



The University of Georgia

GRADUATE STUDIES IN CLINICAL & EXPERIMENTAL THERAPEUTICS

GRADUATE STUDENT MANUAL

2007-2008

Department of Clinical & Administrative Pharmacy
College of Pharmacy
University of Georgia
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I. INTRODUCTION

Purpose- The purpose of the “Graduate Program in Clinical and Experimental Therapeutics” of the University of Georgia (UGA), College of Pharmacy is to provide doctoral (i.e., Ph.D.) training in therapeutics-related research that directly connects the basic science laboratory with the clinical practice setting. Clinical and Experimental Therapeutics (henceforth referred to as “CET”) is a multi-disciplinary program that involves the investigation of disease processes, drug development, and the efficacy and toxicity of therapeutic regimens. The program is designed so that students develop specific competencies in clinical and experimental therapeutics that are translational among the basic, applied and clinical settings. Course requirements and research opportunities for graduate students enrolled in the program provide both experimental (basic) and clinical science experience. Compared with the existing programs in the basic medical sciences, the CET curriculum provides a greater emphasis on the clinical relevance of research studies while maintaining rigorous instruction in experimental design, statistical analysis and hypothesis testing. It also recognizes the emerging research interests of those holding the Doctor of Pharmacy (Pharm.D.) degree as well as Pharm. D. students and provides a viable career path for those who prefer more extensive research experience than provided by traditional residencies or fellowships. This program also sets the environment for the development of a Pharm.D./Ph.D. program which is a more focused approach to train biological scientists in translational research than standard Ph.D., or M.D./Ph.D. programs.

Faculty and Environment - The faculty members of the CET program encompass a variety of health-related backgrounds and education and include Pharm. D’s, Ph.D’s, and M.D./ Ph.D.’s. The CET program was created in part to address one the primary goals of the UGA Biomedical Sciences and Health Initiative which aims to enhance interdisciplinary interactions between the faculty of UGA and the Medical College of Georgia (MCG) with particular emphasis on joint programs in research and education. It is anticipated that efforts to strengthen the ties between the basic research programs of UGA and the biomedical research and clinical activities of MCG will be rewarded not only by improved research funding to both institutions but also by healthier citizens in the state of Georgia. Furthermore, the development of joint programs in instruction between the two institutions will also allow for a more interdisciplinary approach to the training of biomedical scientists and health care professionals alike. The CET program objectives fall directly within the spirit of this initiative.

The members of the CET Program have collaborations with a number of faculty members across both campuses including several departments in the School of Medicine at MCG. Moreover, CET program members are stationed at both the Athens and the Augusta campuses and are therefore able to easily communicate the goals and initiatives of both universities. Finally, the clinical as well as basic science background and expertise of the members of the CET program as well as their locations on both university campuses allow for a truly “interdisciplinary” as well as “translational” approach to graduate training.

II. CAREER OBJECTIVES

The CET graduate (Ph.D.) program was designed to prepare students for professional careers devoted to medical and pharmaceutical research in academia, industry, and/or government. During the course of study, students are provided the necessary tools to create and test a rational and scientifically based hypothesis that pertains to the development and/or use of therapeutic agents in humans suffering disease. The plan of study provides the student with the necessary technical knowledge and professional insight to investigate a relevant topic in the health related sciences with appropriate analytical techniques. The successful student learns to conduct innovative and independent research studies and develop other scholarly characteristics that are critical to a career in health related research.

III. ADMISSION TO THE PROGRAM

Students are admitted directly into the Ph.D. program of study by the CET graduate faculty on a competitive basis. Students wishing to enter a program of study leading to the Doctor of Philosophy degree must possess, at a minimum, a Bachelors degree (or its equivalent) from an accredited four-year college or university as well as the required prerequisites (see below). Students who are admitted to the Ph.D. program are eligible for Ph.D. candidacy once they have completed all the requirements for such, but are not required to obtain an M.S. degree prior to their application for candidacy for the Ph.D.

