

GRADUATE FACULTY HANDBOOK

School of Biomedical Sciences



Graduate Faculty Handbook for the School of Biomedical Sciences

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Background

The School of Biomedical Sciences houses a graduate program dedicated to training the next generation of researchers and teachers in all areas of the basic sciences related to biomedicine. The more than 110 graduate faculty of the School populate five program areas: Biological Anthropology (BANT), Cell and Molecular Biology (CMBI), Neuroscience (NEUR), Pharmacology (PHRM) and Physiology (PSII). These faculty have primary appointments in various departments at Kent State University, the Northeastern Ohio Universities Colleges of Medicine and Pharmacy, the Lerner Research Institute of the Cleveland Clinic, the University of Akron and Youngstown State University. Faculty are responsible for guiding students through the academic and research aspects of their graduate experiences. In addition, they are expected to be fully active in their students' career development. The following faculty handbook is designed to clarify these expectations, as well as the related procedures and processes.

Graduate Faculty Status

Biomedical scientists interested in becoming graduate faculty in the School must submit a curriculum vitae and a letter of interest. The CV is distributed to the faculty in the program area(s) of interest. The faculty in that program vote on the appropriateness of the request for admission into that faculty and designate a level of assignment. A simple majority allows for admission into that program area. Graduate faculty must fully engage in the development of our students, in order to maintain faculty status. This includes serving on dissertation and thesis committees, teaching at the graduate level and providing support and advice to our students.

According to Kent State University guidelines, a graduate faculty member may be accorded a regular or temporary appointment. Regular appointments may be at the Associate or Full Membership level. Each level has different requirements and privileges. An Associate Graduate Faculty Member may be approved to direct theses, co-direct dissertations and serve on thesis and dissertation committees. A Full Graduate Faculty Member may be approved to direct theses and dissertations, as well as serve on committees. Temporary Graduate Faculty Members may be authorized to serve on thesis or dissertation committees, or act as co-advisors of masters or doctoral students. Temporary appointments terminate upon completion of the assigned duties. Graduate Faculty at any level may be approved to teach graduate level courses.

The criteria to obtain Associate Graduate Faculty Membership are:

1. Possession of the terminal degree (normally the Ph.D. or M.D. degree) in one of the disciplinary areas of the Biomedical Sciences.

2. Maintenance of an active research program during a five-year review period as evidenced by: 1) publication of no fewer than two manuscripts in refereed journals, or equivalent scholarly publications and 2) submission of a minimum of one proposal for extramural funding.
3. Teaching at the graduate level.
4. Experience in direction of graduate theses or service on thesis and/or dissertation committees.

The criteria to obtain Full Graduate Faculty Membership are:

1. Possession of the terminal degree (normally the Ph.D. or M.D. degree) in one of the disciplinary areas of the Biomedical Sciences.
2. Maintenance of an active research program during a five-year review period as evidenced by 1) publication of no fewer than four manuscripts in refereed journals, or equivalent scholarly publications and 2) funding of a reviewed grant proposal, or submission of proposals of sufficient magnitude to support doctoral students.
3. Teaching at the graduate level.
4. Experience in direction of graduate theses and/or dissertations, or service on thesis and/or dissertation committees.

Note: New faculty members with strong research records may request criteria in items 3 and 4 be waived for appointment at either the Associate or Full membership levels.

The criteria to obtain Temporary Graduate Faculty Membership are academic and professional credentials at least equivalent to those for regular graduate faculty membership. Permission is granted by the Director on an *ad hoc* basis and is limited to responsibilities specified in the temporary appointment. This category includes faculty who have unique capabilities that will benefit a specific graduate student and program.

None of the above appointments are permanent. The qualifications of all appointees will be evaluated biannually for the previous five-year period by a Review Committee consisting of the Director, Associate Director and the Executive Committee of the School of Biomedical Sciences. Individuals whose qualifications remain consistent with their current appointment will be reappointed at that level. Associate Graduate Faculty whose credentials qualify them for Full Graduate Faculty status will be recommended for reappointment at that level. Full Graduate Faculty members who no longer meet the criteria for membership at this level will be provided a one year extension to fulfill the criteria. Those failing to meet the criteria for this level after the one year extension will be reappointed at the Associate Graduate Faculty level. Associate

Graduate Faculty may request to be considered for Full membership at any time, if she/he has fulfilled the requirements stated for that level. Recommendations will be forwarded to the Dean of the College.

