers to provide evidence of their understanding through written documentation and oral presentations. Some predoctoral researchers may find this aspect of science challenging, for reasons such as not being a native English speaker or not having much experience in scientific writing before starting the program. Therefore, support is provided by GSSIMR in the form of a consultant. The consultant works directly with the predoctoral researcher on their assignments by e-mail and/or face-to-face, depending on the needs of the predoctoral researcher. With the approval of a module instructor, predoctoral researchers requiring this additional support are given additional time (from a few days to up to one week) to complete an assignment. Any predoctoral researcher who has concerns about scientific communication should discuss those concerns with the Assistant Dean for Academic Affairs who may make arrangements with the consultant. GSSIMR, in consultation with the predoctoral researcher's thesis advisor and the Dean, may also support subsequent requests for editorial assistance.

LIBRARY SERVICES

The SIMR Library exists to facilitate and assist research and education and is an integral part of the graduate program. The library provides an organized and readily accessible collection of materials and information needed to meet the institutional, instructional and individual requirements of the researchers, instructors, and predoctoral researchers.

To provide this service, the library subscribes to over 300 electronic journals, contains a vast print journal archive and houses over 400 field-specific books while maintaining active collection development to assure the continued growth of the holdings. Among the databases, the library offers Science Direct Biological and Life Sciences, the Scopus citation database, and the Henry Stewart Talks online lecture series. The library offers dedicated inter-library loan borrowing with an average retrieval time of 24 hours. In a complex world of information, the library provides predoctoral researchers and researchers with personalized attention, training and instruction on library systems, databases, including the EndNote reference database, and Adobe Illustrator. In addition to around the clock, easy access to electronic holdings, the SIMR Library maintains a well-appointed physical location offering a quiet study environment with Wi-Fi and computer access.

Library Specialists at SIMR are professional members of the ALA, MLA, SLA among others. The library received the 2009 Outstanding Biomedical Library Award and the 2014 Excellent Return on Investment Library Award from the Health Sciences Libraries Network-Kansas City.

Predocctoral researchers and faculty using the SIMR Library also have access to all the library resources of consortial neighbors: Linda Hall Library of Science, Engineering and Technology; the AR Dykes Library of the University of Kansas, Medical Center; and the Miller-Nichols Library of the University of Missouri-Kansas City.

PUBLICATION ACKNOWLEDGEMENTS AND AFFILIATIONS

When preparing an article for publication, predoctoral researchers should list their affiliation with SIMR and use the following statement:

“This work was performed to fulfill, in part, requirements for _____’s thesis research in the Graduate School of the Stowers Institute for Medical Research.”

When an article is published, a predoctoral researcher must provide the citation to the Graduate School’s Administrative Coordinator for record keeping purposes.

PREDOCTORAL RESEARCHERS’ INVOLVEMENT OPPORTUNITIES

GSSIMR encourages predoctoral researchers’ involvement in GSSIMR outside of their research. The three main mechanisms for further involvement are:

Predocutorial Researcher Council. The council is a standing body that provides formal feedback to GSSIMR leadership on matters of concern to predoctoral researchers. The representatives on the council serve as liaisons between predoctoral researchers and the Grad School when necessary, meets with the predoctoral researchers as a whole prior to the dean meetings to discuss issues and concerns, receive feedback, and communicate information and updates from the Graduate School, and formally meets with the Dean at the conclusion of the Fall and Spring terms. The representatives on the council are the graduate school representatives on the following committees: Academic Progression Committee; Admissions Committee; Crossroad; Curriculum Committee; Strategic Planning Committee. In addition, the predoctoral researchers elect a chair who serves on the council for one year.

Representatives on Committees. Three GSSIMR faculty committees and one GSSIMR committee have predoctoral researcher representatives. The Academic Progression and Assessment Committee, Admissions Committee, Curriculum Committee, and Strategic Planning Committee each have one or two predoctoral researchers serving on the committees. These committees meet on a regular basis to discuss the business of GSSIMR. The predoctoral researchers participate by providing input into the policies and procedures related to predoctoral researchers and the academic program, providing feedback regarding the curriculum, and participating in the planning activities of GSSIMR.

The goal is to have a broad representation of predoctoral researchers on GSSIMR committees and achieve a balance that includes gender, year in program, and background. Each appointment is for one year with the possibility of being reappointed for an additional year. In order to participate in committee service, predoctoral researchers must be between year three and year five of their graduate program. When committee positions are available for predoctoral researchers, the Assistant Dean for Academic Affairs emails eligible predoctoral researchers. Predocutorial researchers then self-identify with their interest in an email reply. The Dean appoints predoctoral researchers to the committees.