IV. GRADUATE TEACHING ASSISTANTSHIPS AND EXTRAMURAL FUNDING

A limited number of graduate teaching assistantships are available (by application) to full-time graduate students on a competitive basis. These assistantships are at least 1/3 appointments requiring 13 hours of duty per week in supporting the teaching, research, and service missions of the Department of Clinical & Administrative Pharmacy of the College of Pharmacy. These duties may include classroom or laboratory instruction, research, and/or assignment to centralized departmental or college needs. Students are required to pay their own fees and tuition and any matriculation or other fees required by the University of Georgia. Tuition is usually waived (or reduced) for students on assistantships, however, activity fees, technology fees, health insurance and other charges may be required. Graduate Assistants must maintain a 3.0 GPA and must take 15 credits of graduate study per semester except for Summer Semester in which they may register for 12 hours.

Graduate students holding a graduate teaching assistantship are expected to fulfill their obligations in a satisfactory manner including such personal qualities as proper dress, manner, preparedness, and punctuality. Satisfactory progress as a teaching assistantship may be assessed through student teaching evaluations, faculty and Department and Associate Department Heads. All leave time must be approved by the faculty and the Department or Associate Department Head in advance. Please be aware that Graduate Assistants do not get paid leave. Assistantships may be renewed at the discretion of the Department of Clinical & Administrative Pharmacy for up to four years. This is contingent upon the availability of funds, the continued progress toward a degree, and satisfactory work performance.

It is also expected that enrolled students in consultation with their major advisor (see below) will apply for outside (extramural) funding to support his/her research. Outside funding not only serves to improve the student's curriculum vitae, but also provides greater flexibility for program initiatives.

V. PROGRAMS OF STUDY

A. General Graduate School Requirements

Students entering a graduate program in the Department of Clinical & Administrative Pharmacy must satisfy the general graduate requirements of the University of Georgia. Graduate School regulations require each student to submit a program of study for the Doctor of Philosophy degree planned in consultation with the student's major professor and the Advisory Committee. All programs of study must be approved by the graduate coordinator and the Dean of the Graduate School.

B. Deficiencies

Due to the varying academic and experiential backgrounds of students entering a graduate program in the Department of Clinical & Administrative Pharmacy, students need to correct any academic deficiencies as soon as possible. This is necessary to satisfy prerequisite requirements for required graduate courses.

C. Assignment of Faculty Advisor

Upon entering the graduate program in the Department of Clinical & Administrative Pharmacy, the student will be assigned a graduate faculty advisor until the student selects a major professor. The faculty advisor will assist the student in establishing a course of study during the first academic year that will include correcting any deficiencies, incomplete prerequisites and required graduate courses. During the first two semesters of graduate study, the student should visit with all CET graduate faculty members to discuss their research interests. Mandatory laboratory rotations (a minimum of one semester divided into 2 laboratory rotations-8 weeks each) beginning the first semester of enrollment will assist the student in matching his/her research interests with that of a potential major professor.

D. Selection of a Major Professor

The major professor counsels the student in pursuing his or her program of study and advises the student concerning procedural steps in the graduate program. The major professor advises the student in choosing and pursuing a research topic, in the preparation of a dissertation, and in obtaining admission to candidacy. Since the major professor serves as the primary mentor for the student, the student should make this choice only after careful thought and consideration. The student selects a major professor by the beginning of the second academic year. The choice of a major professor will be contingent upon the mutual consent of the student and the faculty member. The major professor must be a full member of the UGA Graduate Faculty and a core CET faculty member. Upon selection of a major professor, the student must notify the director

of the CET program and the department graduate coordinator in writing. The final approval of the document regarding the student's selection of a major professor requires the signature of the Department Head. While a change of major professor is possible after the original selection and approval, this will only be allowed under extenuating circumstances and for justifiable reasons. Requests for such a change including the justification must be submitted to the director of the CET program and the department graduate coordinator in writing. As in the case above, final approval of the document regarding the student's change of major professor requires the signature of the Department Head.

E. Course Loads

A full course load for a student who does not hold an assistantship or fellowship is considered to be 15 semester hours. Course loads exceeding 17 semester hours require written approval of the major professor, the graduate coordinator, and the Dean of the Graduate School. A student on assistantship may not exceed a 15 hour maximum course load without approval of the graduate coordinator and the Dean of the Graduate School. If the student's assistantship exceeds 4/9 time, the student's course load may be reduced accordingly. Students who have completed all coursework, fulfilled the residence requirement and are engaged only in research, will have their academic load assessed on an individual basis. Graduate students will not be considered as carrying a full course load if registered for less than 15 semester hours (12 semester hours in Summer). Students using University facilities and/or staff time are required to register for a minimum of 3 semester hours.