Admissions

Admission procedures are designed to maximize the quality and quantity of our students. These students must apply to one of the five program areas. An admissions committee, composed of the Director, Associate Director and Chairs of the Program Areas, evaluates the applications and makes decisions on admission and funding. The committee attempts to regulate the number of students admitted into each of the five Program Areas, in order to prevent an imbalance in the distribution of students to faculty throughout the School. However, it is recognized that some imbalances may occur in the short term, based on the numbers and quality of the applicants.

The number of students admitted in a given year is limited by finances. The number of students accepted to the KSU and NEOMED campuses will depend on: 1) the number of graduations in the previous year, in order to stay within budgets and 2) the amount of funds available from grants and other sources, as indicated by faculty on those campuses. Similar financial restrictions will apply to the number of students admitted into the CCF/KSU doctoral program. That is, CCF faculty must have grant funds sufficient for stipend support for each admitted student. The same is true for students choosing an advisor at any of the other consortia institutions. Students who have applied to the School, with the intention of being advised by a faculty member who has promised support, will be obliged to commit to that advisor. Should the match be found to be inappropriate, other funding will be sought, but cannot be guaranteed.

Advisor Selection

Most commonly, students are admitted into the program without prior selection of an advisor. In these cases, they select three potential advisors from a list of BMS faculty willing and able to incorporate new students into their research programs. Upon agreement with the faculty members, and the approval of the Director, the students arrange three, seven week lab rotations to take place in the first year. The first rotation (R1) should initiate approximately half way through the first semester. The timing is designed to allow the students the opportunity to choose advisors and obtain approvals. The remaining rotations (R2 and R3) will occur during the second semester and should be completed well before finals week.

Students are matched with appropriate advisors at the end of their first academic year, upon completion of the rotations. To do this, the students complete an evaluation of the experience in each laboratory and submit those to the Director. They also rank order their potential advisors, to facilitate the matching process. The Admissions

Committee will meet when all information has been collected and match the students with a best-fit advisor, based on the faculty member's experience, activity level and funding available on each campus. Again, fair distribution of the students among the various faculty will be considered.

Some students enter our program with a specific advisor in mind. These students will be evaluated for admission using the same criteria, but will only be required to do one laboratory experience (R1) under the guidance of the preselected advisor, if they are admitted. If a student has been recruited and promised funding from a grant, or other non-School source, that student is expected to remain with that advisor and need not complete lab rotations.

Advising

Students entering the program will be advised by the Director and Associate Director on course selections appropriate for their program area, as well as the procedures they will follow for the lab rotations. Progress of these students will also be monitored by the Director and Associate Director, to insure they are doing well in course work and teaching. Students who do not maintain a GPA of ≥ 3.0 , or are doing poorly in fulfilling work load requirements (e.g. teaching) will be warned that dismissal from the program will occur, if improvements are not made.

Advising each student will become the responsibility of the respective faculty advisor, when one has been assigned. The advisor will 1) monitor the student's progress in academic and scholarly pursuits and inform the Director, if a student is not fulfilling obligations, 2) advise on course selection, based on the requirements for each program area, which can be identified on the appropriate web pages, 3) play a significant role in the student's career development, which includes informing the student on various career paths, providing substantial input into job placement, assuring the student masters the art of scientific writing in the form of manuscripts, abstracts and grants, providing the means for the student to present at a scientific conference and insuring that the overall guidance is compatible with the development of a young scientist's career, 4) provide the environment to allow the student to earn the doctorate within five years, since financial support cannot be provided past 5 ½ years, unless there are mitigating circumstances and 5) insure the student is prepared to succeed at all aspects of the graduate experience.

The advisor is responsible for insuring the student completes landmark objectives in a timely fashion. The Program of Study should be completed and provided to the Guidance Committee before the end of the third semester. The Candidacy Exam should be completed by the end of the second year. The Prospectus should be written and defended within six months to a year of passing candidacy, but the timing will vary

based on the accumulation of research data. Finally, the written Dissertation and its defense should be finished by the end of the fifth year, but certainly no later than 5 ½ years from admission. The procedures related to these landmark objectives are described below.

Program of Study:

The Program of Study is a two page form available for downloading from our web site. The information submitted includes the courses the student has taken, or plans to take, at the graduate level. It also includes the make-up of the student's Guidance Committee and the organization and timing of the Candidacy Exam. This form should be completed during the third academic semester, with input from the student's Guidance Committee. This committee consists of the student's advisor and two other graduate faculty from that program area. For example, a student in the Neuroscience program area will need to have an advisor in that area, as well as two other faculty members with graduate appointments in that area.