GSSIMR Ambassadors. Predocutorial researchers have the opportunity to participate in the on-site admission interview weeks by serving as ambassadors. This gives the current predoctoral researchers opportunities to meet and get to know the applicants. The ambassadors guide

applicants to and from interviews, attend formal receptions and dinners, and interact with the applicants in informal settings. Feedback from the predoctoral researchers regarding the applicants is shared with the Admissions Committee prior to final selection.

Monthly Gatherings. During the fall and spring terms, the predoctoral researchers have monthly gatherings in the late afternoon. In addition to its social function, this time is used to discuss governance issues, report on ongoing projects, and solicit feedback from the predoctoral researchers as needed. Topics in the past have included pay increase discussion, accreditation and certification updates, rotations, and use of social media. Dinner is provided.

PREPARING FOR POSTDOCTORAL OPPORTUNITIES

As a predoctoral researcher progresses through the program, the best source for career advancement and placement is their thesis advisor. With the advisor's established networks of colleagues, the advisor is well suited to both evaluate and assist each predoctoral researcher with the next step in their career. Furthermore, the members of each Supervisory Committee bring a wealth of experience placing developing scientists in applicable career paths. In addition, the Dean and the Assistant Dean for Academic Affairs assist predoctoral researchers in any way possible to help them reach their career goals.

GSSIMR participates in the Crossroads organization at SIMR that fosters a sense of community among predoctoral and postdoctoral researchers. Crossroads activities are organized by a volunteer committee and include a variety of career-related and professional development workshops covering skills such as funding and grantsmanship, oral presentation skills, and effective manuscript writing. The annual Crossroads Research Conference is one of the major scientific and social events that Crossroads organizes. Crossroads Research Conference provides predoctoral and postdoctoral researchers with the opportunity to present their research to their peers with oral and poster presentations and to socialize on an Institute-wide level. Crossroads also organizes career development workshops that provide career resources for predoctoral and postdoctoral researchers to help them reach the next stage of their careers.

POLICIES

The following GSSIMR policies apply to predoctoral researchers enrolled in the Ph.D. and the Master's programs. Current versions of these policies are found in the GSSIMR Policy and Protocol Manual. Additional copies can be obtained by contacting the Graduate School office.

Academic Conduct Policy: Number 900

Predoctoral researchers must demonstrate personal integrity and honesty at all times in their coursework and research. Predoctoral researchers are obligated to refrain from acts they know or should have reason to know will impair their integrity or the integrity of the School. Because scientific research is the vital part of the curriculum of the School, predoctoral researchers are expected to adhere to the same high ethical standards in every facet of research as faculty and staff and to abide by policies of the School, Stowers Group of Companies (SGC), and Stowers Institute for Medical Research (SIMR). All forms of academic dishonesty or misconduct are prohibited. Violations under the jurisdiction of this Policy include, but are not limited to, cheating, plagiarism, fabrication, falsification, forgery, alteration, misrepresentation, or other practices that deviate from those commonly accepted within the academic and scientific communities, as determined and communicated by the School in its discretion.

Discipline

Violations of this Policy may result in a discipline up to and including dismissal from Institute.

A suspected violation of this Policy should be referred first to the relevant faculty member or the Dean for Academic Affairs. The faculty member will promptly review the facts and circumstances, determine whether a violation occurred, and, if so, recommend appropriate discipline to the Dean for Academic Affairs.

Suspension

Regardless of other language provided in this Policy, a predoctoral researcher may be suspended immediately from any classroom or lab session for inappropriate or unsafe behavior or failure to adhere to any School academic policy.

The faculty member will notify the Dean and Dean for Academic Affairs as soon as practicable when a predoctoral researcher receives an immediate suspension. In consultation with the faculty member, the Dean and Dean for Academic Affairs will explain conditions for reinstatement to the predoctoral researcher.

Immediate suspension may last from several hours up until the determination of the Dean for Academic Affairs. Faculty members are solely responsible for making the decision to suspend immediately a predoctoral researcher from classroom or lab sessions in progress for inappropriate or unsafe behaviors. At the time of a suspension by the faculty and as soon as practicable following an immediate suspension, conditions for reinstatement are explained by the Dean or Dean for Academic Affairs. Failure to meet the conditions of reinstatement may result in course failure.

