

**Graduate Student Handbook
Energy Science & Engineering
Data Science & Engineering**

**Bredesen Center
for Interdisciplinary Research and Graduate Education
The University of Tennessee, Knoxville**

Spring 2021-Version 01



THE BREDESEN CENTER
for Interdisciplinary Research
and Graduate Education



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Introduction

The Bredesen Center for Interdisciplinary Research and Graduate Education has developed and offers one of the country's first interdisciplinary PhD programs for a degree in Energy Science and Engineering. The Bredesen Center expands the graduate research campus of the University of Tennessee, Knoxville (UTK) to include Oak Ridge National Laboratory (ORNL), greatly increasing research opportunities by combining the educational resources of a comprehensive research university and the research capabilities of a major national laboratory. This teaming arrangement provides expanded opportunities for graduate students in energy-related sciences and engineering, fostering interdisciplinary research, large-scale problem-oriented research projects, innovation and entrepreneurship. The ESE PhD offers coursework that serves two purposes: a broadening education in the issues of energy generation and use from many aspects and a deep dive into issues of energy in a given area of research. The students work on doctoral research in areas relating to energy in interdisciplinary teams of scientists and engineers working at UTK and ORNL.

The Bredesen Center offers graduate students opportunities to engage in interdisciplinary research while preserving the rigor and depth of a traditional PhD program. In addition, the ESE graduate curriculum is structured to include educational broadening elements that allow for supplemental studies in entrepreneurship, policy, or other energy-related fields. Entrepreneurial aspects of the program include partnership opportunities with the UTK College of Business Administration in developing and implementing business plans to accelerate the deployment of new technologies, in addition to the opportunity to learn from experienced science and engineering entrepreneurs at ORNL. Additionally, the Bredesen Center has developed opportunities for training in policymaking from UTK faculty and ORNL staff with experience in this area. The Bredesen Center is transformational in engaging graduate students in interdisciplinary projects, large-scale problem-oriented research programs, and science-to-applications research opportunities, enabling scientific breakthroughs and innovative solutions to energy-related challenges.

Energy science & engineering and data science & engineering are emerging fields of study that build on the conventional disciplines of science and engineering but are focused on the challenges and issues relating to the development and use of various sources of energy and/or data. The issues of energy supply and use provide our country and the world with some of the grandest challenges that citizens and institutions face now and for coming decades. Enabling research and development of alternative energy resources is a necessary step toward ending global dependence on fossil fuels and providing renewable and sustainable sources of energy for the world. Electricity from nuclear power is a largely non-carbon based form of energy supply, but has been stalled for decades due to issues of safety, politics, and public acceptance. Electricity from solar or wind farms is increasing in volume, but is not close to being cost competitive and constant in output for mass adaptation. Long-term development of electricity from fusion reactors is proceeding but is still several decades away. On the other hand, with a constant influx of data in all areas of life, research is necessary to determine new ways processing and interpreting all of this information. The opportunities provided by this uniquely modern predicament are still relatively untapped. It is necessary for new scientists and engineers to learn how to adapt to these new challenges and lead the way for how to think about and work towards data-related problems and solutions.

The Graduate Experience

Diversity and Access

Graduate students are nationally recruited for this doctoral program in a large annual campaign led by Oak Ridge National Laboratory. Recruiters from ORNL and the Bredesen Center visit a number of top universities across the U.S. to promote the ESE and DSE doctoral programs with potential UTK graduate students. Diversity is a strong consideration in this recruitment process. Students are expected to understand and respect the diversity and access policies of UTK and ORNL and to conduct themselves in a professional manner at all times during their time in the program. The office of the Bredesen Center Program Advisor strives to provide students with individual support by remaining up-to-date on best practices for recruiting and supporting a diverse student population and also by remaining in close contact with University resources for students.

Students are expected to complete an orientation session hosted by the Bredesen Center before starting coursework. Additionally, graduate students who will be working at ORNL will be provided with additional information during a separate ORNL orientation. International students must complete any additional paperwork and training required by UTK or ORNL before set deadlines. In order to provide international students with a positive and supportive experience, the Bredesen Center works closely with the University's [Center for International Education](#) regarding student visas and other immigration requirements.

Campus Resources

- [Office of Disability Services](#) 865-974-6087
- [Center for International Education](#) 865-974-3177
- [Office of Research & Engagement](#) 865-974-3466
- [Center for Career Development](#) 865-974-5435
- [Dean of Students Office](#) 865-974-3179
- [One Stop Express Student Services](#) 865-974-1111
- [Smokey's Pantry](#) 865-309-5446
- [Smokey's Closet](#) smokeyscloset@utk.edu
- [Student Health Center](#) 865-974-3135
- [Student Counseling Center](#) 865-974-2196
- [Office of Multicultural Student Life](#) 865-974-6861
- [UTPD \(University of Tennessee Police Department\)](#) 865-974-3114
- [TRECS-Recreation Center for Students](#) 865-974-5165
- [Center for Health Education and Wellness](#) 865-974-5725
- [Office of Student Conduct and Community Standards](#) 865-974-3171
- [Writing Center](#) 865-974-2611
- [Office of Diversity for Tickle College of Engineering](#) 865-974-0625
- [International House](#) 865-974-3531
- [Parking Services](#) 865-974-6031
- [VolCard](#) 865-974-3430
- [Veterans Resource Center](#) 865-974-5420

Departmental Contacts

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*A list of our faculty, current students, and alumni can be found on the [Bredeesen Center Website](#).