F. Academic Performance

All graduate students are expected to maintain a graduate GPA of 3.0 or higher on all graduate courses taken. If the cumulative GPA of a student falls below 3.0 for two consecutive semesters he/she will be placed on academic probation. If the average GPA again falls below a 3.0 while the student is on academic probation, he/she will be dismissed. When a course is repeated, the last grade earned is used for computing the GPA for graduation, or probation and dismissal. No grade below "C" is acceptable for courses included in the program of study. It should be noted that any grade falling below "C" in a core graduate course could be grounds for dismissal.

G. Clinical Seminar/CET Journal Club

All students enrolled in the CET graduate program are required to attend and participate in both clinical seminar and CET journal club. Clinical Seminars are held in the spring semester and include 3rd year Pharm D. students as well as UGA faculty. CET graduate students are expected to make two presentations in this course during his/her tenure as a student that address an important area of clinical therapeutics and the student's own research. The rationale of this requirement is that the student, upon graduation, will be called upon to present clinically relevant ideas, results of research, new procedures, etc., to learned audiences. Students should gain this experience as a part of his or her graduate education so that he or she can give clear, concise presentations and answer questions in the same manner. CET Journal club is held in the Fall and Spring semesters. Each student in the CET program will be required to present and discuss the results of at least one recent (high impact) journal article.

H. Requirements for the Ph.D. Program of Study

For the Doctor of Philosophy degree, the program of study is developed by the student, the major professor, and the Advisory Committee. A preliminary program of study, developed by the student and major professor approved by a majority of members of the Advisory Committee, must be submitted to the graduate coordinator by the end of the student's first year of residence. A doctoral program of study should consist primarily of 8000 and 9000 level courses (or the MCG equivalent). The final program of study must be submitted for approval by the Dean of the Graduate School by the time the notification of the oral comprehensive examination is given. The final program of study must carry a minimum of 30 semester hours of course work, 3 of which must be dissertation (PHRM 9300) for the Doctor of Philosophy. A minimum of 20 semester hours of University of Georgia/Medical College of Georgia courses must consist of didactic courses (generally only open to graduate or medical students). Doctoral research (9000), independent study courses, and dissertation writing (9300) may not be counted in these 20 hours.

All requirements for the Ph.D. degree, except for the dissertation and final oral examination, must be completed within a period of 6 years. The time requirement dates from the beginning of the semester during which the first course on the program of study was taken. A doctoral candidate who fails to take the final oral examination within 5 years after passing the written preliminary examination and being admitted to candidacy will be required to take another preliminary examination and be admitted to candidacy a second time.

Pre-requisites:

Bachelors level undergraduate degree (or the equivalent) in either the physical or biological sciences (pharmacy, biology, chemistry, etc) plus, the following:

- 4 semesters of biologic sciences
- 2 semesters of general chemistry
- 2 semesters of organic chemistry
- 2 semesters of math or physical sciences
- 1 semester of statistics

Required Ph.D. Core Courses: (8000 and 9000 level or the equivalent)

Laboratory Rotation (minimum of one semester in 3 different laboratories)

Suggested course schedule:

Fall semester core courses (Year 1)

Biochemistry - 1 semester (MCG equivalent SGS8021 Biochemistry & Gene Regulation
5 credit hours)

Molecular/Cell Biology 1 semester ((MCG equivalent SGS8022 Molecular Cell Biology
5 credit hours)

Basic Physiology – 1 semester (may be waved depending on students undergraduate
experience)

Research Methods – 1 semester (UGA PHRM8640 3 credit hours)

Summer semester core courses (Year 1)

Biostatistics – 1 semester (MCG equivalent STA7040 3 credit hours)

Spring semester core courses (Year 1)

Advanced Therapeutics I * (UGA PHRM8700 4 credit hours)

Fall semester core courses (Year 2)

