

INTEGRATED PHARMACEUTICAL MEDICINE

COLLEGE OF GRADUATE STUDIES

IPM STUDENT HANDBOOK

2016-2017

Contents

Faculty and Staff	3
General Policies and Procedures	7
Selecting an Advisor and Advisory Committee	7
Plan of Study	7
Academic Good Standing	8
Transfer Credit	9
Leave of Absence.....	10
Conferral of Degree.....	10
M.S. Program.....	11
Coursework	11
Time Frame and Funding.....	11
Thesis.....	12
Ph.D. Program	14
Coursework	14
Time Frame and Funding.....	14
Candidacy Exam	14
Prospectus Defense.....	16
Dissertation	17
MS to PhD.....	19
Pathway from MS to PhD in the IPM Program	19
Pharm.D. / Ph.D. Program	19
Coursework and Time Frame	19
M.D. / Ph.D. Program	20
Coursework and Time Frame	20
Partner Institutions	20
Recommended Courses.....	21
College of Graduate Studies	21

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General Policies and Procedures

Note: This document serves as a general guideline for Integrated Pharmaceutical Medicine (IPM) students. However, it does not and cannot supersede the rules and regulations established by the College of Graduate Studies.

Please read these guidelines carefully. If you have any questions, please contact Dr. Denise Inman, Program Director at dinman@neomed.edu or Madison Ivan, Program Coordinator at mivan@neomed.edu.

Selecting an Advisor and Advisory Committee

New Integrated Pharmaceutical Medicine students receive their initial advising from the Program Director, Dr. Denise Inman. However, by the end of the first semester for Master's candidates and by the end of the first year of study for PhD candidates, students must submit a written request to the Program Director asking to be assigned to a major advisor. The major advisor's written agreement to accept the student in their lab should accompany the written request to the Program Director, along with a brief overview of the proposed project being considered. Once the request has been approved, the advisor will help the student to create a plan of study suited to their research interests as well as serve as the chair of the student's thesis and/or dissertation committee.

Upon approval of the lab assignment, the major advisor and the student should select a team of committee members. Two (2) Graduate Faculty members should be selected for Master's candidates and, initially, two (2) Graduate Faculty should be selected for PhD candidates. PhD students will then add one (1) Graduate Faculty member for their candidacy exam and then one (1) Graduate Faculty member for the dissertation prospectus for a total of five (5) members including the primary advisor. In addition, one (1) of the members of the advisory committee for the PhD candidate must come from a department outside of the major advisor's primary department.

Plan of Study

All students are required to work in conjunction with their advisory committee to complete a Plan of Study. The Plan of Study will include didactic coursework, research, and thesis/dissertation credit hours.

Rotations

All students are encouraged to participate in lab rotations in order to find their research area of interest. Students generally complete anywhere from 1-3 rotations before picking their lab; however some students do not complete "formal" rotations because they picked their lab upon acceptance into the program. Rotations are considered completed once a student has officially picked their lab and corresponding advisor. The lab should be where the student intends to complete their thesis/dissertation research.

MS Students

Coursework: MS students are required to complete a total of 45 credit hours: 25 hours of didactic coursework, 10 hours of research, and 10 hours of thesis hours. The thesis and research credit hours will culminate in a written thesis and thesis defense.

Thesis: The capstone experience for MS students is the completion of a written thesis and successful thesis defense.

PhD students

Coursework: PhD students are required to complete a total of 90 credit hours: 45 hours of didactic coursework, 30 hours of research, and 15 hours of dissertation work. The research and dissertation credit hours will culminate in a written dissertation and dissertation defense.

In conjunction with the above requirements, PhD students are also expected to complete the following:

Check-In: All PhD students are required to complete a check-in with their advisory committee every six (6) months to ensure they are following their program of study and are on-track to reach program milestones (e.g. candidacy exam, dissertation prospectus, and dissertation). Check-ins begin following the completion of core coursework. As part of the check-in process, PhD students will also complete an Individual Development Plan (IDP) with their advisor once a year.

Candidacy Exam: PhD students, once they have completed their didactic coursework, will take a candidacy exam which serves the purpose of evaluating students' basic knowledge in the field, ability to organize and defend a hypothesis-based research project, and ability to think and integrate ideas and concepts. Consult the PhD Program section for additional information about the candidacy exam.

