

UALR/UAMS Joint Graduate Program in Bioinformatics

Graduate Student Handbook

Fall 2016

UNIVERSITY OF ARKANSAS AT LITTLE ROCK

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UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

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UALR/UAMS Graduate Program in Bioinformatics

Graduate Student Handbook

Introduction

The Graduate Program in Bioinformatics is jointly and equally offered by the University of Arkansas at Little Rock (UALR) and the University of Arkansas for Medical Sciences (UAMS). UALR functions as the host institution and is responsible for enrolling students, maintaining their student records, and providing administrative support for the program. The program officially is managed through the Graduate Schools at both institutions with the UALR Donaghey College of Engineering and Information Technology (EIT) – and in particular its Department of Information Science (IFSC) – and the UAMS College of Medicine providing valuable financial and administrative support to the program. Specifically, EIT provides significant administrative support by underwriting part of a Technical Director and Administrative Assistance and both Colleges provide several graduate assistantships. Most financial support, however, is provided through a U.S. National Institutes of Health grant, the Arkansas IDeA Networks of Biomedical Research Excellence (INBRE; see <http://brin.uams.edu>).

Over sixty faculty members at both universities – including a number of affiliated faculty from the US FDA's National Center for Toxicological Research – actively participate in the Graduate Program. Collectively, these faculty represent the two universities, six colleges, and over two dozen academic departments.

A Bioinformatics Steering Committee is responsible for the Bioinformatics Graduate Program; this committee is chaired by the Bioinformatics Program Director and has equal representation of faculty from both UALR and UAMS. The Steering Committee reports through a UALR/UAMS Joint Graduate Council to the Graduate Deans of both UALR and UAMS. Other bioinformatics faculty committees – the Student Admissions Committee– assume specific responsibilities with accountability to the Program Director and the Steering Committee.

The Program offers two degrees: the Doctor of Philosophy and the Master of Science. Students applying to the program designate whether they are applying to the MS-only (Master's) track or the PhD (Doctoral) track. While the Master's Degree is breadth- and course-oriented, the Doctorate Degree is primarily research-oriented; initiation of the PhD Program requires completion of a Master's Degree in Bioinformatics or closely related degree. There is a significant research orientation that permeates the entire program, starting with the first semester of the MS Program via the Laboratory Rotations through the Master's Capstone Project and into the PhD Dissertation.

The Bioinformatics Graduate Program is an interdisciplinary program built around four cores:

- Bioinformatics,
- Biostatistics, Modeling and Simulation,
- Information and Computer Science, and
- The Life Sciences

Graduate-level coursework in all four cores is required of all students, making this a challenging but rewarding area of study. Aspects of all four cores should be reflected in the Master's Capstone Project and the PhD Dissertation.

Graduate education is an opportunity to increase a student's knowledge, to broaden his/her understanding, and to develop his/her independent thinking and research capabilities. Consequently, the academic program of study and achievement should reflect a personal commitment from the student to the many disciplines within the program and to exceptional scholarly standards. While graduate faculty and staff members serve as counselors and assistants, the accomplishments of a graduate student are primarily a

result of each student's own personal ambition and dedication. The success of the student's graduate education depends on his/her ability to define goals and to organize and execute a program of study and research needed to meet those goals. Merely meeting or satisfying degree requirements should not be the only aim of a quality graduate experience. Students are therefore expected to participate in the multitude of extracurricular activities sponsored by the bioinformatics – and other – programs.

This handbook is intended as a guideline for most of the rules governing the Graduate Program in Bioinformatics. Graduate students and faculty should familiarize themselves with its content, paying particular attention to university deadlines at both UALR and UAMS; UALR and UAMS frequently have different academic calendars (affecting class start dates and breaks). Additional and timelier information is available at <http://ualr.edu/bioinformatics>. This handbook (the most recent "official" version is available at <http://ualr.edu/bioinformatics/student-resources/forms/>) is intended to be in conformance with the *Graduate Student Handbook for Students in Joint UALR/UAMS and UALR/UAMS/UCA Graduate Programs*, the *UALR Graduate Student Handbook*, and the *UAMS Graduate Student Handbook*, all of which supersede the information contained within this document.

What is Bioinformatics?

Bioinformaticists research, develop, and apply computational tools and approaches for analyzing, and thus expanding, the use of biological, medical, behavioral, and health data.

- As a discipline that builds upon the fields of computer and information science, bioinformatics relies heavily upon strategies to acquire, store, organize, archive, analyze, and visualize data.
- As a discipline that builds upon computational biology, bioinformatics encompasses the development and application of data-analytical and theoretical methods, mathematical modeling and computational simulation techniques to the study of biological, behavioral, and social systems.
- As a discipline that builds upon the life, health, and medical sciences, bioinformatics supports medical informatics; gene mapping in pedigrees and population studies; functional-, structural-, and pharmacogenomics; proteomics, and dozens of other evolving "-omics."
- As a discipline that builds upon the basic sciences, bioinformatics depends on a strong foundation of chemistry, biochemistry, biophysics, biology, genetics, and molecular biology which allows interpretation of biological data in a meaningful context.
- As a discipline whose core is mathematics and statistics, bioinformatics applies these fields in ways that provide insight to make the vast, diverse, and complex life sciences data more understandable and useful, to uncover new biological insights, and to provide new perspectives to discern unifying principles.

In short, bioinformaticists bring a multidisciplinary perspective to many of the critical problems facing the health and bio-science professions today.

Admission Requirements

Applicants must possess a baccalaureate degree in an appropriate scientific discipline, such as information or computer science, mathematics or statistics, biology, or chemistry; or if their baccalaureate degree is in another area, they must have significant and relevant work experience in one or more of these fields. Students are also required to have a basic background at the undergraduate level in information science, statistics *and* biology, though conditional admission may be made for students who are able to complete all remedial requirements in these areas during their first year. Basic background requirements include:

- **Computer and Information Science:** a junior-level database course (such as UALR's *IFSC 3320 Database Concepts*) and some object-oriented programming experience (such as UALR's *IFSC 2300 Object-Oriented Technology*, a Java programming course)
- **Statistics:** a junior-level, calculus-based statistics course (such as UALR's *STAT 3352 Applied Statistics I* which has one semester of calculus as a prerequisite)
- **Biology:** a junior-level genetics course (such as UALR's *BIOL 3300 Genetics*); it is recommended that students also have some exposure to organic/biochemistry and molecular biology)

Students not meeting these requirements may be admitted on a conditional basis with specific timeline and grade requirements for these undergraduate remedial courses.