During any suspension under this Policy, if it is an extended period, the predoctoral researcher's schedule will be halted and frozen until they are released from the suspension and return to class, lab activities, and program and activities.

The Dean for Academic Affairs will review the faculty member's recommendation based on information provided by the faculty member, determine whether a policy violation occurred and, if so, what discipline will be imposed, and notify the predoctoral researcher of the determination in writing.

Academic Appeal

A predoctoral researcher may appeal any of the following:

1. Failing final course grade.
2. Suspension from lab or course activities exceeding two weeks.
3. Recommendation for dismissal.

An appeal is initiated by the predoctoral researcher submitting a typed statement to the Chair of the Academic Progression and Assessment Committee, no later than seven (7) business days after being notified of the failing final course grade, suspension from lab or course activities, or recommendation for dismissal. The typed statement must include the following:

1. A description of the issue.
2. Specific steps that have already been taken to resolve the issue with the faculty and/or School administration.
3. Evidence supporting why the predoctoral researcher believes the decision made was inconsistent with existing School, SIMR or course policy, was arbitrary, or lacked sufficient evidence.

In preparing the appeal, it is the predoctoral researcher's responsibility and burden to prove that the action taken by the faculty was inconsistent with existing policy, arbitrary, or lacked sufficient evidence. The predoctoral researcher may seek assistance from a School faculty member as an advisor in preparing the statement for an appeal. The role of the advisor is to assist the predoctoral researcher in understanding the policy and procedure. The advisor's role does not include gathering information or presenting evidence.

The predoctoral researcher will submit the letter of appeal with supporting documents to the Chair of the Academic Progression and Assessment Committee. The Chair will forward appeal documents to faculty involved in the subject matter of the appeal or its resolution. Faculty will submit to the Chair of the Academic Progression and Assessment Committee within five (5) business days their response to the appeal document, including their supporting documentation. The Chair of the Academic Progression and Assessment Committee will forward the faculty's response to the predoctoral researcher.

The Academic Progression and Assessment Committee will meet within seven (7) business days of receiving all the written appeal documents to hear the appeal. The predoctoral researcher may request one continuance, not to exceed one week, for good cause. The predoctoral researcher and faculty will be notified 72 hours before the hearing of the time, date and location of the hearing. It is preferable that predoctoral researchers and faculty attend the committee hearing in person. However, GSSIMR will accommodate the use of speakerphone or approved virtual method for a predoctoral researcher, advisor, faculty member or committee members who are unable to participate in a face-to-face hearing. Members of the Academic Progression and Assessment Committee, the involved predoctoral researcher and faculty, and the predoctoral researcher's advisor will hear the appeal. The meeting is confidential and restricted to those

persons listed. If an incident involves more than one predoctoral researcher, each predoctoral researcher will be heard individually.

An Academic Progression and Assessment Committee member, who has been directly involved in the awarding of a failing course grade or recommending dismissal, will be replaced by a faculty member appointed by the Dean. If an Academic Progression and Assessment Committee member is the involved predoctoral researcher's thesis advisor, a replacement committee member will be assigned by the Dean for the purpose of the appeal.

The predoctoral researcher may be accompanied to the Academic Progression and Assessment Committee hearing by their thesis advisor. When the Academic Progression and Assessment Committee has heard all the evidence, the committee members will meet, in private, to discuss the appeal. The committee will make a decision within seven (7) business days after the hearing.

In an appeal of a failing course grade, the Academic Progression and Assessment Committee can either: 1) uphold the assigned grade or 2) return the grade to the faculty for reconsideration. If the faculty is asked to reconsider a grade by the committee, the faculty can uphold the assigned grade or change the grade. The faculty member will notify the committee of their decision within 72 hours. The faculty member's decision is final. The Academic Progression and Assessment Committee will notify the Dean and the predoctoral researcher of the outcome of the appeal.

If the outcome of an appeal results in dismissal from the program or suspension from lab or classroom activities for more than two weeks, the predoctoral researcher may make one last appeal to the Dean. The Dean of the Graduate School may take any action they deem is appropriate under the circumstances of the case. The decision of the Dean is final.

Readmission Following Dismissal

Dismissal from the School is a serious action and results when two (2) failing grades are earned in any course or the Academic Progression and Assessment Committee determine dismissal as the appropriate action. Therefore, a predoctoral researcher who has been dismissed from the School should not expect to be readmitted. A predoctoral researcher who is dismissed from the School may choose to apply for readmission through the Admissions Committee. The Admissions Committee may consider an application for readmission if there is clear evidence of probable future academic success. It is the predoctoral researcher's responsibility to support the application for readmission by submitting the following materials to the chairperson of the Admissions Committee:

1. A letter indicating the predoctoral researcher's interest to be considered for readmission and including a written plan for achieving future academic success in the program.
2. Letters of recommendation for readmission from both the academic advisor and another faculty member from the most recent course taken.