Advanced Therapeutics II* (UGA PHRM 8710 4 credit hours, offered every even numbered year)

Advanced Therapeutics III* (UGA PHRM 8720 3 credit hours)

Clinical Seminar/Journal Club (UGA PHRM 8730 1 credit hour all semesters)

Clinical Rotation / Clinical Trial Certification* (UGA PHRM 7500 2 credit hours, 1 semester after core courses are completed)

Electives

1 semester (select from list below)

Spring Electives:

Cardiovascular Physiology and Pharmacology (MCG equivalent SGS8120 3 credit hours)

Drug Discovery (MCG PHM8130 3 credit hours)

Neuropharmacology

Neuroscience

Toxicology

Additional courses may be required depending on a student's academic and professional background and the discretion of the student's advisory committee. Students not exhibiting excellent written and/or oral communication skills will be required to take various courses to correct these deficiencies.

* Courses identified with a * may be exempted by those holding the Pharm.D. degree .

VI. STUDENTS WITH A PHARM.D. OR M.S. DEGREE FROM ANOTHER UNIVERSITY

Students may be admitted into the Ph.D. program after receiving a Pharm.D. degree or M.S. from another university. The record and performance of the student will be evaluated by the graduate coordinator and the CET graduate faculty. An appropriate modification to course requirements will be made to achieve equivalence with those students receiving the M.S. degree from the University of Georgia

VII. SELECTION OF THE ADVISORY COMMITTEE

The major professor serves as chairman of the Advisory Committee. Four additional faculty members must be selected, three of which must be members of the Graduate Faculty of the University of Georgia. At least one of the members of the Advisory Committee must be a core

CET faculty member and selection of at least one member from both the Athens and Augusta faculty is strongly encouraged. It is also expected that at least one member of the advisory committee be selected from the Medical College of Georgia graduate faculty. The functions of the doctoral Advisory Committee include planning and approving the student's program of study, arranging the comprehensive written and oral examinations, advising the student on academic and research program, approving the subject for the dissertation, and reading and approving the completed dissertation. This committee should be selected as early as possible after the student has selected a major professor (generally within two months of completion of the first year). UGA Graduate School Advisory committee for doctoral degreeed form should be completed and submitted to College of Pharmacy Graduate Coordinator. After formation of the advisory committee, it is expected that a meeting of the committee will be held at least twice per year to assess the progress of the student.

VIII. RESEARCH PROPOSAL

The student must submit a research proposal to the Advisory Committee after all course work including research and clinical rotations have been completed and the written comprehensive examination has been passed. The proposal will be submitted and defended as part of the oral examination (see below). The proposal should follow the format of a federal grant application such as NIH.

The research proposal should contain the following general sections:

Introduction

Statement of overall problem, central hypothesis, specific aims, and long-term goals of the proposed research.

Literature review

Critical review of the most essential previous work, including a description of the current research status of the subject.

Methods

Description of the research methodology, data collection plans, justification of sample size and data analyses to be used.

Estimated Budget

Estimate of expenses necessary to conduct the research project. The estimate may include travel expenses and any anticipated costs which may occur in data collection. *The estimated budget does not imply or guarantee funds will be available for the project.*

Significance

Discussion of the potential significance of the proposed research project.

Bibliography

Listing of cited references. The format should conform to the chosen application used or the consensus of the Advisory Committee.

The Advisory Committee will meet with the student for the purpose to accept, modify or reject the proposed research project. The accepted proposal must be presented in final form to the Clinical and Experimental Therapeutics faculty and graduate students as a seminar.

IX. WRITTEN AND ORAL EXAMINATIONS

Prior to admission to candidacy for the Ph.D. degree, the student must pass formal comprehensive written and oral examinations. The comprehensive examination is designed to test the student's knowledge of the fundamental concepts and methodologies in the core departmental course work and the elective area of study. The Advisory Committee administers the comprehensive examinations. The comprehensive examinations can be taken at any time after completing the required coursework or at the discretion of the Advisory Committee if all coursework has not been completed. The written examination should be completed within one year of the completion of all course work. The written examination may consist of both open and closed book portions. Students will be given five general questions (one from each committee member) on Day 1 (4 hours) and five specific questions related to their projects (one from each committee member) on Day 2 (4 hours). Students are asked to respond to 4 out of 5 questions each day. On Day 2, students have to answer the question from the faculty member they choose not to answer on Day 1. Each question will be evaluated as + (satisfactory and exceeding expectations), 0 (incomplete or minimally acceptable response), or - (unsatisfactory). Grading of the examination will be completed within 2 academic weeks and grades will be either **Pass** or **Fail**. A minimum of 6+ is required to pass. Students are allowed 2 attempts to pass the written examination.