Applying

Recent GRE (general test only) and TOEFL (for international students only) test scores are required for the application process as well as transcripts, three letters of reference, a curriculum vitae, and a Statement of Intent. Students interested in being admitted for the Fall semester should plan to have their materials submitted by April 1st. Students interested in being admitted for the Spring semester should plan to have their materials submitted by October 15st.

The Statement of Intent must include:

- An indication of whether you are applying for the "MS" or "PhD" track.
- An indication of whether you are applying for a Graduate Assistantship.
- Why you want to enter the bioinformatics graduate program.
- What you expect to achieve in the program.
- Your long term career goals.

The statement should be one to two pages in length and submitted to the graduate school

Applicants officially apply to the UALR Graduate School for admission to the UALR/UAMS Bioinformatics Graduate Program (please see <https://www.ualrgrad.org/application/>). The UALR Graduate School may require additional documents, such as proof of immunization and financial statements for international students. Additionally, the UALR Graduate School has specific requirements regarding original copies of transcripts and test scores, including how recently these test scores must be.

Only when the student's application packet is complete will the UALR Graduate School forward the application on to the Bioinformatics Program Director for consideration; therefore, *all questions regarding the submission of an application should be directed to the UALR Graduate School and not the Bioinformatics Program personnel.* The Bioinformatics Program Director will review the application materials and submit them as a packet to the Bioinformatics Student Admissions Committee. After the Bioinformatics Student Admissions Committee makes its recommendations, the Bioinformatics Steering Committee will review the recommendations and make a final decision. The Bioinformatics Program Director will communicate the Steering Committee's recommendation to the UALR Graduate School containing the Committee's recommendation. *The UALR Graduate School makes a final determination as*

to whether a student should be admitted (this may depend upon other factors such as health records and financial standing). If the student is ultimately approved for admission, the Program Director's letter will be signed by the Graduate Dean and forwarded on to the student by the UALR Graduate School; therefore, all questions regarding the admissions decision should be directed to the UALR Graduate School and not the Bioinformatics Program personnel.

Financial Assistance

A limited number of graduate assistantships are available on a competitive basis to qualified students admitted into the MS/PhD track. Assistantships may become available at any time throughout the year, but normally assistantships are assigned for the Fall semester early during the prior Spring. It is important for students seeking an Assistantship to apply early (April 1st for Fall Admissions, Oct 15st for Spring admissions). MS-track students and PhD students who do not receive an assistantship offer are encouraged to contact the Bioinformatics Program Director for assistance in finding other work opportunities.

Master of Science

The Master of Science in Bioinformatics degree is an interdisciplinary degree designed to advance a student's knowledge beyond the baccalaureate degree and to meet the *breadth* requirement of the Bioinformatics Graduate Program. Completion of the MS Degree in Bioinformatics is a requirement for initiation of the PhD Program. The Master of Science requires approximately 35 graduate-credit hours beyond the baccalaureate degree. The student's plan of study must be developed in conjunction with the Bioinformatics Program Director and should be done in a manner that supports the research component of the degree and provides a consistent theme running throughout the degree plan. Students should be able to complete the MS Degree within two years provided all the following conditions are met:

- The student enters the Graduate Program with no remedial coursework requirements.
- The student takes a full course load each Fall and Spring semester (9 credit hours) and makes acceptable progress each semester.
- The student makes significant progress during the Summer semester(s); e.g., on his/her lab rotations and/or individual research leading to the Master's Capstone Project.

In rare instances in which the student comes well prepared in one or more of the core areas, an *advancement placement* may be granted. This is at the discretion of the Program Director and is dependent upon whether the prior graduate-level coursework is applicable to the bioinformatics graduate program.

Program Requirements for the Master of Science

	BINF-MS (35 credits)
Recommended Prerequisites	Students coming from either a life science, computing or computational background who have basic competencies in the following areas are well prepared to start our program <ul style="list-style-type: none"> • Biology/Chemistry/Genetics (e.g., BIOL 3300) • Statistics (e.g., STAT 3352) • Programming (e.g., IFSC 2300) • Database (e.g., IFSC 3320)
Core Courses (4 classes, 15 credits)	The degree program is built around four cores: bioinformatics, biostatistics/modeling/simulation, information/computer science, and the life sciences; Students should have completed graduate-level coursework in all four cores. <ul style="list-style-type: none"> • BINF 5445 BINF Theory and Apps (UALR - Fall) • BIOL 5415 Biometry (UALR-Fall) or BIOM 5013 Biometrical Analysis I (UAMS) • BIOL 5417 Molecular Biology (UALR-Spring) • One of the following: CPSC 7375 Machine Learning (Fall), CPSC 7373 Artificial Intelligence (Spring) or CPSC 7385 Analysis of Algorithms (Fall)
Electives (3 to 4 classes, minimum 12 credits)	Students will choose their courses in consultation with their faculty adviser. Electives are meant to further enhance a student's ability to engage in research in one of 4 key areas: Drug Design, Integrated Bioinformatics & Genomics, Computational Biology, or Biomedical Informatics.
Other Requirements (6 credits)	Four credits of either: <ul style="list-style-type: none"> • BINF 7156-7456 – Capstone Project (May be completed in varying credits per semester) • BINF 7155-7455 – Thesis (May be completed in varying credits per semester) Two credits of BINF 7193 Seminar (2 semesters)
Lab Rotations of Research Experience (2 credits)	Two credits of BINF 7145 Lab Rotation (2 semesters). Lab Rotations are used to: <ul style="list-style-type: none"> • Familiarize students with research activities and learning techniques that will be useful in the course of the student's research. • Enable the student to identify a suitable laboratory for their project/dissertation research.

	<ul style="list-style-type: none"> • Introduce students to faculty who could function as a Master's Capstone Project mentor and/or a PhD Doctoral Advisor. • Introduce students to faculty who can assist them in their research projects (e.g., by serving on their individual MS Project Committees or PhD Advisory Committees). • Introduce students to research labs where funding might be available to support the student as a research graduate assistant. <p>Once students have found their mentor they can complete their remaining lab research requirement with their Mentor. Lab rotations are graded. Students must produce a lab report (minimum 4 pages) by the end of the semester as part of their grade.</p>
Additional Requirements for Completing the PhD	<ol style="list-style-type: none"> 1. Identification of Research Mentor (See Lab Rotation Guidelines above) 2. 2 additional semesters of BINF 7193 Seminar (2 credits) 3. 32+ Minimum Dissertation Hours. 4. Successful defense of Dissertation 5. A minimum of 72 graduate hours beyond the BS. Students can fulfill the 72 credit minimum hours using either graduate course credit or additional dissertation hours.