The Admissions Committee reviews these materials and the predoctoral researcher's overall academic record in making a decision and reserves the right to stipulate additional requirements for readmission.

Attendance Policy: Number 901

The SGC expects good attendance and punctuality. If a Covered Individual is going to be late for work or absent, the Covered Individual must call in each day of the lateness/absence as early as possible, and no later than one hour before the start of work unless prior arrangements have

been made. Notifying a co-worker is not sufficient; the Covered Individual must make every effort to speak with their supervisor and, if that is not possible, must leave a message for the supervisor on voicemail or e-mail.

Excessive absences or late arrivals may result in discipline, including termination. In general, absences will be considered excessive when the absentee rate is 3% or greater. For calculating the absentee or late arrival rate, absences will not count if they are authorized. Authorized absences include but are not limited to FMLA absences, vacation leave, jury duty leave, or approved unpaid leave. Sick days do count toward the absentee rate; the exceptions are FMLA sick days or sick days for which leave has been granted under the Americans with Disabilities Act or similar laws. Failure to call in or come to work three days in a row, absent extenuating circumstances, will be considered a voluntary resignation.

This policy will be interpreted in accordance with all applicable laws, including the Family and Medical Leave Act and the Americans with Disabilities Act.

ADDENDUM FOR COVID-19:

Due to the response to the COVID-19 pandemic by the Stowers Institute for Medical Research (SIMR), the ability to access the School and Institute may be limited. All predoctoral researchers are subject to these restrictions, including but not limited to staying home full time or limited access to the School and Institute.

Predoctoral researchers will need to maintain a connection with their supervisor(s) on regular intervals in order to ensure that they are considered 'in attendance.' Predoctoral researchers are expected to engage with their supervisor(s), lab, and the School staff (as needed) in order to maintain their productivity.

Predoctoral Researchers:

To meet the goals of the program, predoctoral researchers are expected to comply with the above policy, fully participate in all phases of the research program, and maintain an acceptable time and attendance record. A predoctoral researcher who is unable to meet the time and attendance standard must notify the Dean for Academic Affairs in advance of the tardiness or absence. With prior approval from the advisor and the Dean for Academic Affairs, a predoctoral researcher may take personal days, the number of which will be determined by the predoctoral researcher's need. Excessive absences or late arrivals may be grounds for dismissal from the program. As defined by the SGC Attendance Policy, "In general, absences will be considered excessive when the absentee rate is 3% or greater. For calculating the absentee or late arrival rate, absences will not count if they are authorized."

Authorized absences for predoctoral researchers include, but are not limited to, FMLA absences, jury duty leave, or approved unpaid leave.

Module Attendance for Predoctoral Researchers:

Predoctoral researchers are required to attend all portions of all modules. The required times will be distributed in the schedules that accompany each syllabus. These will include:

- 4) Lectures, both in-class and Wednesday seminars and Friday Science Clubs
- 5) Journal clubs

- 6) Laboratory sessions, both the scheduled time as well as any extra time that may be necessary to complete the work. If finished early, predocs may be dismissed by the laboratory instructors.

Any absence needs to be cleared by the lead faculty of that module prior to the absence through email. Reasons must be stated and approval may be denied. Exceptions to this policy are made for emergencies where it may not be possible to contact faculty ahead of time. In those cases, predocs are encouraged to contact the faculty and/or the Dean for Academic Affairs as they are able. Unexcused absences for non-emergency reasons will be referred to the Dean for Academic Affairs for subsequent action. In the event of class cancellation due to any reason including weather, predoctoral researchers will be notified via email.

Dress and Personal Protective Policy: Number 902

Dress Policy (General)

It is important that all covered individuals give a clean, neat, and appropriate appearance while participating in the School activities and courses. When Covered Individuals are not in a lab setting they are not restricted from wearing clothing that does not cover the legs (shorts, skirts, dresses), open-toed shoes, perforated shoes, and canvas sneakers. While in the lab, the PPE Requirements must be followed. In addition, it is recommended that Covered Individuals confine long hair and loose clothing.