Dissertation Prospectus: Within one year of passing the candidacy exam, PhD students will defend their dissertation prospectus. The prospectus will be based on the research the student has undertaken in the lab of their advisor. Consult the PhD Program section for additional information about the prospectus.

Dissertation: Following the blueprint presented in the dissertation prospectus, PhD students will complete a dissertation as their capstone experience. Consult the PhD Program section for additional information about the dissertation.

Academic Good Standing & Conduct

In order to remain in academic good standing within the Integrated Pharmaceutical Medicine Program, both PhD and MS students are expected to perform at a level of at least a B grade. Students who do not maintain this performance level may be subject to academic intervention and/or probation.

Students must also be progressing at a satisfactory manner relative to the requirements of the Integrated Pharmaceutical Medicine Program and be in full compliance with the University Code of Professional Conduct (as can be found here:

<http://www.neomed.edu/campuslife/studentaffairs/Student%20Conduct%20and%20Professionalism/student-honor-code>).

If an IPM student is found in violation of the honor code, his or her case will be heard by the IPM Advisory Committee with all deliberate speed. The party who determined the violation or the Program Director, having been briefed on the honor code transgression, will present the facts of the case. The student found in violation will have an opportunity to add any additional facts. At that time, the Advisory Committee will determine the appropriate sanction, which may include, but is not limited to: course failure, academic probation, or dismissal from the program. Academic probation violates a students' good standing, which may jeopardize his or her teaching assistantship. Dismissal will nullify any existing teaching assistant contract. The decision of the Advisory Committee and subsequent disciplinary actions can be appealed in

writing to the Dean of the College of Graduate Studies. The decision of the Dean is final and may not be appealed again.

Transfer Credit

If graduate credit earned at another accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's advisor and program director, and when approved by the dean of the College of Graduate Studies. Such transfer of credit cannot exceed six semester hours for programs requiring fewer than 40 semester credits. A maximum of 9 semester credits may be accepted in transfer for programs requiring 45 or more semester credits, pending approval. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Credit awarded by NEOMED for course work earned at another accredited university is recorded on the transcript with a "T" grade, which has no impact on the student's grade point average. All requests for transfer credit, with accompanying official transcripts, must be submitted to the program director no later than a full semester prior to the student's expected graduation date.

Dual Degree

Students enrolled in a NEOMED professional program (medicine or pharmacy) who elect to enroll in the College of Graduate Studies in order to attain a PhD degree in the Integrated Pharmaceutical Medicine (IPM) program are permitted to transfer credits earned in these basic science courses to their graduate program curriculum: Infection & Immunity, Molecules to Cells, Physiological Basis of Medicine, Medical Neuroscience or Foundations in Neuroscience, and either Human Development & Structure or Human Anatomy & Physiology for Pharmacy. This policy reflects the recognition that these courses form a strong foundation for a research degree to which will be added required courses for the IPM curriculum as well as electives that will reflect the student's area of specialization.

Exceptions to this policy include any coursework earned in a professional program that has been used in the pursuit of a baccalaureate degree. Any student who has obtained a baccalaureate degree through the transfer of MD or PharmD coursework would be ineligible to use those same MD or PharmD coursework credits toward the PhD. This includes students who entered the MD or PharmD program from a consortial university and later obtained a baccalaureate degree through an articulation agreement between NEOMED and the consortial university. For example, the Articulation Agreement between NEOMED and Kent State University transfers credit for the Physiological Basis of Medicine; Medical Neuroscience; and Infection & Immunity courses toward a KSU Bachelors of Science degree in Chemistry with a Biochemistry concentration. An MD or PharmD student with such a BS would only be able to transfer Molecules to Cells and Human Development & Structure or Human Anatomy & Physiology for Pharmacy course credits to the PhD.

A minimum of 70 percent of the credits (of the 90 required coursework and research credits) counted toward the credit hour requirement for the PhD degree must be unique to that degree and cannot be used for double credit. All other respective degree requirements must be completed independently.