Please contact the Bioinformatics Program Director for course offerings and information on course substitutions. Students or faculty who become aware of new courses that they feel might be appropriate to the Bioinformatics Graduate Program are encouraged to bring them to the attention of the Bioinformatics Program Director for possible inclusion. Students are advised that all courses approved by the Program Director for their degree plan should be consistent with a theme that supports their research and career plans. Therefore not all courses that are included within the bioinformatics program may be appropriate for a specific student's plan of study – some courses presume certain student backgrounds, some are too narrow in content for a student not planning research in that area, and some just don't fit into the theme. On the other hand, a very specialized course not typically included might be highly appropriate for an individual student.

Individual departments at UALR and UAMS are ultimately responsible for the availability of their courses, the course descriptions, and the scheduling of their classes. The exceptions to this are the BINF graduate-level courses which are the responsibility of the Bioinformatics Program Director and the UALR Department of Information Science. Students are referred to the online listings of courses offered at UALR (<https://a.ualr.edu/classes/>) and UAMS (<http://www.uams.edu/gradschool/students>).

The Bioinformatics Program Director, is responsible for assisting students in identifying suitable lab rotations and for ensuring that lab rotations meet the above objectives. All lab rotations must be approved by the Bioinformatics Program Director *before* the lab rotation is undertaken. Only current members of the participating bioinformatics faculty (<http://ualr.edu/bioinformatics/faculty/>) may serve as lab rotation mentors. Students who wish to do a rotation with a faculty member who is not listed may nominate that person by contacting the Bioinformatics Program Director.

Students must prepare a written summary of their accomplishments during each laboratory rotation and submit this to the laboratory rotation mentor and obtain his/her signature concurring with the report. The "Lab Rotation Report" (available at <http://ualr.edu/bioinformatics/student-resources/forms/>) is then submitted to the Bioinformatics Program Director to determine if a passing grade is to be assigned. Grades are ultimately assigned by the Bioinformatics Program Director.

Failure to perform adequately in the laboratory rotations may result in termination of any assistantship funding and/or expulsion from the Graduate Program.

Choosing Project vs Thesis

Both the Master's Capstone Project and Thesis provides a structured context in which the student completes a culminating scholarly experience for the Master's Degree in Bioinformatics. The project or thesis is supervised by a Review Committee consisting of a lead Faculty Research Mentor, the Bioinformatics Program Director, and a minimum of two project mentors who are members of the

Program's graduate faculty. The project or thesis culminates in a public, oral presentation and final grades are determined by the Bioinformatics Program Director in consultation with the student's Review Committee. During the oral presentations, students may be asked to demonstrate their general bioinformatics knowledge and their particular bioinformatics expertise as it relates to their Capstone Project or Thesis.

For those students interested in pursuing the PhD beyond the Master's in Bioinformatics, the Capstone Project or Thesis is an opportunity to identify a faculty mentor and Advisory Committee at an early stage. The work done for the Capstone Project or Thesis can be used as the foundation for the Dissertation Proposal. Students who intend to pursue their PhD may use members of their MS Review Committee as part of their PhD Advisory Committee. In particular under this option, a student should strive for a Capstone Project or Thesis that could result in one or more refereed, publishable papers and/or conference presentations for the student and those who assisted with the project.

The purpose of a project is to solve a practical problem by applying existing knowledge effectively. The most important part of a bioinformatics project is the problem statement. A successful project offers a solution to the stated problem, manifested in one or more tangible deliverables. Examples of tangible deliverables include software tools, database application, web site, simulation results, or experimental data plots/analyses. The main conclusion to be drawn for a project is the degree to which the posed solution effectively solves the stated problem.

Some of the relative merits of a bioinformatics project are:

- Projects tend to have lower risk than theses with respect to raw time of completion. Project deliverables are very explicit, whereas thesis knowledge is often more subjective.
- Projects are typically more flexible in the case of industry-sponsored work in which the deliverables may be more application-focused rather than fundamental in nature.

The purpose of a thesis is to discover new knowledge by posing a theory and investigating it methodically. The most important part of a thesis is the hypothesis. The hypothesis poses a statement that attempts to explain why or how a phenomenon occurs. The investigator applies theory to model the phenomenon and then proceeds to interrogate the hypothesis with experimentation that either supports or refutes the hypothesis. The main conclusion to be drawn for a thesis is the extent to which the hypothesis is supported or not.

Some of the relative merits of a thesis are:

- Some advisers feel that an MS thesis better prepares an individual for the pursuit of a PhD degree and/or an academic research career.
- As archival documents, theses have broader and more lasting impact than project reports.
- With the discovery of new knowledge as the driving motivation, a thesis challenges the candidate to address fundamental, long-term questions rather than narrow, short-term problems.
- Thesis topics are often readily developed into journal article manuscripts, and would provide a pathway to authoring scientific publications.
- Theses have more exacting standards of writing quality and document preparation than project reports, and thereby offer better practice for careers involving professional writing.

Both projects and theses involve experimental work. Experiments for a project typically verify functionality, characterize performance, or validate numerical simulations. Experiments for a thesis may share similar purposes, but have the primary objective of interrogating the hypothesis. Thesis experiments therefore should always be conducted in foremost consideration of how they would support or refute the hypothesis.

Transfer of Credit

Transferability of credit is determined by the program director, based upon the applicability of the courses to the student's educational goals and research project. Transfer of credit may not be granted when courses have been used to meet other degree requirements. Additionally, students with relevant graduate degrees in related fields may petition the program director for an Advanced Placement which reduces the total credits required for a master's degree by two courses (six credits) to twenty-nine (29).

Consistent with UALR Graduate Council policy, transfer requests must be made within the first semester of enrollment within the bioinformatics graduate program. Students may request course transfers by submitting a written request to the Program Director. An amply-documented petition to transfer courses would include, but would not be limited to: a course description preferably including a copy of the course syllabus, institution and date the course was taken, a letter from the course instructor if possible, grade received, a description of general areas covered, and a list of textbooks used in the course. Transfer decisions will be made after consultation with the UALR Graduate School.

Advising

All Master's students are advised by the Bioinformatics Program Director and they will need to obtain his/her written approval before registering for classes each semester. Students enrolled in the PhD Program – while still advised by the Program Director – should form their individual PhD Advisory Committee as soon as possible. If the student has selected a research advisor, the advisor will assist the Program Director and the student in choosing appropriate coursework in support of the student's research project and at the same time in meeting the breadth requirement of the Master's Program.