PPE Requirements (Personal Protective Equipment)

Predoctoral researchers and summer scholars spend most of their time in a laboratory setting and they are to abide by the same requirements and recommendations for personal safety as others who work in laboratories at the Stowers Institute for Medical Research (SIMR). A baseline clothing requirement for entry to any laboratory space (or other space where hazardous materials may be used or stored) has been established and includes:

- Closed-toe, solid top shoes that completely cover the top of the foot
- Clothing (pants, leggings, scrubs, long skirt) that covers the legs so that there is NO exposed skin. Nylons, stockings, and pantyhose do NOT meet this requirement.
- Gloves if touching potentially contaminated equipment

When handling chemical, biological or radiological materials, one must wear the appropriate protective equipment which includes, at a minimum, a lab coat, safety glasses, and appropriate gloves, all of which are provided by SIMR. For a more complete description of the requirements, see the complete PPE Requirements from Environmental Health & Safety on the following page.

Any predoctoral researcher or summer scholar who does not abide by the recommendations will be reprimanded by their faculty or advisor with a verbal warning. If more than one verbal warning is required and the problem persists, the predoctoral researcher or summer scholar can be referred to the Dean for Academic Affairs for further intervention and issue resolution. Any predoctoral researcher or summer scholar who does not follow the proper procedures when handling chemical, biological or radiological materials will be reprimanded by their faculty or advisor and may be prohibited from working with those materials in the future.

Technology and Software Policy: Number 904

One benefit provided by GSSIMR to predoctoral researchers is a laptop with necessary related devices (e.g., adapters) and software ("equipment"). This equipment is owned by the School and

is issued to predoctoral researchers once, when they start the graduate program. An iPad may be loaned from the School if needed for coursework. It is the responsibility of each Covered Individual to be a responsible steward of this School equipment. When a Covered Individual arrives at SIMR from travel outside the United States, for security purposes the hardware is wiped and reimaged before allowed to access the SIMR network. Prior to bringing the hardware to the SIMR campus, the Covered Individual needs to back up any data on the hardware and contact IT to make arrangements for IT to receive, reimage, and return the hardware in a timely manner. For the complete Technology and Software Policy, please refer to the Policy and Protocol Manual, Policy Number 904.

Grievance Policy: Number 910

In all situations, a predoctoral researcher with a grievance regarding on-going coursework, faculty, policies and protocols of the School or non-academic issues should attempt to resolve the grievance with the person responsible. If not resolved, the predoctoral researcher should consult with the Dean for Academic Affairs and/or the Human Resources Officer who will advise the predoctoral researcher and serve as a liaison between the predoctoral researcher, the person responsible, and/or the administration of the School and SIMR. All reports will be promptly investigated, and every effort will be made to conduct the investigation in as confidential a manner as possible.

Specifically, a predoctoral researcher with a grievance regarding a final grade or academic progress should refer to the Academic Conduct Policy in the Catalog & Handbook or Policy and Protocol Manual.

A predoctoral researcher with a grievance regarding scientific conduct should consult their advisor. If further resolution is necessary, the predoctoral researcher should follow the Stowers Group of Companies (“SGC”) Scientific Misconduct policy (Policy Number 602R). In addition, the predoctoral researcher should notify the Dean and the Dean for Academic Affairs.

A predoctoral researcher with a grievance regarding equal opportunity, sexual harassment and other forms of harassment, reasonable accommodations, ethics, conflict of interest, fraud, or a similar matter should contact the Dean for Academic Affairs or the Human Resources Officer who will serve as a liaison for the predoctoral researcher as they follow the process outlined in the applicable School and SGC policy.

If the grievance involves the Dean for Academic Affairs or the Human Resources Officer, the predoctoral researcher should consult with the Dean.

After the process in this Policy has been used and completed, a predoctoral researcher not satisfied with the result may present the unresolved issue or appeal in writing to the Dean and to the Academic Progression & Assessment Committee or Supervisory Committee, whichever is applicable. The Dean has 7 business days to present a resolution of the grievance. Final appeals may be made to the President of GSSIMR. Predoctoral researchers who are dissatisfied with the resolution offered by the School may contact the Missouri Department of Higher Education at (573) 751-2361 for information on filing a formal grievance.

Education Records Privacy and Release Policy: Number 930

GSSIMR conforms to standards established and accepted in higher education to protect the privacy of education records and provide rights to predoctoral researchers and their families with regard to access and privacy of academic records. This policy is designed to protect the privacy of education records of predoctoral researchers who are currently or formerly enrolled. Education records of predoctoral researchers who have applied to, but have not attended GSSIMR, are not subject to protections under this policy. For the complete Education Records Policy, please refer to the Policy and Protocol Manual, Policy Number 930.