After successful completion of the written examination, the student is eligible to take the oral examination. The student is strongly encouraged to take the oral examination as soon as possible after completion of the written examination. The student, in consultation with his or her major professor and the Advisory Committee, schedules the oral examination and notifies the graduate coordinator of the time and room number. The Graduate School must be notified by the graduate coordinator, in writing, at least 2 weeks before the examination. At this point several forms need to be completed and submitted to the departmental Graduate Coordinator and these include Advisory Committee for Doctoral Candidates, Final Doctoral Program of Study and Application for Admission to Candidacy. The oral examination is open to all members of the faculty and shall be announced by the Graduate School. During the oral examination, the student will present the research proposal and then will be questioned on all facets of the student's major area of interest and his or her general knowledge of experimental therapeutics. Additionally, the student will be given the opportunity to demonstrate competence in any areas of perceived weakness noted on the written examination. Four or five votes are required to pass the oral examination. Successful completion of the oral examination will result in formal admission to candidacy for the Ph.D. degree.

X. ADMISSION TO CANDIDACY

Admission to candidacy for the Ph.D. degree should be requested by the major Professor immediately following the successful completion of the comprehensive, preliminary oral

examination. Doctoral students are required to register for a minimum of 10 hours over the next 2 semesters after admission to candidacy. A dissertation or thesis will not be approved by the Dean of the Graduate School prior to the student's admission to candidacy.

XI. FINAL DEFENSE OF THESIS OR DISSERTATION

The student must register for a minimum of 3 hours of dissertation (PHRM 9000). During his or her tenure in the graduate program, the student may register for a maximum of 50 semester hours of PHRM 9000, depending on the amount of work required to complete the research project. A final copy of the dissertation or thesis must be provided to each member of the Advisory Committee at least 3 weeks prior to the final defense. An additional copy of the dissertation is required to be placed in the Departmental office 2 weeks prior to the final defense. The final oral defense of the dissertation is open to the University community. The graduate coordinator must be notified of the time and place of the final defense at least 2 weeks prior so that the Graduate School may be notified. The final defense will consist of a 30-45 minute presentation by the candidate of his or her research, followed by an oral examination from the Advisory Committee covering the substance of the research. The Advisory Committee will determine the success or failure of the candidate (4 of 5 positive votes required for successful pass) and inform him or her of their decision and any additional recommendations immediately following the defense.

XII. GRIEVANCE PROCEDURES FOR GRADUATE STUDENTS

The areas of interest covered by the Department of Clinical and Administrative Pharmacy are both broad and varied. The possibility exists that differences of opinions involving philosophical interpretations of problems or personality conflicts between student and faculty or between students may occur. Normally, such situations would be resolved amicably between the individuals involved. When this does not occur and serious grievances persist, the following procedures will be initiated to achieve a just and equitable settlement. The student will submit a formal, written complaint to the person(s) involved outlining the grievance and a request for a conference for a solution. The addressee of the complaint will submit a written reply to the student within 10 days. If an agreement is reached, a dated copy of the agreement, signed by all parties, will be provided to the graduate coordinator. If the grievance cannot be settled, the student will submit all correspondence concerning the grievance to the Department or Associate Department Head who will meet with the parties involved to resolve the grievance. The final solution, including any agreements, will be written and signed by all parties and retained in the Department files.

If the Department or Associate Department head is unable to resolve the problem, or if he or she decides the problem should be considered by the Departmental Graduate faculty, the grievance will be presented to the Department Graduate faculty within 10 days for discussion and solution. The decision of the Department Graduate faculty will be binding upon all individuals involved, but may be appealed to the Dean of the Graduate School if necessary.