Writing Requirement

An English Writing Proficiency Exam (WPE) is offered each Spring to assess the student's ability to communicate in a written format. Every student must pass this exam to fulfill graduation requirements. A student who does not pass the WPE is required to take a Graduate Writing Course (GWC), a free, 10-12 week, non-credit course that meets three hours per week during the Spring semester. Students must take the GWC each Spring until they pass; a passing grade is required to complete the MS Degree program.

Doctor of Philosophy

The Doctor of Philosophy is the highest academic degree offered by UALR and UAMS and is considered a terminal degree within the field. The Doctor of Philosophy in Bioinformatics is awarded upon completion of a program of advanced study including a significant, original dissertation in bioinformatics involving all four cores of the program. Work accomplished without the supervision of a bioinformatics faculty member will not be accepted in lieu of the dissertation requirement.

The Doctorate Degree is an interdisciplinary degree designed to advance a student's knowledge beyond the Master's Degree and to meet the *depth* requirement of the Bioinformatics Graduate Program. Being depth-focused, the PhD Program is centered upon the student's dissertation research. Completion of a MS Degree in Bioinformatics or closely related degree is a requirement for admission to the PhD Program.

Students who have only been admitted into the MS Bioinformatics Program will need to officially apply for admission to the PhD Program with the UALR Graduate School. An acceptance decision will be made by the Program Director based upon the student's academic standing in the MS Program and the quality of his/her Master's Capstone project or thesis; the decision will be communicated to the student within two weeks after the semester in which they graduate from the MS Program.

Students must perform at least two years of full-time research (or its equivalent) to complete the PhD. Our goal is to keep the average time spent in the UALR/UAMS MS/PhD Program in Bioinformatics to 4½ years.

Doctoral Advisor

A student's Doctoral Advisor must be a faculty member at UALR or UAMS who has full graduate faculty status at either university and must be a registered participating faculty member in the Bioinformatics Graduate Program (<http://ualr.edu/bioinformatics/faculty/>)¹. / The selection of a Doctoral Advisor is one of the most important choices that students will make during their time in the Graduate Program. A Doctoral Advisor should be chosen with the intent of not only matching research interests, but also with an eye toward finding an individual with whom the student feels comfortable entrusting his/her educational future. A student also is dependent upon the Doctoral Advisor for financial support of their dissertation research (fees, supplies, etc.) and, in many cases, this includes funding a Research Assistantship for the student. Therefore, the likelihood of a student's financial support should be clarified early with prospective Doctoral Advisors. Both students and prospective Doctoral Advisors should take advantage of the system of laboratory rotations to determine compatibility prior to making a firm commitment to each other.

Once a Doctoral Advisor is selected, students should complete the "Designation of Doctoral Advisor Form" available at <http://ualr.edu/bioinformatics/student-resources/forms/>. The form should be signed by both the Doctoral Advisor and the Bioinformatics Program Director; the original will be submitted to the UALR Graduate School. Those students who do not have a Doctoral Advisor by the end of their first six months in the PhD Program may be dismissed from the Graduate Program. Changing Doctoral Advisors after this point is possible – and sometimes advisable – but it usually slows a student's completion of degree requirements. Therefore, this decision should be approached carefully.

An additional Advisory Committee member (see the next section) who is particularly active in a student's research may be designated as a **Co-Mentor**.

Advisory Committee

Students should select and meet with their individual Advisory Committee no later than the completion of the student's first six months in the PhD Program. Preferably, this occurs no later than the last semester

¹ The UALR Graduate School does make a provision for a faculty member who does not have "full" graduate faculty status to be a Doctoral Advisor, but this comes with many other restrictions related to dissertation committee constitution and this situation must be approved by the Program Director and the Bioinformatics Steering Committee.

of the student's MS Program during the time the student is undertaking his/her Master's Capstone Project or Thesis. The role of this committee is to advise and help direct the student's academic and research efforts. The Advisory Committee will be composed of a minimum of five members, including the Doctoral Advisor who functions as the Advisory Committee chair. The chair and three other members of the committee must be participating bioinformatics graduate faculty; these are considered the "internal" committee members. The fifth member of the Advisory Committee must be an external member not affiliated with UALR, UAMS or the Bioinformatics Graduate Program. The Advisory Committee may have up to seven members if necessary to support the students in their research efforts. The primary consideration for a student in constituting his/her Advisory Committee is in identifying faculty who may assist the student with his/her dissertation research.

Students should first consult with the Bioinformatics Program Director about the constitution of the Advisory Committee and prospective members. A "Designation of Advisory Committee Form" (available at <http://ualr.edu/bioinformatics/student-resources/forms/>) must be completed at the first Advisory Committee meeting and signed by the Doctoral Advisor and all committee members. The form should be then be submitted to the Bioinformatics Program Director for approval (who will verify the status of the committee's membership) and ultimate submission to the UALR Graduate School. Those students who do not have an Advisory Committee by the end of their first six months in the PhD Program may be dismissed from the Program. Changing Advisory Committee members after this point is possible – and sometimes advisable – but it may not be done within the six months prior to the student's Dissertation Defense and it requires submitting a new Designation of Advisory Committee form for approval.

The dissertation subject should be selected by the student, with input from their Advisory Committee, at least eighteen months prior to the oral defense². It must be a scholarly contribution to bioinformatics, consisting of new important knowledge or a major modification, amplification, or interpretation of existing significant knowledge. In the first meeting with the committee, the student should provide appropriate background material on his/her education to aid committee members in advising the student on possible, additional coursework. The student also should brief the committee on his/her research interests and any thoughts on the proposed dissertation topic. Obtaining committee consent is essential toward ensuring future success. The "Designation of Advisory Committee" form also lists the additional course(s) that the Advisory Committee has identified that the student needs to complete as part of his/her PhD Program.

Subsequently, the student should minimally meet with the committee at least once per year – preferably much more frequently – and whenever major milestones occur or changes of direction are warranted. Regular meetings will ensure that progress is made in accordance with the committee's expectations.

² This is yet another reason that students are strongly encouraged to settle in on a dissertation topic and form their Advisory Committees during the latter stage of their MS Program.

Writing Requirement

Students who have completed the UALR/UAMS MS Program in Bioinformatics will have passed the English Writing Proficiency Exam (WPE). All PhD students who have not completed the WPE successfully are required to pass this test or complete a Graduate Writing Course (GWC); please see the Writing Requirement section of the MS Program description above.

Program Requirements for the Doctor of Philosophy

A minimum of 34 credit hours beyond the MS Degree (and a minimum of 72 hours beyond the BS Degree) is required for the completion of the Doctor of Philosophy Degree. This consists of

- a minimum of 32 credit hours of dissertation research (a combination of *BINF 9100* through *BINF 9800* over a minimum of four Fall and Spring semesters) **AND**
- a minimum of two credit hours of *BINF 7193 Bioinformatics Seminar*.