Transcript Issuance Policy: Number 931

A current or former predoctoral researcher who wishes to obtain a copy of a transcript from the School must complete and sign a Transcript Request Form then submit the form in person, by mail, or as an e-mail attachment to the Graduate School office. Each request form must contain an original signature and/or be submitted as a signed PDF from the predoctoral researcher's e-mail address. All financial obligations to the School must be paid before a transcript will be issued. Three business days should be allowed for processing transcript requests, except at the close of a term when more time may be required.

Transcripts are issued at no charge. Photo identification is required to pick up a transcript from the Graduate School office. Transcripts are mailed by standard U.S. Postal Service first-class delivery. Fees for any special delivery (such as Fed Ex) are charged to a predoctoral researcher's credit card or collected in cash before sending the transcript.

Copies of transcripts from other institutions are not provided.

Withdrawal Policy: Number 932

A predoctoral researcher who wishes to withdraw from GSSIMR must meet with the Dean or their designee then submit a written notice to the Associate Dean for Administration & Registrar. The Associate Dean subsequently takes the necessary steps to end the predoctoral researcher's affiliation with GSSIMR in a timely manner.

If a predoctoral researcher withdraws from GSSIMR, their transcript indicates a grade of "W" for the courses in which they were enrolled at the time of withdrawal. "Withdrawal from Program" and the date of withdrawal is noted on the transcript following the last term's grades. The effective date of the withdrawal is a date indicated in the predoctoral researcher's written notice or, if no date is indicated, it is the date the written notice is received by the Associate Dean for Administration & Registrar.

A predoctoral researcher who withdraws from GSSIMR and later wishes to be reinstated must reapply by following the same admission application process as all applicants.

Transfer and Prior Learning Credit Policy: Number 933

No credit is given for hours earned at another institution. The School does not accept or award credit for prior learning experiences or experiential learning. Due to the structure of the School, courses taken at other institutions, prior learning experiences, and experiential learning are likely to be incompatible with and contrary to the School. The modular structure of the School's program, as opposed to the more common didactic courses at other institutions, immerses predoctoral researchers immediately in a research dynamic that extends through their laboratory rotations and into their thesis research. Moreover, the program is organized around the core disciplines and state-of-the-art capabilities of the Stowers Institute for Medical Research (SIMR) itself and the faculty. To award credit for hours earned at another institution, for prior learning experiences, or for experiential learning would be contrary to the philosophy and structure of the School's program.

Complete Policy List

<i>Policy Name</i>	<i>Policy Number</i>
Academic Conduct	Policy Number 900
Attendance	Policy Number 901
Dress and Personal Protective Equipment	Policy Number 902
Consumption of Alcohol	Policy Number 903
Technology and Software	Policy Number 904
Medical Insurance	Policy Number 905
Grievance	Policy Number 910
Grading	Policy Number 911
Issue Resolution	Policy Number 912
Sexual Harassment	Policy Number 913
Admissions and Recruitment	Policy Number 914
Reasonable Accommodation	Policy Number 915
Academic Probation	Policy Number 916
Laboratory Entry	Policy Number 920
Master's Degree	Policy Number 921
Educational Records Privacy and Release	Policy Number 930
Transcript Issuance	Policy Number 931
Withdrawal	Policy Number 932
Transfer and Prior Learning Credit	Policy Number 933
Credit Hours	Policy Number 934
Financial Policy	Policy Number 935
Faculty Bylaws	Policy Number 940
Faculty Governing Council Bylaws	Policy Number 941
Nondiscrimination	Policy Number 942
Equal Opportunity	Policy Number 943
COVID-19 Related Personal Information	Policy Number 20GS
Care for Individuals Testing Positive for COVID-19 Virus	Policy Number 30GS
COVID-19 Contact Tracing	Policy Number 40GS
Code of Conduct	Policy Number 100GS
Drugs and Alcohol in the Workplace	Policy Number 103GS
Coaching and Counseling	Policy Number 104GS
Solicitation	Policy Number 108GS
Visas	Policy Number 109GS
Pay Practices	Policy Number 115GS
Parental Leave	Policy Number 121GS
Employee Assistance Program	Policy Number 127GS
Use of Computers and Phones	Policy Number 129GS
Children on Premises	Policy Number 130GS
Outside Employment	Policy Number 131GS
Response to Anti-Science Incidents	Policy Number 132GS
Workplace Violence and Weapons	Policy Number 133GS
Equal Opportunity	Policy Number 134GS