XIII. SCHEDULING OF DEPARTMENTAL GRADUATE COURSES

In order to facilitate scheduling of Departmental graduate courses and seminar, each student should submit a copy of his or her class schedule to the departmental secretary by the first day of classes each semester. Once schedules for all students are compiled, the faculty responsible for seminar and graduate courses will notify students of the meeting day and time. The meeting days and times for most departmental graduate courses are published in the University of Georgia Schedule of Classes (OASIS). Graduate courses will meet at the days and times designated in the OASIS unless alternative days and/or times can be determined which are mutually acceptable to both the course instructor(s) and students enrolled in the class.

XIV. DEPARTMENTAL OFFICE POLICIES

The Department of Clinical & Administrative Pharmacy wishes to provide graduate students with the best of all educational atmospheres in which to pursue graduate training. The Department is blessed with outstanding faculty members who have the skills and background to direct the graduate student during their graduate education at the University of Georgia. The departmental office facilities have been structured to meet both the needs of graduate students as well as those of the faculty. To insure that these facilities are employed to their full potential, the following policies govern graduate students' use of the office supplies.

A. Secretarial

The departmental secretaries must serve the needs of several faculty members. He or she cannot perform favors for the graduate students. For example, the typing of personal letters, attending to special requests regarding telephone or other communications, etc., are not the responsibility of the departmental secretaries. The Department has provided ample word processing resources for the graduate students that are available on a 24 hour basis. Graduate students should employ one of the word processing systems available in the Department to type their own letters, reports, or dissertations and theses. Graduate students are not allowed to use the secretaries' computers. Many of the files contained in the secretaries' computers are confidential. Secretarial typewriters are not available for graduate student use.

B. Departmental Stationary and Letterhead

College of Pharmacy letterhead and stationary cannot be used except for official functions of the University. University of Georgia regulations prohibit the use of letterhead for personal reasons by both faculty and graduate students. The obvious exceptions for graduate student use are those letters that are conducted under the direction of a major professor in association with a research project, thesis, or dissertation.

C. Telephone and Fax Machine

The Departmental telephone system is intended to support the functions of teaching and research. No long distance calls, other than those associated with the student's research efforts, are permitted on the Departmental telephone system. An exception is long distance calls associated

with a research project under the direction of a faculty member. An additional exception is for contacting potential employers near the completion of graduate work. Local personal telephone calls, both incoming and outgoing, should be brief so as not to distract other graduate students or faculty. The graduate telephone should not be used for any sort of personal business such as charitable, recreational, or entrepreneurial endeavors. Telephones are provided specifically for graduate student use. Please refrain from using other telephones, especially the master phones used by the secretaries. If a graduate student needs to make long distance phone calls to support research efforts, the major professor will provide him or her with his or her long distance access number.

D. Computer Access

Computers are available in the Department for the exclusive use by the graduate students. The computers may be employed to support word-processing, data analysis, or other computer applications associated with the academic process. Please keep the computer areas clean. Personal files should not be maintained on the hard drives. For the instructional portion of the graduate pharmacy curriculum, special student accounts will be established for use of the mainframe computers. For theses, dissertations or special project research, College of Pharmacy accounts and associated passwords will be provided through the major professor or faculty advisor. College passwords are not to be shared with other graduate or undergraduate students. Use of these accounts results in direct charges to the Department of College. File space on the mainframe computer can be requested for the student through his or her major professor.

E. Supplies

Supplies are normally provided to support specific research projects. The graduate student is expected to purchase all of his or her supplies (paper, notebooks, floppy disks, pencils, pens, etc.) necessary for academic functions.

F. Copy Machine

Charges for use of the copy machine are assigned directly to the Department. Use of the copy machine must be restricted for support of the administrative and some undergraduate and graduate instructional efforts by the faculty. Graduate students are encouraged to use other University copiers for course work and personal research. Copying materials essential for research and seminar presentations should be cleared with the student's major professor or advisor.

G. Smoking

Smoking is not allowed anywhere within the College of Pharmacy building in Athens or in any Medical College of Georgia building in Augusta.

H. Electronic Mail

All faculty, staff, and graduate students are provided a free Internet electronic mail address on the College of Pharmacy or Medical College of Georgia network. Network administrators will establish your e-mail address. You should check your e-mail daily for departmental/college announcements.