Coursework

Generally, the PhD Program is a research-only program, with the exception of the Seminar requirement. Students entering the PhD Program with a Master's Degree from a different institution may be required to take additional remedial coursework as part of their PhD graduation requirements³; this is determined at the time of admission to the program. Furthermore, a student's Advisory Committee may require additional coursework post-Master's should the committee feel that this is necessary for successful completion of the student's dissertation research.

Candidacy Examination Using a Grant Proposal Format

At least eighteen months prior to their Dissertation Defense and within the first six months of their PhD Program, students must prepare a written Dissertation Proposal for their PhD Advisory Committee. The proposal will constitute the written portion of the Candidacy Exam and must be given to the Advisory Committee a minimum of two weeks in advance of the Candidacy Exam. The student must then present the proposal and successfully defend its rationale and experimental procedures for the proposed Doctoral Dissertation within a closed Advisory Committee meeting. At this time, the Advisory Committee will evaluate the Dissertation Proposal and the student's ability to undertake the research program successfully. The Committee will also determine whether the applicant possesses the attributes of a bioinformatics doctoral candidate through questions addressing the student's overall record, domain knowledge, and research skills as part of a comprehensive Oral Candidacy Examination.

The Student should write the proposal using the format of either an NIH or NSF grant proposal where it is expected that each Specific Aim will approximately form a Chapter in the proposed dissertation. The Student should ensure that there is initial progress and the research design and methods are spelled out unambiguously. While the size of this document may vary, it is expected to be around 25-30 pages. Any publications/supplementary material may be attached.

Students who fail the Candidacy Examination will be given only one second attempt. Students failing a Candidacy Examination the second time will be dismissed from the program. Students who successfully complete the examination may be required by their Advisory Committee to revise and update their written Dissertation Proposal. When the final, acceptable version of the Dissertation Proposal is complete, the full Advisory Committee must approve and sign the student's "Candidacy Examination Form" (available at <http://ualr.edu/bioinformatics/student-resources/forms/>) and the original copy of the form must be turned in to the Program Director, for ultimate submission to the UALR Graduate School.

³ Since not all Bioinformatics Programs are comparable, some programs might not have emphasized all four cores of the UALR/UAMS Graduate Program.

Ph.D. Dissertation and Defense

In order to complete the requirements for the PhD degree, students will prepare and successfully defend a written dissertation in accordance with the format described by the *UALR Graduate School Dissertation and Thesis Guide*, which can be obtained from the UALR Graduate School or online at <http://ualr.edu/gradschool/files/2014/07/Thesis-and-Dissertation-Guidelines-2014.pdf>. Students must orally defend their completed PhD research to their Advisory Committee. The defense will be open to the public and must be publicized at least two weeks in advance. The Dissertation Defense may be scheduled as one presentation within the many UALR and UAMS Seminar Series (e.g., UALR's *BINF 7192 Biosciences and Bioinformatics Seminar*). Following the open presentation session (including the typical question-and-answer period) will be a closed examination of the candidate by the Doctoral Advisor and the Advisory Committee. This examination will follow guidelines established by the UALR Graduate School. The examination can be wide-ranging, but will usually utilize the student's research as a starting point. At the completion of the examination, the student will be temporarily excused and the Doctoral Advisor and Advisory Committee will vote to either pass or fail the student. If two negative votes are received from committee members, it is considered a failure of the exam. The student will then be notified of the outcome of the committee's vote. If the student fails the Dissertation Defense, a second attempt may be undertaken at a later time after the remedies required by the Advisory Committee have been successfully made. A second failure results in the student's expulsion from the program.

When the final results of the Dissertation is complete, the full Advisory Committee must approve and sign the student's "Supervisory or Examining Committee Report" and the original copy of the form must be turned in to the Program Director, for ultimate submission to the UALR Graduate School.

Sample PhD Time Table

First Six Months of PhD Program (or earlier)

- Select Doctoral Advisor and submit designation form
- Select Advisory Committee members, hold first committee meeting, choose dissertation topic and submit designation form
- Prepare written Dissertation Proposal in an NIH or NSF Grant Format and present to Advisory Committee for approval during Candidacy Examination [at least eighteen months prior to Dissertation Defense]
- Complete English Written Proficiency Exam (if required)

First Eighteen Months of PhD Program

- Complete PhD coursework (if required)

Penultimate Semester of PhD Program

- Confirm all UALR Graduate Deadlines and schedule final dissertation defense
- No Advisory Committee changes within six months prior to dissertation defense

Final Semester of PhD Program

- Complete written dissertation
- Defend dissertation in closed Advisory Committee meeting after presenting during open seminar
- Make final changes to written dissertation, obtain Committee signatures, and submit dissertation to UALR Graduate School

Policies, Procedures, and General Information

Contacts

Dr. Liz Pierce: Chair of Information Science and PI on the Arkansas INBRE Bioinformatics Core. Dr. Pierce has expertise in program administration and general course advising. Her office is in EIT 550 and she can be reached at (501) 683-7056 or expierce@ualr.edu.

Dr. Mary Yang: Associate Professor in Information Science and Coordinator for the Bioinformatics Graduate Program. Dr. Yang has expertise in bioinformatics research, applications, and career information. Her office is in EIT 303 and she can be reached at (501) 683-2035 or mqyang@ualr.edu.

Dr. Phil Williams: Technical Director of the MidSouth Bioinformatics Center. Dr. Williams has expertise in cluster computing and technical bioinformatics data issues. His office is in EIT 326 and he can be reached at (501) 569-8074 or phwilliams@ualr.edu.

Ms. Dana Ball of the UALR EIT Dean's Office handles all UALR bioinformatics graduate assistantship issues such as paying tuition or initiating personnel action forms. Her office is in EIT 631 and she can be reached at (501) 569-3285 or dgwhite@ualr.edu.

For other administrative issues such as help with travel forms, please see Ms. Devon Holimon in the Information Science Main Office (EIT 550 or email dcholimon@ualr.edu or call (501) 569-8951.

Faculty Members and Research Interests

A complete list of participating faculty in the Bioinformatics Graduate Program, their contact information, and their research interests may be found at <http://bioinformatics.ualr.edu/faculty> (googling an individual faculty member's name provides contact information and research interests for that person).

Facilities

The MidSouth Bioinformatics Center at UALR provides computational hardware, software, and consultation services to students enrolled in the Graduate Program. Additional resources can be found at <http://ARBioinformatics.net>.