The Program of Study is used to 1) determine the adequacy of the student's coursework and 2) establish the protocols for the student's Candidacy Exam. The Guidance Committee must agree on the student's course work and the arrangement of the Candidacy Exam. The procedures for this exam are described below. Once the Program of Study is completed and signed, it is delivered to the School office for the approval of the Director and placement in the student's file.

Candidacy Exam:

The Candidacy Exam can be completed in one of two fashions:

Option one:

The written portion of the exam will consist of a grant proposal written by the student, with no input from faculty members. The format of the proposal will be the NIH NRSA fellowship or other common fellowship format. If the NIH format is used, it will consist of three parts, the Specific Aims (1 page max), the Research Strategy (6 pages max, includes Significance and Background and Approach), and Literature Cited.

The topic of the proposal may NOT be the student's area of research, but may be in a related field. For example, if the student were studying the role of serotonin receptors in regulating feeding behavior, they could write their proposal on some other aspect of serotonin function, or some other aspect of feeding behavior regulation.

The student and the committee will meet 6-8 weeks prior to the due date of the candidacy exam to have a preliminary discussion of potential topics. The student will then look into these topics and report back to the committee (can be via e-mail) on the

topic they have selected. The committee members must then approve the topic. **The student should have approximately 5 weeks to write the proposal.**

The committee will then evaluate the proposal to judge the student's knowledge of the background material and the logic of the scientific approach. If they are satisfied, the exam will proceed to the oral portion of the exam, in which the committee members can ask questions about the proposal or background material to ascertain the student's depth of knowledge on the topic, and ability to justify his/her experimental approaches.

If the written proposal is judged to be unacceptable, then the student may be given a second chance, at the discretion of the advisory committee. Students will be assigned a grade of either Pass, Fail, or Conditional Pass. Conditional Pass should be used infrequently and only in special circumstances.

Option two:

The written portion of is divided into three parts: the Major, Minor I and Minor II. The questions for each portion are conceived by the Guidance Committee member assigned that section, as shown on the Program of Study form. The committee members suggest readings for the student related to each section. The readings for the Major should provide information more general to the Program Area. For example, a student in Cellular and Molecular Biology might be assigned chapters from text books previously used in graduate courses. Readings for Minor I should be more related to the student's future area of research, while those for Minor II should be closely aligned with the student's research. This section is normally handled by the student's advisor. The written portion must be taken within a one week period. Testing for the Major should be tailored to be completed within eight hours, while the questions for Minor I and Minor II should require approximately four hours each to complete. An example of the labeling of the sections might be: Major – Neuroscience, Minor I – Neurochemistry and Minor II – Neurodegeneration. **The student should be provided approximately 5 weeks to prepare for the written portion of the exam.**

The written portion of the exam can be graded as pass, fail or conditional pass. With a conditional pass, the committee assigns further conditions that must be met by the student, in order to pass the exam. For example, they may provide more material and follow-up questions, or they may require more study by the student, followed by questioning similar to the original exam. **The student should be provided approximately 3 weeks to prepare for additional examination.** In the case of a failing grade, the committee members may allow the student to retake the exam, or they may recommend the student not be allowed to pursue a doctoral degree.

The oral portion of the candidacy exam should be held as soon as possible following successful completion of the written portion. Most commonly, committee members ask for more detailed answers to questions previously posed on the written part. The oral portion may be done by teleconferencing, or conference calls, if the distance between committee members is a problem. Still, an in-person oral defense is preferred. Should the student fail this portion, another opportunity to succeed may be offered, or they may be failed for the Candidacy Exam, which leads to dismissal from the doctoral program.

Prospectus:

The Prospectus should be prepared similar to an NIH grant, excluding budget and facilities pages. It should include background, specific aims and hypotheses, methods and procedures, preliminary data, potential results and references. Typically, the student is expected to be roughly half way done with collecting data and within one year of passing the Candidacy Exam. It is important not to wait too long to do this, because the College will not allow the Prospectus and the Dissertation to be submitted in the same semester and, more importantly, the Committee may suggest further experiments, which could cause a delay in graduating if added later in the research plan.

The student's Guidance Committee is expanded at the time of the Prospectus, to include an outside member. This person must have graduate faculty standing in a program area other than that of the student's. For example, the added member may come from Neuroscience, if the student is in the Pharmacology program area. Also, an accomplished scientist from outside the School's faculty may be appointed Temporary Graduate Faculty status, in order to act as the outside member of the committee. This committee evaluates the document. The student provides an oral defense of the planned research, after the committee has found the document to be passable. The student must make agreed upon changes to the document and the research plan, before that student can pass this challenge. The approved Prospectus acts as a contract that describes the research to be completed by the student. It cannot be amended or appended without the approval of a majority of the Committee and the Director of the School.