I. Office Assignments

The Department Head or Associate Department Head will assign students office space.

J. Departmental Conference Room and Videoconferencing

The Departmental conference rooms are used for a number of administrative and academic functions including videoconferencing. Use of the conference room must be scheduled through the departmental secretary. This room must be kept clean.

XV. TEACHING ASSISTANTSHIPS

The Department is solely responsible for the instructional and research efforts provided by individual graduate assistants. The Department policy requires that the graduate student post at least 13 hours during the week in which he or she will be available in the office, classroom, or laboratory area in fulfillment of the contract. The 13 hours must be exclusive of class time. This is based on a 1/3 assistantship.

XVI. STUDENT HEALTH REQUIREMENTS

Students must adhere to all university health requirements and guidelines. In order for a student to work in a laboratory and patient care settings he/she must:

- A. Obtain complete Hepatitis B vaccination
- B. Obtain tuberculosis screening (and treatment if positive).
- C. Maintain current tetanus prophylaxis

Immunization requirements for MCG campus may be different than UGA. Students are advised to check (<http://www.mcg.edu/shs/immuniz.htm>) for a complete list.

International students are required to have health insurance. Students are advised to check the Office of International Education website (www.uga.edu/oie) for requirements.

XVII. CET PROGRAM COMPETENCIES

Enabling and Terminal Objectives (EO'S AND TO'S).

The following statements provide an overview of the educational competencies that are expected of any student who successfully completes the CET graduate program. These benchmarks will

be used to evaluate the progress, capabilities, and achievements of all graduate students in the program.

Competency Statement 1. Develop research questions to evaluate therapeutic problems based on pharmacologic and clinical principles.

TO 1.1 (Application) Use pharmacologic principles to address common therapeutic challenges.

EO 1.1. (Knowledge) Discuss the prevalence, epidemiology, and proposed etiological theories associated with the major diseases that affect humans.

EO 1.1.2 (Knowledge) List the major clinical signs and symptoms of the major diseases that affect humans.

EO 1.1.3 (Comprehension) Explain the pertinent pathophysiological processes and anatomical changes associated with the major human diseases.

EO 1.1.4 (Comprehension) Explain the pharmacologic actions of the major drug classes (and commonly prescribed individual drugs).

EO 1.1.5 (Comprehension) Give examples of non-drug approaches to therapeutics.

EO 1.1.6 (Knowledge) Identify the desired outcomes of drug therapy of common diseases.

TO 1.2 (Evaluation) Describe clinically relevant gaps in scientific knowledge associated with specific human diseases.

EO 1.2.1 (Application) Conduct a comprehensive literature search to identify current therapeutic needs and challenges.

EO 1.2.2 (Analysis) Determine the reliability and validity of peer-reviewed and non-peer-reviewed scientific research.

EO 1.2.3 (Evaluation) Critically evaluate the results of peer-reviewed literature and other communications to identify important research questions.

EO 1.2.4 (Synthesis) Formulate a testable scientific hypothesis that is rational, innovative, and clinically relevant.

Competency Statement 2. Design and conduct clinically-oriented and laboratory-based research and interpret the results.

TO 2.1 (Evaluation) Design a scientifically valid and hypothesis-driven study.

- EO 2.1.1. (Evaluation) Compare available models and methodologies to select the most appropriate to address specific research questions.
- EO 2.1.2 (Analysis) Differentiate the limitations of available methodologies and modify/develop new methodologies.
- EO 2.1.3 (Synthesis) Devise a data analysis plan for a research proposal.
- EO 2.1.4 (Analysis) Select appropriate controls to clearly demonstrate that the completion of the proposed studies will answer the research question.
- EO 2.1.5 (Application) Predict the appropriate number of subjects/animals/experiments in a research study to achieve statistical validity.
- EO 2.1.6 (Evaluation) Defend the overall design of a research study.

TO 2.2 (Complex Overt Response) Implement an experimental protocol.

- EO 2.2.1 (Application) Demonstrate appropriate laboratory and clinical skills required for the research project.
- EO 2.2.2 (Evaluation) Validate the methodology employed in the research protocol.
- EO 2.2.3 (Synthesis) Devise a documentation system for each component of the research project including equipment log, data recording, budget expenditure, experimental conditions and analyses.