Grades and Academic Standing

If a student receives a grade of **C** or lower in his/her course, s/he will be warned by the Bioinformatics Program Director that his/her academic performance is unacceptable, and that the student's performance in the program will be reviewed by the Program Director and the student's Advisory Committee; corrective action may be required, possibly including retaking the course (and without tuition support from the student's assistantship). UALR Graduate School guidelines state that students who do not maintain a 3.0 cumulative GPA on all courses within their program are placed on academic probation at the end of the semester in which they drop below a 3.0 GPA (this may occur without notification to the student). Students who fail to remove their probationary status by raising their GPA above 3.0 during the next enrollment period will be dismissed by the UALR Graduate School (please see <http://ualr.edu/gradschool/index.php/home/student-resources/graduate-catalog/>). Note that UALR Graduate School guidelines also state that the original grade received in a course factors into that student's cumulative GPA even if the student retakes the same course (the new grade also figures into the cumulative GPA).

The Program Director relies upon the recommendations of the student's Advisory Committee regarding that student's status in the PhD program. Normally, a student will be given every opportunity to correct any problem within one year, provided that all other indications (for example, research progress) are positive.

UALR is becoming stricter about professors assigning incompletes in courses due to new funding formulas of the Arkansas State Government. Please commit to completing your courses in a timely fashion; this includes lab rotations and Master's Capstone Project or Thesis.

Advising and Annual Student Progress Reports

New students should contact the Bioinformatics Program Director as soon as possible to make arrangements for registering for their first semester of classes and for an evaluation of which remedial courses, if any, they need to complete. An initial degree plan will be prepared at this time.

All MS students in the Bioinformatics Graduate Program need to meet with the Bioinformatics Program Director each semester, prior to the opening of enrollment for courses in the following semester. During this meeting, the student's degree plan will be updated, courses will be selected for the upcoming semester, and the Program Director will approve the student's enrollment form.

All students in the Bioinformatics Graduate Program need to update their Student Progress Report once a year. Forms will be sent out to the student by the Bioinformatics Program Director. There are two purposes for requiring students to report their activities. The first is to ensure that all students are making satisfactory progress toward earning their degree(s). The second is to enable complete and quality lists of efforts and accomplishments for our program to use when reporting to our major funding sources.

Code of Conduct for Graduate Students

Graduate students must abide by all relevant standards and rules of the Universities. Students should recognize that there are general ethical standards that they are obligated to follow with respect to activities such as academic dishonesty including cheating or plagiarism. As employees (i.e., students who have work assignments including assistantships), there are different standards with respect to the execution of your responsibilities, including the protection of University property. For instance, you should recognize that all research carried out under a sponsoring faculty member legally belongs not to the student, but to the University. Failure to abide by University or Departmental guidelines can result in dismissal from the program. If you are concerned about an ethical situation, you should consult your Doctoral Advisor, the Program Director, one of the other Student Liaisons from UALR or UAMS, and/or the UALR or UAMS Graduate Dean.

Financial Aid

A limited number of assistantships are available on a competitive basis to qualified students admitted into the MS/PhD program (or directly into the PhD program). Assistantships may become available at any time throughout the year, but normally assistantships are assigned for the Fall semester early during the prior Spring. Since most assistantships have a Fall semester start date, interested students are encouraged to complete their application for Fall admission by February 1st.

Financial support falls into three broad categories: Graduate Assistantships (GAs), Research Assistantships (RAs), and other work assignments. Currently, GAs are funded by EIT, the UAMS College of Medicine, and the Arkansas INBRE (<http://brin.uams.edu>; through a program sponsored by the National Institutes of Health). All GAs have a twenty-hour-per-week work assignment in the MidSouth Bioinformatics Center at UALR (some of this time may be reassigned by the Executive Director of the MBC). RAs are funded by external research grants and have twenty-hour-per-week work assignments in the research lab designated by the grant's Principal Investigator (PI). All GAs and RAs receive a monthly stipend for twelve months (or a designated time period) and have tuition paid (depending on the source, fees are not covered). However, tuition for undergraduate coursework (e.g., remedial coursework) or courses that need to be retaken is not covered by the assistantship and typically neither is tuition for graduate coursework overloads (i.e., in excess of nine or ten credit hours each semester). Items such as textbooks and class supplies are not covered by assistantships.

UALR GA and RA issues are handled by the Bioinformatics Program Director and the UALR EIT Dean's Office (including many UAMS RAs which are subcontracted to UALR for administration). All GA and RA assignments have strict requirements that the student have no other outside income and maintain a full-time status (a minimum of nine credit hours during the Fall and Spring semesters; note that withdrawing from courses without replacing them with other courses will be considered dropping down to part-time status). Failure to meet these requirements could result in revocation of the student's assistantship (including the student being billed for the current semester's tuition) and possible expulsion from the program. Students on GA or RA assignments are required to work the expected twenty hours per week during the Summer *and* are required to make significant progress towards achieving their plan of study; in almost all cases, this will involve making significant progress on their research (it might also involve taking appropriate coursework during the Summer, but this is not required). In other words, students on a twelve-month GA or RA are expected to work full-time on their work assignment and their research combined during the summer and other semester breaks. University holidays typically apply to students working on assistantships, but vacation time is not part of the benefits provided to students working on assistantships (though some individual arrangements may be made with the student's work supervisor). GAs working in the MidSouth Bioinformatics Center are required to maintain accurate time reporting and to have their timesheets approved by the MBC Technical Director.

The obvious advantage of an RA over a GA is that the student ideally will have an opportunity to make major progress on his/her research while fulfilling the work assignment. In fact, most PIs expect that RAs will work in excess of full-time on their combined work assignment/research. This works well for the PI who is only paying a half-time stipend, but it also benefits the student who is able to dedicate his/her time totally to performing research and rapidly progressing toward graduation.

Graduate students are primarily responsible for their own financial support. This includes performing their work assignments in an outstanding fashion so as to justify continued funding of their GA/RA and staying on top of the funding status of their assistantship (and soliciting other support in a timely and effective fashion if the funding source is being discontinued), or identifying and securing the "other work assignments" mentioned above (e.g., fellowships, full- or part-time outside employment, work/study arrangements, or an assistantship sponsored by an unrelated organization/department on the UALR or UAMS campus). Students are primarily responsible for making sure that their financial standing with both UALR and UAMS is current; in some cases this may involve verifying that tuition has been paid off a supporting grant and verifying at all fees which are the student's responsibility are paid in full by appropriate due dates.