Personal Relationships in the Workplace	Policy Number 135GS
Whistleblower and Other Reporting of Misconduct	Policy Number 136GS
Intellectual and Other Property, Confidential Information and Nonsolicitation	Policy Number 201GS
Conflict of Interest	Policy Number 202GS
Fraud	Policy Number 203GS
Gift Acceptance	Policy Number 204GS
Contracts	Policy Number 206GS
Records Retention Management	Policy Number 207GS
Purchasing Procedures	Policy Number 300GS
Acceptable Vendor List	Policy Number 301GS
Vendor Recognition	Policy Number 302GS
Small/Women-Owned/Disadvantaged Business	Policy Number 303GS
Competitive Bids	Policy Number 304GS
Media Relations	Policy Number 400GS
Service Mark Usage	Policy Number 401GS
Social Media	Policy Number 402GS
Business Related Travel and Expenses	Policy Number 500GS
Scientific Publication	Policy Number 600GS
Honoraria	Policy Number 601GS
Scientific Misconduct	Policy Number 602GS
Open Source Software	Policy Number 603GS
Institutional Animal Care and Research	Policy Number 604GS
Recording of Laboratory Data	Policy Number 605GS
Material Transfer Agreements	Policy Number 606GS
Protocols Involving Human Materials	Policy Number 607GS
Additional Ethical Review for Research Involving Human Embryonic Stem Cells	Policy Number 608GS
Distribution of Mouse Strains	Policy Number 609GS
Records Retention and Management of Scientific Data	Policy Number 610GS
Grants	Policy Number 701GS
Use of the Health Club	Policy Number 800GS
Facility Use	Policy Number 801GS
Tobacco-Free Campus	Policy Number 802GS
Use of the Family Lounge	Policy Number 803GS
Vehicle Parking	Policy Number 804GS
Emergency Action Plan	Policy Number 805GS

LEGAL STATUS

The Graduate School of the Stowers Institute for Medical Research is a Missouri corporation organized exclusively for charitable, educational, and scientific purposes within the meaning of Sections 501(c)(3), 170(c)(2)(B), 2055(a)(2), and 2522(a)(2) of the Internal Revenue Code of 1986, as amended, or any corresponding section of any future federal tax code. The business of GSSIMR is managed by, and all of the powers are exercised by, the GSSIMR Board of Directors. The conditions of Board membership are stated in the GSSIMR bylaws.

REVISING THE CATALOG AND HANDBOOK

The Catalog and Handbook for Predoctoral Researchers will be reviewed at periodic intervals of no greater than three years. The Catalog/Handbook was originally approved on November 10, 2010 and was revised on August 17, 2012; August 15, 2013; August 7, 2014; January 26, 2015; August 10, 2015; August 2016; August 2017; August 2018; August 2019; August 2020; January 2021; August 2021; August 2022; August 2023.

FACULTY AND ADMINISTRATION

GSSIMR Administration

Betty M. Drees, M.D., FACP, FACE

President

Matt Gibson, Ph.D.

Dean and Investigator

Sarah Zanders, Ph.D.

Vice Dean and Assistant Investigator

Penny Spence, M.B.A.

Chief Financial Officer

Susan Weigel, B.A.

Associate Dean for Administration & Registrar

Lori Vitale, M.A., Ed. Spec.

Assistant Dean for Administration and Assessment

Jinelle Wint, Ph.D.

Assistant Dean for Academic Affairs

Kim Dziedzic, B.S.

Administrative Coordinator

Karla Terrazas, Ph.D.

Project Manager

Rashmi Raj, Ph.D.

Postdoctoral Affairs Manager

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Associate Investigator, Bazzini Lab

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M.Sc., Cell Biology, Structural Biology and Microbiology, Aix-Marseilles I University; Ph.D., Cell Biology, Structural Biology and Microbiology, Aix-Marseilles I University

Jennifer Gerton, Ph.D. (2002)

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Matthew Gibson, Ph.D. (2006)

Dean and Professor

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B.S., Biology, Yale University; Ph.D., Zoology, University of Washington

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Associate Investigator, Halfmann Lab

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B.S., Biology, Fudan University; M.S., Molecular and Cellular Biology, New York University Medical School; Ph.D., Molecular and Cellular Biology, New York University Medical School

Neşet Özel, Ph.D. (effective September 2023)

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Assistant Investigator, Özel Lab

B.S., Molecular Biology and Genetics, Bilkent University; Ph.D., Neuroscience, University of Texas Southwestern Medical Center