Dissertation:

The Dissertation should be written and defended by the fifth year in the program. At this point, the College assigns a Graduate School Representative to form the Dissertation Committee. This person is involved in all aspects of the defense, including voting on the outcome. The completed Dissertation is provided to all committee members. After ten days, the members vote on the defensibility of the document. If all

agree to proceed, the oral defense can be made no sooner than ten days later. So, committee members must have a minimum of 20 calendar days from the time they receive the Dissertation until its defense. Should a majority of the committee find the Dissertation to be inadequate, the student must comply with suggested changes. Once the committee is satisfied with the document, the defense may take place.

A Moderator is added to the Dissertation Defense Committee, in order to maintain the decorum and timing of the defense. The Moderator may be selected by the advisor, or the Graduate School Representative may assume this role. While the procedures involved in the defense may vary at the discretion of the examining committee, the defense normally commences with a short presentation by the candidate. The committee members then pose a round of questions, with each member limited to ten minutes. The second round is most commonly limited to five minutes of questioning from each member. Questions from the audience are encouraged and may take place before or after the Committee's questions, depending on the sequence agreed to prior to commencing the defense. Ultimately, the student may pass, fail with an opportunity to make another attempt at a future date, or fail with a recommendation for dismissal from the program. The outcome is based on a majority of votes.

Stipends, Tuition and Health Care

As of Fall 2018, stipends for 12-month appointments are: \$23,000 for pre-candidacy doctoral students, \$24,000 for post-candidacy doctoral students, and \$23,000 for master's students. Students are expected to commit to the 12 month contracts through course work, service and research throughout the year. Students must maintain full time status, in order to receive a stipend. This requires registering for at least 8 credits during the academic year semesters and 6 credits during the summer session. Tuition is currently \$5,768 for a load of 11 or more credits and \$525/credit hour when less than 11 credits are taken. Tuition for Dissertation I is \$3,030, while the cost of Dissertation II and Thesis II is \$167. Health insurance is currently subsidized up to \$1,204/year by the School, while the student pays \$516/year.

Student Research

Faculty advisors must have the funds and facilities necessary to support student research. Of course the preferred source is an extramural grant. However, financial support for research can come from other sources, such as departmental funds or start-up monies. Regardless of the source, it is the advisor's responsibility to provide the financial resources necessary to carry out the dissertation research. The advisor must also insure each student has the appropriate facilities available to complete the research.

Students are expected to present their research at scientific conferences. This is an important facet of their career development. Faculty advisors are expected to encourage this and provide needed support. Also, each BMS student is required to present a seminar on their doctoral research prior to graduation. In addition, advisors must train students in scientific writing and insure they submit articles for publication in the best possible journals. Although there is no requirement that each student publish a certain number of articles to fulfill graduation requirements, doctoral students are expected to publish at least two manuscripts from their dissertation research.

Currently, there is no requirement that students submit grant proposals. However, it is the responsibility of the advisors to insure they gain experience in the grant writing process. It would be best if advisors facilitate fellowship proposals, for example to the NIH or the AHA. When submissions for fellowships are inappropriate, advisors should involve students in preparing their own grants. Also, advisors must insure the Prospectus follows a grant format, in order to provide the students with experience in the grant writing process.

Grade Submission

Grade submission is an important responsibility of BMS faculty who teach courses and/or advise graduate students. Grades which are Not Reported (NR) may lead to the loss of scholarship or loan monies to students, as well as the loss of revenues to the School. Therefore, it is imperative that all grades be submitted during the grading sessions that occur at the end of each semester. All faculty are notified when grade submission is available online. Those that need to submit grades (e.g. Dissertation II, Research, Medical Physiology) must establish the link to the Registrar through Flashline. <https://www.kent.edu/registrar/faculty-grades-processing>

Academic Complaints

Difficulties may arise between advisor and student. There are a number of reasons this may happen, but the outcomes are most commonly that the student switches advisor, or the advisor drops the student. Both of these changes are allowed. Ultimately, the goals are to provide the student with an environment conducive to learning and the advisor with a student who enhances the research activities in the laboratory. Prior to switching advisors, the student must discuss the situation with the Director or Associate Director, who will provide council and facilitate the selection of a new advisor, if the problem cannot be resolved. If a switch is made, the past advisor must not impede the progress of that student in any way. Similarly, an advisor who intends to remove a student from the laboratory should first discuss this with the Director or Associate Director, in order to explore options and ascertain that such a move is warranted.