Master's Degree en route to PhD Degree Transfer Credit

A student who has completed a Master's degree in the IPM program can apply to the PhD program. If admitted, the student may use course credit (though not research credit) earned in the pursuit of the Master's degree toward the PhD.

Leave of Absence

Students may request a leave of absence for academic, medical, enrichment, or personal hardship reasons. Students requesting a leave of absence should request a meeting with the Program Director to discuss.

The Leave of Absence form can be found here:

http://www.neomed.edu/campuslife/studentaffairs/forms-1/loa-request-form_student.pdf

Conferral of Degree

Degrees are awarded by the Board of Trustees of the Northeast Ohio Medical University upon approval by the deans of the respective colleges. All students intending to graduate in a given academic year must complete an application for graduation by December 31 of the academic year in which they expect to graduate.

M.S. Program

Coursework

Master's students are required to complete 25 hours of didactic coursework and 20 hours of research and thesis credit for a total of 45 credit hours.

There are 4 required courses: Transitions to Pharmaceutical Medicine, Pharmaceutical Medicine Seminar, Statistics/Biostatistics, and Responsible Conduct of Research. Remaining hours of didactic coursework are electives determined by the student and advisor. Students are expected to enroll in research credits during the summer.

Students will develop a program of study in conjunction with their advisor that is tailored to the student's research goals. Students are also able to take graduate courses offered by Kent State University, the University of Akron, Cleveland State University, and Youngstown State University with the approval of their advisor and the completion of a Cross-Registration form (found here: <http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/procedures-and-forms>).

Time Frame and Funding

Students enrolled full-time in the Master's program should plan to complete all work for the program in two (2) years. In compliance with the College of Graduate Studies program length policy, the program must be completed within six (6) years. (Policy found here:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/policies-and-procedures/academic-program-length.pdf>)

Students typically receive funding for two (2) years. During student completion of the didactic coursework or the first year of study (whichever occurs first), funding will come from the IPM program budget. Once the didactic coursework is complete and students are in their research lab, half of any stipend the student is receiving will be funded by the advisor.

Any funding past two (2) years will be determined at the discretion of the Program Director, the IPM Advisory Committee, and the student's major advisor.

Teaching Assistantships

Master's students can serve as teaching assistants and receive a tuition scholarship. A full-time graduate teaching assistant is expected to devote 20 hours per week (or equivalent assignment; approximately 300 hours per semester) in service and to enroll in a minimum of nine credit hours per semester. The tuition scholarship for an appointee should cover a full-time student's enrollment. The 20 hours of service can include a mixture of committee service and teaching assistantship. Consult the Teaching Assistant policy for more information.

Thesis

The capstone of the Master's program is the completion of a thesis. This project requires students to develop and test a hypothesis and then prepare a publishable quality manuscript.

Advisor and Committee Selection

The student's selected program advisor will serve as the chair of his or her thesis committee. The student will then be responsible for selecting two additional faculty members to serve on the thesis committee. At least one (1) committee member should be selected from the Pharmaceutical Sciences Department Graduate Faculty and at least (1) committee member should be from the College of Medicine Graduate Faculty (For a list of Graduate Studies faculty, see page 3).

Thesis Defense

The thesis defense is the venue for a student to display his or her research achievement. It is also an opportunity for the faculty to decide whether the student has been adequately prepared for a future as a Master's degree level scientist. The defense is split into two parts: the public talk and the committee-led oral defense.

The Master's degree candidate will prepare and deliver a 30-minute talk for the public. The public is allowed to ask questions after the talk, though this Q &A is not meant to last more than 10 minutes.

After a short break (5 minutes), the student and the student's committee will reconvene in the seminar venue so that the committee-led oral defense can begin. The oral defense will be closed to the student and the committee. There will be two rounds of questions from each committee member. Each committee member has 10 to 15 minutes to question the student about the student's research or the thesis document. Each round will take about 30 minutes since the committee has three members (the advisor and two other members).

At the completion of the two rounds of questions, the student leaves the room while the committee deliberates. The committee decides whether the student has successfully defended the dissertation. If yes, each committee member signs the thesis signature form. If no, the committee decides *whether* and *how* the student may stand again to defend the thesis.

The signature form can be found here:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/ipm-thesis-signature-page.pdf>.