Tatjana Piotrowski, Ph.D. (2011)

Professor

Investigator, Piotrowski Lab

M.S., Developmental Biology, University of Tübingen; Ph.D., Developmental Biology, Max Planck Institute for Developmental Biology

Nicolas Rohner, Ph.D. (2015)

Associate Professor

Associate Investigator, Rohner Lab

M.Sc., Biology, Friedrich-Alexander University, Erlangen; Ph.D., Genetics, Max Planck Institute for Developmental Biology

Alejandro Sanchez Alvarado, Ph.D. (2011)

Professor

Investigator, Sanchez Lab; Investigator, Howard Hughes Medical Institute; Executive Director and Chief Scientific Officer

B.S., Molecular Biology and Chemistry, Vanderbilt University; Ph.D., Pharmacology and Cell Biophysics, University of Cincinnati College of Medicine

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B.Tech, Biotechnology, Vellore Institute of Technology; M.Tech, Biotechnology, Anna University; Ph.D., Biochemistry, State University of New York at Buffalo

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Investigator, Sauka-Spengler Lab

B.A., Theoretical Physics, University of Sarajevo; Ph.D., Interface Physics/Biology Development and Evolution, University of Paris VII

Chris Seidel, Ph.D. (2009)

Research Professor

Genomics Scientist

B.A., Biochemistry and Molecular Biology, University of California, Santa Cruz; Ph.D., Molecular and Cell Biology, University of California, Berkeley

Kausik Si, Ph.D. (2005)

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B.S./M.S., Sciences, University of Calcutta; Ph.D., Molecular Biology, Albert Einstein College of Medicine

Brian Slaughter, Ph.D. (2005)

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B.Sc., Genetics and Biochemistry, University of Sydney; Ph.D., Developmental Biology, Children's Medical Research Institute, University of Sydney

Jay Unruh, Ph.D. (2008)

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Scientific Data, Microscopy Imaging and Big Data

B.S., Biochemistry, John Brown University; Ph.D., Chemistry, University of Kansas

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Jerry Workman, Ph.D. (2003)

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B.S., Biology, Northern Illinois University; Ph.D., Cell and Molecular Biology, University of Michigan

Ron Yu, Ph.D. (2005)

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B.Sc., Solid State Physics and B.Sc., Biological Sciences and Biotechnology, Tsinghua University; Ph.D., M.Ph., M.Sc., Molecular, Cellular and Biophysical Studies, Columbia University

Sarah Zanders, Ph.D. (2015)

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Associate Investigator, Zanders Lab

B.S., Biology, University of Iowa; Ph.D., Genetics and Development, Cornell University

Julia Zeitlinger, Ph.D. (2007)

Professor

Investigator, Zeitlinger Lab

B.Sc., Human Biology, King's College; Ph.D., Molecular Biology, University of London and European Molecular Biology Laboratory

2023-2024 ACADEMIC CALENDAR

August 7-22	Orientation and Pre-Courses ¹
August 14	Fall Term Begins Thesis Laboratory Research Continues ²
August 23	Module I Begins ¹ (2 weeks)
September 4	Labor Day Holiday
September 11	Module II Begins ¹ (2 weeks)
September 25	Module III Begins ¹ (2 weeks)
October 9	Indigenous Peoples' and Columbus Day
October 10	Module IV Begins ¹ (2 weeks)
October 23	Module V Begins ¹ (2 weeks)
November 6	Module VI Begins ¹ (2 weeks)
November 10	Veterans Day
November 20-24	Thanksgiving Holiday ¹
November 23-24	Thanksgiving Holiday ²
November 27	Module VII Begins ¹ (2 weeks)
December 11	Winter Break Begins ¹
December 22, 25 & 26	Christmas Holiday ²
January 1	New Year Holiday
January 2	Spring Term Begins
January 2	Laboratory Rotation I Begins ¹ (8 weeks) Thesis Research Begins (Direct Admission Predoctoral Researchers)
January 15	Martin Luther King Holiday
February 19	Presidents Day Holiday
February 26	Laboratory Rotation II Begins ¹ (8 weeks)
April 22	Laboratory Rotation III Begins ¹ (8 weeks)
May 27	Memorial Day Holiday
June 17	Summer Term Begins
June 19	Juneteenth Holiday
July 4	Independence Day Holiday
August 9	Academic Year Ends

¹ First-Year Predoctoral Researchers

² Second and Subsequent-Year Predoctoral Researchers