Complaints of any nature registered by either the student or the advisor should be first expressed to the Director, in hopes that a mutually agreeable solution can be devised. Should this approach not lead to a resolution, the problem will be described to the Executive Committee, who will attempt to rectify the problem. Finally, the Dean of the College of Arts and Sciences will make a final judgment on the issue, if an agreement between the disputing parties cannot be reached through the earlier interactions.

Cheating and plagiarism are not tolerated. The University's guidelines on these issues can be found at 3-01.8 of the University's Policy Register, which can be accessed through Flashline. All other academic complaints should be dealt with as described: <http://catalog.kent.edu/academic-policies/student-conduct/>

School Administration and Committees

The School of Biomedical Sciences is headed by a Director, who must be tenured faculty at Kent State. The Director chairs the Executive Committee meetings, contacts prospective applicants, is a member of the Admissions Committee, administers the budgets, monitors student progress, advises students on course work and lab rotations, manages the web site and library holdings, resolves academic complaints, initiates recruitment programs, liaisons with representatives of the other consortium institutions, arranges service assignments for students on the Kent campus and reports to the Dean of the College. The Associate Director must have a primary faculty appointment at NEOMED. The Associate Director is involved in admissions, chairs the graduate coordinating committee at the medical school, administers their budget, monitors student progress and oversees service assignments for students on that campus.

The Executive Committee consists of members from various departments at Kent State and NEOMED, with some ad hoc positions being filled by faculty from other consortium institutions. Each of the five program areas is represented on the Committee by a program chairperson. Also, there are five at large positions, plus two representatives of the Cleveland Clinic. It is required in the original agreement that the Committee include a majority of representatives from Kent State. The members of the Executive Committee bring issues for discussion and resolution, populate the Admissions Committee, initiate and evaluate curricular changes within the various program areas and provide advice to the director and associate director. Given the scope and diversity of the programs in the School, this type of administrative architecture provides the greatest breadth of input and communication, as well as the type of flexibility needed to respond to the changing needs of the students and faculty across institutions.

The Admissions Committee is currently composed of the Director, Associate Director and the Program Chairs. It is planned to exchange other program faculty for the Chairs over time. This Committee makes decisions on admissions and funding for new students, as described above.

Funding Sources

There are multiple funding sources for our graduate students. The State of Ohio provides funds based on Full Time Equivalents (FTEs) at three levels and these funding levels will vary from year to year and include Doctoral Allocation is one component of the State Share of Instruction (SSI). The State also provides funds for master's level enrollments through the SSI formula. The SSIs vary with instructional level either STEM7 or STEM8. Note that these are internally calculated rates and that these funding sources are limited to the first 34 credits taken by our students. In addition, the Doctoral Allocation is limited to 35-174 credits. After that, no State funds of any kind are received for that particular student.

The funding formula for doctoral programs has been revised such that the amounts provided to each State university will be influenced by productivity factors. The goal is to shift away from a set shares approach to one that is based on the quality of the individual programs. Currently, the primary indicators of quality include: research grant activity of the graduate faculty, the percent of admitted students who complete the degree program and their time to completion. Given this information, as well as the credit limits for funding shown above, it is important for our faculty to move students through to completion as quickly as possible. Of course this must be done without sacrificing educational quality.

A goal of our program is to support as many students as possible on extramural research grants, as this is an indication of a vibrant, effective doctoral program in the biomedical sciences. To that end, faculty are encouraged to include budget lines for graduate students in grant proposals, when appropriate. Also, faculty should be aware that it is unlikely the School will use State funds to support more than one student in any given laboratory. This encourages faculty to identify alternate means of support and it insures an equitable distribution of students among our more than 110 graduate faculty members.

Stipends for students with advisors at the Cleveland Clinic must be from research grants. While tuition for these students is normally provided by the School, the use of grant monies to cover tuition is encouraged and appreciated.

There are alternative sources of support. For example, students may be funded through fellowships. In particular, domestic students are encouraged to apply for pre-doctoral fellowships and these applications can be used as the student's Prospectus. In

addition, it is common for new graduate faculty to use start-up funds to support students. Regardless of the source, outside funding for graduate students is encouraged, since it allows the School to admit more students, which enhances the research output of School faculty.

To summarize the financial reasons for moving students quickly through the program:

1. SSIs for MS level courses are limited to the first 34 credits;
2. Doctoral allocations of the SSIs are limited to 35 – 174 credits;
3. Tuitions for post-candidacy students are: DI = \$3,030 and DII \$167;
4. Students earn larger stipends after passing the Candidacy Exam and Prospectus;
5. The State will use time to completion to adjust subsidies.

In sum, the more efficiently we graduate students, the more students we can educate.