The guidelines for how to format the thesis can be found here:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/guidelines-for-formatting-theses-and-dissertations-ipm.pdf>

Timeline

The defense date is set when the advisor has determined the student has completed the work in his/her thesis plan. The advisor and student should come to a mutually agreeable timeframe for the defense. The student will confirm with each of his/her committee members that they will be available for the defense on the day and at the time in question.

Finding a mutually agreeable date and time for the defense by advisor and student should ensure that there is only a successful outcome for the defense. If there is a chance of defense failure, it is too early to set a defense date.

Ph.D. Program

Coursework

The PhD degree in Integrated Pharmaceutical Medicine requires a total of 90 credit hours. All doctoral students in the program will be required to complete 45 hours of didactic study, 30 hours of research and 15 hours of dissertation work, culminating in a written dissertation and dissertation defense.

The core courses are as follows: Transitions to Pharmaceutical Medicine, Pharmaceutical Medicine Seminar, Statistics/Biostatistics, and Responsible Conduct of Research. The remaining hours of didactic coursework are electives determined by the student and advisor. Students are expected to take research credits during the summer.

Time Frame and Funding

Students enrolled full-time in the Doctoral program should plan to complete all work for the program in five (5) years. In compliance with the College of Graduate Studies program length policy, the program must be completed within eight (8) years. (Policy found here:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/policies-and-procedures/academic-program-length.pdf>)

Students typically receive funding for five (5) years. During student completion of the didactic coursework, funding will come from the IPM program budget. Once the didactic coursework is complete or two years of study (whichever occurs first) and students are in their research lab, half of any stipend the student is receiving will be funded by the advisor.

Any funding past five (5) years will be determined at the discretion of the Program Director, the IPM Advisory Committee, and the student's advisor.

Teaching Assistantships

Master's students can serve as teaching assistants and receive a tuition scholarship. A full-time graduate teaching assistant is expected to devote 20 hours per week (or equivalent assignment; approximately 300 hours per semester) in service and to enroll in a minimum of nine credit hours per semester. The tuition scholarship for an appointee should cover a full-time student's enrollment. The 20 hours of service can include a mixture of committee service and teaching assistantship. Consult the Teaching Assistant policy for more information.

Candidacy Exam

All doctoral students will be administered a qualifying/candidacy exam upon completion of the didactic coursework. The candidacy exam is an opportunity to evaluate doctoral students' basic knowledge in the field, ability to organize and defend a hypothesis-based research project, and ability to integrate ideas and concepts.

The IPM program uses a grant proposal format as the basis for the candidacy evaluation. The grant proposal should be on a topic that is relevant to the student's field of research. The proposal should be based on clear hypotheses and should be developed based on real data. That is, the assumptions and hypotheses should be based on the student's own data and/or data obtained from the literature with proper citation.

Exam Process

The exam will be administered by the advisory committee. A moderator will be appointed to administer the exam and will not be involved directly in the questioning. Approximately eight (8) weeks prior to the scheduling of the candidacy exam, the student should meet with the advisory committee to discuss a general outline of the grant proposal. At this initial meeting, the advisory committee will discuss with the student the topic and general approach to writing the grant proposal. The advisory committee will share any major concerns they have regarding the approach including the hypotheses, proposed experiments, or other issues. Either at this meeting or in a subsequent meeting the advisory committee will approve the Doctoral Candidacy Exam Topic. After the committee's approval is in place there should be no further discussion between the candidate and the advisory committee or other faculty. The candidate is encouraged to talk with other students or postdoctoral fellows regarding the writing of the proposal and for help in practicing for the oral defense.

The actual examination will consist of an oral presentation by the student summarizing the grant proposal. The presentation should be 20-25 minutes in length. The oral presentation will be followed by two rounds of questioning. The first round will permit each advisory committee member to ask questions and engage in discussion with the candidate for approximately 10 minutes. The second round should be shorter in duration with approximately 15 minutes of time allocated per committee member. There are no absolute rules regarding the type of questions to be asked, though it would be reasonable for the first round to focus on issues specific to the proposal and the second round to be more general or more related to background information.