All GAs are expected to expeditiously transfer to an RA or another work assignment; in fact, some GAs have a very limited funding time period which requires the student to be on an RA within, for example, eighteen months (e.g., GAs sponsored by the UAMS College of Medicine). This will allow GAs to be used for newly-admitted students thereby keeping the Graduate Program viable; it also supports the student more effectively in his/her research efforts.

No GA or RA assignment is offered or renewed for more than a twelve-month period (and, depending upon circumstances, this may be for a shorter period of time). While the student can reasonably expect some continuation of funding, this is not guaranteed. While the Bioinformatics Program Director should be the primary point of contact for the student regarding financial support prospects, the student must inform the Program Director of all relevant information relating to the status of the student's current assistantship in a timely fashion. The Program Director and the other Student Liaisons are able and willing to assist students with identifying their financial support options.

While students are strongly encouraged to follow their dreams in terms of the research that they choose to undertake, the selection of a research project needs to be made within the context of the limited time period for support on a GA, the overall environment of funding support, and the highly-competitive nature of available RAs. Given the pressure to transition off of a GA, students need to be actively making contacts in funded research labs if they expect to complete their PhD.

Petitioning to Have Requirements Waived

The requirements described in this handbook provide a well-rounded background for all students in areas important to the pursuit of a career in bioinformatics. While the described guidelines are to be fulfilled by all graduate students, the Bioinformatics Graduate Program recognizes that specific cases may arise in which

- Equivalent requirements (especially course requirements) have been fulfilled recently at a comparable university, or
- A student's program would benefit if specific aspects of the Graduate Program's requirements were modified. If a student feels this to be the case, a formal written petition may be made to the Program Director to request waiving or alteration of the student's Graduate Program requirements.

A determination will be made in consultation with the Bioinformatics Program Director, the student's Advisory Committee, and/or the Bioinformatics Steering Committee. Students may petition only once for each issue, decisions are final, and – in all cases – sufficient documentation must accompany the request. Petitions should be made in a timely fashion prior to graduation (generally within the first year of enrollment in the either the MS or PhD degree plan).

Registration Procedures

Registration: Obtain a Registration and Advisement form from the Bioinformatics Program Director.

Advisement: Schedule a meeting with the Bioinformatics Program Director, obtain the Program Director's signature on the Registration and Advisement form, and then turn it in to the Administrative Assistant in the Information Science main office. The Administrative Assistant will clear the student's advisement flag, thereby allowing the student to register for classes under the UALR on-line BOSS system. Even in the event that the advisement flag has not been implemented by the Registrar, all students (MS and PhD) must obtain the prior approval of the Program Director before registering for class. The original copy is retained by the Administrative Assistant and the student is welcome to a copy. There may be other forms and/or paperwork that the student will need to process; this especially applies to new students.

Drop/Add Course: Obtain a Drop/Add form from UALR Records and Registration. Complete the form, sign it, obtain the Bioinformatics Program Director's approval, and return the form to Records and Registration. Under no circumstances are students to add or drop a course without the prior permission of the Bioinformatics Program Director. This is especially important to international students who jeopardize their visa status and to students who are on assistantships who are ineligible for the assistantship if they do not maintain a full course load.

UAMS Course Registration

Students registering for courses at UAMS need to do so through the UAMS Graduate School (686-5454; located on the second floor of the Admin West building, room 1.213). Detailed registration information is available beginning on page 18 of the UAMS Graduate Student Handbook (<http://gradschool.uams.edu/students/graduate-school-handbook/>). Please note that not all UAMS graduate level courses are listed with the UAMS Graduate School; registering for these courses require different procedures. Students also should note that the UAMS academic calendar may differ from UALR's; at times, the UAMS semester can begin a week or so prior to the UALR semester implying that registration deadlines can also be earlier.

Information about the UAMS Registration Process is available from form is available from the <http://gradschool.uams.edu/> website. The navigation pane on that page will have a link for the Fall/Spring Registration Information. Please note that the UAMS Graduate School will not advise you as to which courses to take. It is important that you identify yourself as a Joint UALR/UAMS Bioinformatics Graduate Student when contacting the UAMS Graduate School.

If you are supported on a Graduate Assistantship which covers your tuition charges and your stipend is paid by UALR (this includes many of the UAMS-funded GAs which are subcontracted to UALR), please inform the UAMS Graduate School of this when you register for UAMS courses. The UAMS [Graduate School](#) will bill UALR for tuition under these circumstances.

International Students

International students whose native language is not English and who do not have a degree from a regionally-accredited U.S. institution of higher education or from an institution of higher education in a country whose official language is English, must submit a score of at least 550 on the paper-based Test of English as a Foreign Language (TOEFL), at least 213 on the computer-based version, or at least 79 on the Internet-based version.

Please note that most student visas require international students to maintain a full load each semester; international students should keep this in mind when considering dropping or withdrawing from courses since the University has clear responsibilities to immigration authorities in reporting international students who do not maintain their full-time status. Furthermore, an international student who loses a graduate assistantship regardless of the circumstances may also jeopardize his/her visa status.

Graduate Student Travel

The Bioinformatics Graduate Program encourages student attendance at scientific meetings and workshops. Generally, students should seek travel grants from an appropriate professional organization. Alternatively, a student's Doctoral Advisor is expected to provide support for a student who is presenting a paper or poster at a meeting. Occasionally, other travel funds will be available from university, state or federal sources; these opportunities will be announced by the Program Director if/when they become available. Under some circumstances, funding may be available from the UALR or UAMS Graduate Deans.

When travel has been authorized through UALR, provide the appropriate support person with all of your travel information. A Travel Authorization (TA) is completed to make arrangements, including cash advances. Cash advances must be requested a minimum of seven days prior to the travel. During your trip, please keep all your receipts. When returning from a trip, you must complete a TR-1 form (available from the appropriate support person) within *5 days* of returning; return it to the appropriate support person with all of your original receipts. *Please note: you must fill out a travel authorization form before your trip, even if you will not be reimbursed for your travel expenses;* this will document your activities while on "official business" and may provide insurance coverage.

Poster Printing

Through the funding provided by the Arkansas INBRE grant, printing of students may be supported; this requires approval in advance by the Bioinformatics Program Director, though students should first ask their mentors for this kind of financial support. UALR will only pay for printing on campus

Leaving the Program

A student may request a temporary leave of absence from the Graduate Program by petitioning the Program Director. This should be done in writing and should contain appropriate explanations. To re-enter the program, the student must petition the Program Director. Acceptance will depend upon issues such as past performance, funding availability, whether there is an advisor willing to accept the student into his/her laboratory, and a plan of action that indicates that the student is ready to resume his/her studies and make reasonable progress towards completion of a degree. Students should recognize that without formally requesting and receiving such a Leave of Absence, they may be officially terminated by the Graduate Program. The UALR Graduate School may place students in an inactive status after two years of not registering for classes; after this time period they must officially apply for re-admittance to the University. To prevent the need to reapply for admittance, students might consider registering for *BINF 7193 Bioinformatics Seminar*.