TO 2.3 (Evaluation) Interpret the data collected in a research study.

- EO 2.3.1 (Application) Execute data analysis.
- EO 2.3.2 (Evaluation) Interpret the results of a research study with respect to the aims of the study.
- EO 2.3.3 (Evaluation) Discuss the significance of the results of a research study.
- EO 2.3.4 (Evaluation) Identify the limitations of the study to develop future research questions.

Competency Statement 3. Communicate effectively with the health care, research, and lay communities.

TO 3.1 (Synthesis) Formulate a strategy to communicate effectively with professional or lay audiences

- EO 3.1.1 (Analysis) Select the appropriate level of verbal communication based on a person's (or groups') level of comprehension.
- EO 3.1.2 (Analysis) Identify appropriate nonverbal aids (eg. computer assisted instruction) to enhance verbal communication.
- EO 3.1.3 (Application) Use effective speaking skills and technologies to present the results of research studies.
- EO 3.1.4 (Application) Employ effective strategies to assess an individual's comprehension of verbal information (eg. Informed consent).

TO 3.2 (Synthesis) Write clear, concise written reports of research results.

EO 3.2.1 (Analysis) Select the appropriate type and style of written communication based on the intended audience.

EO 3.2.2 (Application) Use the rules of grammar, punctuation and spelling to prepare a written communication.

EO 3.2.3 (Analysis) Determine the most appropriate way to display data (eg. Bar graph, box plot).

TO 3.3 (Application) Use effective strategies to obtain funding for research ideas.

EO 3.3.1 (Knowledge) List the essential components of a research proposal (AHA, NSF, NIH)

EO 3.3.2 (Application) Identify potential sources of funding for research projects.

Competency Statement 4 Apply ethical principles and comply with legal and regulatory requirements in the conduct of professional activities.

TO 4.1 (Synthesis) Integrate ethical principles into one's professional conduct.

EO 4.1.1 (Application) Recognize what constitutes scientific fraud and plagiarism and conditions under which they occur.

EO 4.1.2 (Application) Recognize what constitutes proper attribution for the contributions of others.

EO 4.1.3 (Evaluation) Identify when actual or perceived conflicts of interest exist.

TO 4.2 (Application) Comply with all legal and regulatory requirements for research, teaching and service

EO 4.2.1 (Application) Follow the Federal Code of Regulations in the performance of clinical research.

EO 4.2.2 (Knowledge) Successfully complete the NIH certification for clinical investigators

EO 4.2.3 (Application) Adhere to and comply with all state and federal regulations concerned with biological, chemical, and radiation safety.

EO 4.2.4 (Application) Adhere to and comply with all state and federal guidelines concerned with the ethical use of animal subjects in research (e.g., NIH, AALAC, etc).

Competency Statement 5. Implement a strategy for life-long personal and professional development.

TO 5.1 (Synthesis) Formulate a strategy for life-long learning

EO 5.1.1 Identify (analysis) professional and personal resources for life-long learning

EO 5.1.2 Employ (application) effective time-management and organizational skills

EO 5.1.3 Establish (application) an effective network for professional and personal development

EO 5.1.4 Identify (analysis) and participate actively in professional organizations

Competency Statement 6. Demonstrate professional values and behaviors.

TO 6.1 (Synthesis) Practice appropriate professional behavior when interacting with other people in classroom, laboratory and clinical settings.

EO 6.1.1 (Knowledge) Identify what constitutes professional behavior in various settings.

EO 6.1.2 (Application) Recognize and respect differences in culture, religion and gender.

EO 6.1.3 (Application) Demonstrate respect toward all individuals.

EO 6.1.4 (Application) Demonstrate punctuality, timely communication and adherence to deadlines.

EO 6.1.5 (Application) Dress appropriately for each professional setting and demonstrate good hygiene.

TO 6.2 (Synthesis) Demonstrate empathetic responses to patients/human research subjects

EO 6.2.1(Analysis) Identify the cognitive and affective information conveyed in the verbal portion of communication.

EO 6.2.2 (Comprehension) Explain the characteristics of an empathetic response.