Outcomes of Exam

There are three general possible outcomes; pass, conditional pass, fail. The outcome will be based both on the written document as well as the oral defense of the grant proposal. If the candidate receives a "conditional pass," then the student must fulfill the agreed-upon conditions either related more to the written document, the oral defense or both. A candidate who fails the exam, but otherwise is a student in good standing, will be given the opportunity to repeat the Candidacy Exam.

Timeline

This examination will be taken within one year of completion of the core requirements and usually no later than the summer after the student's second year. The student should plan on meeting with the advisory committee approximately eight weeks prior to scheduling the candidacy exam to discuss a general outline of the grant proposal. The candidate should then plan on spending four weeks writing the grant proposal. In addition, the proposal along with a one page specific aims page will be distributed to the advisory committee at least two weeks prior to the scheduled oral defense. If a student fails to meet the two-week deadline for submitting the grant proposal to the committee, then the exam will be rescheduled with a different topic identified for the research proposal.

Below is a breakdown of the sequence of events leading to the PhD Candidacy Exam:

1. The following documents/information must be provided to the Program Director at least six weeks prior to the PhD Candidacy Exam:
 - a. A copy of the "Guidelines for the PhD Candidacy Exam" (found at http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/guidelines-for-the-phd-candidacy-exam_ipm_approved.pdf) signed by the

- student and the supervisor. Signatures are required in order to ensure that the student and supervisor have read the guidelines.
- b. A list of the PhD Candidacy Exam Committee (Chair, advisory committee, and the two proposed additional academic members of the University). At least one of the committee members must be from outside the department of the student's primary advisor.
 - c. The date on which the grant proposal needs to be handed in to the PhD Candidacy Examination Committee including the Chair and supervisor.
 - d. The date and time of the PhD candidacy exam.
 - e. The appended form "Proposed two faculty members to be added to the PhD Candidacy Exam Committee" indicating the fields of expertise of the two additional members and a description of their fields of expertise.
2. Once these documents have been received, they will be reviewed by the Program Director to ensure that the conditions for scheduling the PhD Candidacy Exam have been met.
 3. The PhD Candidacy Exam will be officially scheduled by the IPM Program Coordinator.
 4. Once the PhD Candidacy Examining Committee has been approved by the Program Director, a copy of the form will be sent to every member of the Committee. The scheduling of the PhD candidacy exam will not take place until the student and supervisor indicate that they have read and will adhere to these guidelines.
 5. A copy of the completed grant proposal that serves as the Candidacy Exam will be submitted to the Program Director.

Prospectus Defense

The prospectus serves as a dissertation research plan. The prospectus will be based on the research the student has successfully undertaken that will culminate in the body of dissertation work.

Format

The format of the Prospectus is based on the structure of a National Institutes of Health (NIH) grant, excluding budget and facilities pages. The format includes a statement of hypothesis and specific aims, a research strategy, a discussion of the significance of the proposed research, as well as potential innovations, the approach to be used, preliminary data and references. There is no page limit to the Prospectus, but students are encouraged to aim for the level of detail typical for an NIH R01 grant, so ten (10) to fifteen (15) pages should suffice. Students are encouraged to solicit examples of successful NIH grants from their advisors and committee members as guides to the tone, structure, and scope of their Prospectus.

The dissertation committee evaluates the Prospectus document. After the committee has found the document to be acceptable, the student provides an oral defense of the planned research with the participation of all members of the dissertation committee. There is no formal structure to the Prospectus defense. A discussion of the planned research proceeds until each committee member is satisfied that the student has a solid plan for the dissertation research. Following the successful completion of the oral defense, the student will work with committee members to revise the Prospectus to reflect modifications suggested by the committee-student discussion. The approved Prospectus serves as a firm blueprint that describes the research to be completed by the student toward the dissertation. It cannot be significantly amended or appended without the approval of a majority of the Committee and the Program Director.

The student will submit one copy of the successfully defended Prospectus to the Director of the IPM program.

Committee

The student's Advisory Committee is expanded by one member at the time of the Prospectus, to include an outside member (if not already appointed). An outside member is a graduate faculty member who is not in the department of the student's advisor. This new committee becomes the dissertation committee.