Students may resign from the Graduate Program at any time. To do so, they should write a letter to the Program Director stating their intent and inform the UALR Graduate School. It is advised that students contemplating such a move should first consult with the Program Director (and their Doctoral Advisor if applicable) before beginning such a process.

Students can be dismissed from a faculty member's research program at any time if the faculty member determines that the student is not making acceptable progress; this is typically done in consultation with the student's Advisory Committee and the Bioinformatics Program Director. Such a dismissal in itself will not constitute dismissal from the Bioinformatics Graduate Program, but it is the obligation of the student to find an acceptable replacement as Doctoral Advisor within one semester. Students will not be allowed to continue their PhD education within the Program without a Doctoral Advisor. The Program Director and Student Liaisons can be valuable resources for determining the best course of action in this situation.

Students can be terminated from the Program by the Program Director for any of the following reasons:

- Failure to meet minimum academic standards
- Failure to make acceptable progress in their degree work
- Failure to meet generally-acceptable ethical standards of the Universities
- Failure on the research proposal defense
- Failure during the dissertation defense

The student's Advisory Committee also may recommend this action to the Program Director.

It is the obligation of the student to ensure that s/he is complying with University and Graduate Program guidelines with respect to these aspects of their education. If students are unsure or concerned about their status within the Graduate Program, they should consult with the Bioinformatics Program Director and/or their Doctoral Advisor.

Current Contact Information

It is extremely important that students keep current contact information in BOSS; this includes each student's permanent home mailing address, current living address, phone number(s), and alternative email IDs. If the student's contact information changes, he/she must notify the Bioinformatics Program Director, the UALR and UAMS Graduate Schools, UALR Human Resource Services (HRS), and the UALR Registrar's Office.

For international students – according to INS policy – a “change of address” form must be filled out each time there is a change of residence; this is the student's responsibility. Forms are available in the UALR International Student Office.

The primary means of official communication with students is via the student's UALR email ID. If you choose to use another email ID primarily, please make sure that your UALR email is forwarded to your alternative email account. It is a requirement of the Bioinformatics Graduate Program that students respond in a timely manner to all email messages sent to their email IDs on record. This includes a UAMS email ID that the UAMS Graduate School uses for each student.

Student Offices

Students will be assigned office space during their enrollment in the Bioinformatics Graduate Program when possible. Students working as RAs will be assigned office space by their faculty sponsor. Students working as GAs will be assigned office space in one of the MBC student offices. Other students will be assigned office space if and when it is available, most likely in EIT 417 on the UALR campus. Access to EIT 417 can be obtained by filling out the GIT Electronic Lock Authorization Form (<http://git.ualr.edu/forms/git-locks.pdf>).

UALR Keys/Key Cards

Key cards are required to obtain any keys on the UALR campus; blank key cards are obtained from the Bioinformatics Administrative Assistant or the department that controls the space that the student needs to access. Key cards are first approved by the student's supervisor and then must be signed by the Chair of the department and the Director of UALR Graduate Institute of Technology (GIT). When the request has been approved, key card(s) are taken to the UALR Physical Plant to pick up the key(s). In addition to keys, a keypad code or a swipe card may be required to enter some areas. Upon graduation, your keys (and swipe cards) must be turned in to the Physical Plant or you will not receive your diploma.

NOTE: Students are responsible for making sure that office/lab doors are locked and lights are turned off.

Dissertation Expenses

Students are responsible for all costs pertaining to the preparation and finalization of their dissertation; this includes copying charges, binding charges, special paper costs, etc. Students must submit one original, successfully defended copy of their theses-dissertations to the Graduate School for format review. As of spring 2014, the UALR Graduate School no longer requires bound copies of theses or dissertations. Instead, an electronic copy in PDF form may be submitted. Please see the Dissertation and Thesis Guidelines below for full review and submission instructions.

Graduation

The Graduation Application should be completed well in advance of the student's projected graduation date. Applications for graduation are available through the student's UALR BOSS account. Please stay in touch after your graduation! We would like to keep you abreast of future developments and solicit your recommendations for program improvements as you develop practical experience applying what you've learned in our program.

Purchasing

Purchase Orders

If you are authorized to spend grant funds, a Purchase Requisition form is used to order materials and/or supplies, equipment, etc., for your research project. You must type or neatly and clearly print pertinent information on this form. You will be responsible for finding vendor(s), acquiring price quotes, getting part or catalog numbers, etc. You may need to follow competitive bid guidelines. Please note that you need to add sales tax of 7.5%. The account number or project title, your name, the name of your faculty sponsor, and the date must be included at the bottom of the form.

The completed form is to be returned to the appropriate support person. You will be notified as soon as your order has arrived, but check back within 10-15 days if you have not received your order. Once your order arrives, check the order to ensure that the complete order was received. Return the packing slip to the appropriate support person to be processed. Please make notes on the packing slip if everything was not received.

A *Reimbursement Claim Form* is used for reimbursements. The appropriate support person will keep a copy of the completed form and you must take the original form to the Purchasing Department. You *will not* get reimbursed at the time you bring this form to Purchasing. They will process the paperwork and a check or automatic bank account deposit will be forthcoming within 10 to 14 working days. If you receive the check, the check stub is to be returned to the appropriate support person to verify the reimbursement.

Mail Boxes

Mail is delivered to a single location in the Information Science departmental office, usually between noon and 1:30 pm. You may use the following mailing address:

Your name
UALR/BINF Grad
Information Science/EIT 550
2801 S. University Ave.
Little Rock, AR 72204

The Information Science Administrative Assistant will pick up mail daily from EIT 550 and notify you via email that you can come to EIT 550 to retrieve your mail.

Packages are delivered throughout the day. When sending packages via UPS, FedEx or DHL, you must fill out a shipping form from Mail Services; either have Mail Services pick up the package or take it to Mail Services yourself. Permission from a faculty member is required before sending any packages for which you do not personally pay the shipping costs.

Announcements

The primary means of communication within the Bioinformatics Graduate Program is via email, so please check your UALR email account frequently. The binfgrad-l@ualr.edu listserv itself is included on a number of other bioinformatics listservs maintained by the Bioinformatics Program Director.