Timeline

Typically, the student is expected to be within one year of having passed the Candidacy Exam to present and defend the Prospectus. This timing underscores the utility of the Prospectus—it is the research plan for the dissertation work.

Dissertation

The culminating experience of the PhD program is the completion of a written dissertation and dissertation defense.

Defense

The dissertation defense is the venue for a student to display his or her research achievement over years of hard work in a graduate program. It is also an opportunity for the faculty to decide whether the student has been adequately prepared for a future as a PhD scientist. The defense is divided into two parts: the public talk and the committee-led oral defense.

PhD students in the IPM program will prepare and deliver a 45-minute talk for the public. The public is allowed to ask questions after the talk, though this Q&A is not meant to last more than 10 minutes.

After a short break (5 minutes), the student and the student's committee will reconvene in the seminar venue so that the committee-led oral defense can begin. The oral defense will be closed to the student and the committee. There will be two rounds of questions from each committee member. Each committee member has 10 to 15 minutes to question the student about the student's research or the dissertation document. Each round will take about 1 hour since the committee has five members (the advisor, the graduate appointed representative, and three other members).

At the completion of the two rounds of questions, the student leaves the room while the committee deliberates. The committee decides whether the student has successfully defended the dissertation. If yes, each committee member signs the dissertation signature form. If no, the committee decides *whether* and *how* the student may stand again to defend the dissertation.

The signature form can be found here:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/ipm-dissertation-signature-page.pdf>

The guidelines for how to format the dissertation can be found here:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/guidelines-for-formatting-theses-and-dissertations-ipm.pdf>

Timeline

The defense date is set when the advisor has determined the student has completed the work in his/her dissertation plan. The advisor and student should come to a mutually agreeable timeframe for the defense. The student will confirm with each of his/her committee members that they will be available for the defense on the day and at the time in question.

Finding a mutually agreeable date and time for the defense by advisor and student should ensure that there is only a successful outcome for the defense. If there is any chance of a defense failure, it is too early to set a defense date.

MS to PhD

Pathway from MS to PhD in the IPM Program

Students enrolled in the IPM program Master's degree may, with the guidance of their advisors, choose to continue research study to earn the PhD. The enrolled Master's student would be required to write and defend the Master's thesis and also apply to the IPM program according to admission deadlines (February 1). The student's future PhD advisor will write a recommendation letter to be included in the application package. The advisor's letter will be a major determinant of admission. If a student chooses to undertake the PhD in a laboratory that is not the same as that in which the student earned the Master's degree, the advisor letter should be written by the future PhD advisor, not the Master's degree advisor.

Upon acceptance into the IPM PhD program, the Master's student may use course credit (excludes research credit and Pharmaceutical Medicine Seminar credit) earned in the pursuit of the Master's degree toward the PhD. The Master's degree required 25 didactic course credits, while the PhD requires 45, so the student will have at least 20 additional credit hours to complete. The PhD student will be required to undertake a candidacy exam, design and defend a Prospectus (dissertation plan), and defend the dissertation.

Pharm.D. / Ph.D. Program

The Integrated Pharmaceutical Medicine program provides an opportunity for PharmD students to attain a PhD degree through the College of Graduate Studies at NEOMED. Students in the double degree program are expected to meet all of the requirements of both programs within a time frame that is shorter than if the students were to earn the degrees in sequences.

Coursework and Time Frame

The PharmD-PhD plan is a modified sequential degree plan. The PharmD degree will be earned on the normal 4-year time line. During the PharmD sequence, students will be able to use elective opportunities to take coursework that will count toward the PhD. It is expected that students, using a combination of credits transferred from the PharmD basic science curriculum with coursework taken during elective opportunities, to finish the bulk of the PhD didactic coursework by the time the student graduates with the PharmD. It is at this point that the student undertakes the PhD candidacy exam. Once the student passes, he/she will be considered a PhD candidate and will undertake laboratory research full-time. The open-ended nature of PhD research likely means at least two years of research after the completion of the PharmD though the time line may be accelerated due to the student or the type of research. In all probability, the research component of the PharmD-PhD will last about 3 years.

M.D. / Ph.D. Program

The Integrated Pharmaceutical Medicine program provides an opportunity for MD students to attain a PhD degree through the College of Graduate Studies at NEOMED. Students in these double degree programs meet all of the requirements of both programs within a time frame that is shorter than if the student were to earn the degrees in sequence

Coursework and Time Frame

The MD-PhD is a nested degree. The student will progress through the first two years of the MD degree, then take a leave of absence from the MD program during which the student will earn the PhD degree. At the completion of the PhD, the student will re-enter the MD program and finish the final two years. It is expected that students, using a combination of credits transferred from the MD basic science curriculum with coursework taken during the PhD, to finish the PhD didactic coursework within the first year of PhD study. It is at this point that the student undertakes the PhD candidacy exam. Once the student passes, he/she will be considered a PhD candidate and will undertake laboratory research full-time. The open-ended nature of PhD research suggests the student will undertake at least three years of research, though the time line may be accelerated due to the student or the type of research. During the PhD portion of the MD-PhD degree, the student will take a Patient Care Course each semester; this course is designed to keep the student's doctoring skills current so that the transition from PhD research to clinical rotations is smooth. At the completion of the dissertation defense, the student will be awarded the PhD. The semester following completion of the PhD, the student will begin the M3 year to undertake clinical rotations.

Partner Institutions

Northeast Ohio Medical University has an established partnership with five (5) East Ohio Universities: The University of Akron, Cleveland State University, Kent State University, Ohio University, and Youngstown State University. Through this partnership, graduate degree-seeking students from NEOMED are able to take one or more graduate courses at partner universities without having to register as a transient student.

IPM students are encouraged to take advantage of this partnership and take courses at partner institutions. However, prior to taking the course, students are expected to complete a Cross-Registration Form (which can be found here:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/procedures-and-forms>).

The form requires approval of both the academic advisor and the program director. To that end, listed below are recommended courses at partner institutions for IPM students. Students are allowed to enroll in courses not listed below, however they should select these courses carefully and in consultation with their advisor.

Academic Calendars

Courses taught at partner institutions often do not run on the same academic calendar as NEOMED. Please be sure to consult your syllabi and the academic calendars at the institution you are taking a course at to ensure you do not miss class. The academic calendars for the partner institutions can be found at the following links:

The University of Akron: <https://www.uakron.edu/registrar/docs/AcadCal.pdf>

Cleveland State University: <http://www.csuohio.edu/enrollmentservices/registrar/calendar/>

Kent State University: <http://www.kent.edu/calendars>

Ohio University: <https://www.ohio.edu/registrar/calendar.cfm#current>

Youngstown State University: <http://cms.yzu.edu/administrative-offices/provost/academic-calendars>

Recommended Courses

Kent State University

BMS 78637: Bioanthropological Data Analysis I

Dr. Richard Meindl

Examination of methods of univariate and bivariate experimental design. This survey emphasizes tests of hypothesis and estimation techniques with both classical and nonparametric procedures

BMS 60729: Cellular and Molecular Neuroscience

The relation of aspects of the neurosciences to the fundamental properties of nervous tissue, establishing a firm base in experimental neurobiology.

BMS 60440: Cellular Molecular Signaling

Dr. J. Gary Meszaros

The relevant and current topics associated with cellular signaling will be covered. Topics include receptor pharmacology, classes, and regulation, transcription factors, cell cycle signaling, and cell-cell communication.

University of Akron

3470-661: Statistics for the Life Sciences

Data description and presentation, probability applications in the life sciences (including sensitivity, specificity, relative risk), principles and application of statistical inference, ANOVA, correlation and regression.

College of Graduate Studies

The IPM program is part of NEOMED's College of Graduate Studies. The Graduate Studies homepage can be found here: <http://www.neomed.edu/academics/graduatestudies>.

For the General Student Handbook: <http://www.neomed.edu/campuslife/es/handbook>

For links to numerous student resources, such as AIMS, DOCS, Dining, Faculty & Staff Directory, Student Affairs, and Whale Card Funds, you can follow this link: <http://www.neomed.edu/campuslife/student-resources>.

For important forms, including those specific to the IPM program:

<http://www.neomed.edu/academics/graduatestudies/procedures-and-forms/>

For Career resources, check out the Career Center:

<http://www.neomed.edu/campuslife/studentaffairs/career-center/>