The Graduate Programs

Admission Requirements

To be admitted to the PhD program in Energy Science and Engineering, student applicants must fulfill the [general admission criteria](#) for the Graduate School of the University of Tennessee, Knoxville. In addition, the student must have a Bachelor of Science degree in either engineering or a scientific field (physics, chemistry, biology, mathematics, computational science, etc.), or the equivalent. The Bredesen Center Graduate Coordinating Committee may also admit students with other backgrounds on a case-by-case basis. Dependent on the student's background, additional coursework may be required to satisfy co- and prerequisites. The Bredesen Center application also requires that students submit GRE scores, a statement of research and leadership, and 3 letters of recommendation. Details regarding the Application process is located on the [Bredesen Center website](#).

Degree Requirements

This graduate program leads to the Doctor of Philosophy (PhD) degree in either Energy Science and Engineering (ESE) or Data Science and Engineering (DSE). A minimum of 72 hours (including courses and research) is required beyond the bachelor's degree, exclusive of credit for a Master's thesis, and completion of the core requirements, as outlined in the section on Course Requirements (See page 6-7). Of this number, the University requires a minimum of 24 and up to 36 hours of 600 Doctoral Research and Dissertation, as well as **six hours of 600-level coursework at UTK, exclusive of Doctoral Research and Dissertation credit**. In addition to coursework, students must pass a qualifying exam, a comprehensive exam, and a final exam which includes the preparation and defense of a dissertation. The graduate work is performed under the supervision of an advisor/major professor and a graduate committee.

Doctoral Degree Time Limit

Comprehensive examinations must be taken within five years, and all requirements must be completed within eight years, from the time of a student's first enrollment in a doctoral degree program. The semester(s) and/or year(s) of an approved Graduate Student Leave of Absence (LOA) will not be counted toward time to degree, and milestone deadlines such as Admission to Candidacy will be adjusted accordingly. This policy, along with other requirements from the Graduate School can be found within the [Graduate Catalog](#).

Course Requirements

A minimum of 72 hours is required for the ESE and DSE doctoral programs, and of this total a minimum of 36 hours of coursework is required beyond the BS degree. **36 hours of required coursework must be completed at a minimum for a student with a Bachelor's degree, including the Core Curriculum, a Knowledge Breadth Curriculum, a Knowledge Specialization Curriculum, and Seminar Series, as summarized below.**

A student with a Master's degree must complete 24 credit hours of coursework, including the Core Curriculum, a Knowledge Breadth Curriculum, a Knowledge Specialization Curriculum, and Seminar Series, as summarized below.

All students must complete a minimum of six hours of 600-level coursework, exclusive of Doctoral Research and Dissertation credit.

Students must maintain full-time status during the Fall and Spring semesters each year, and be engaged in at least three credit hours of dissertation research in the Summer semester. Students are encouraged to engage in summer courses if appropriate. **Each student is required to submit their proposed schedule of courses to the Academic Coordinator, the Academic Advisor, and their major professor before classes begin each semester.** Students that do not have a major professor should consult with the Academic Coordinator of the program in order to construct a course schedule that will sufficiently cover the subject matter related to the student's desired area of research.

A student may begin credited doctoral dissertation research - ESE 600 - after successfully completing the qualifying examination. Students who are deemed qualified by the director of the program may begin taking ESE 600 in the same semester as their qualifying examination. After beginning ESE 600, the student must continue to enroll in ESE 600 for a minimum of three hours every semester until the completion of their degree. A total of 36 credit hours of ESE 600 is required in order to graduate for a student with a Bachelor's degree. A total of 24 credit hours of ESE 600 is required in order to graduate for a student with a Master's degree.

Core Curriculum (6 credits)

Energy Science & Engineering

ESE 511 and ESE 512 - Introduction to Energy Science and Technology. Topics include: energy basics; history of energy and society; current and future supply and demand; political and environmental aspects of energy production; energy technologies (fossil fuels, biomass, nuclear fission, nuclear fusion, solar, wind, geothermal); energy conversion, storage, transportation, and distribution; energy efficiency; and innovation.

Data Science & Engineering

Due to the still new nature of the Data Science program, the course requirements highlight the type of content that must be addressed in the student's coursework. The core curriculum should address foundational data science skills and knowledge including coding, statistics, and machine learning. However, the specific courses used to fulfill this knowledge requirement may be substituted according to what is currently being offered at the University of Tennessee, Knoxville campus. Any substitutions *must* be approved by the Program Director, Russell Zaretski.

The DSE core curriculum requires content in the following areas:

- Introduction to Data Science and Computing I and II
- Introduction to Data Analysis and Data Mining
- Statistics I and II
- Mathematical and Numerical Problem-Solving Skills
- Advanced Topics in Data Mining

Knowledge Breadth Curriculum (6 credits)

The Knowledge Breadth requirement includes six hours of coursework selected from the following areas:

1. Political, social, legal, ethical, and security issues related to energy
2. Entrepreneurship, leadership, and management

Other courses are eligible for consideration of the knowledge breadth requirement and all selections should be approved by the Academic Coordinator in advance of registration for the course.

Knowledge Specialization Curriculum (15 credits)

The Knowledge Specialization Curriculum is a deep dive into an area of science or engineering closely related to energy or data science. In consultation with the advisor/major professor, each student must submit a proposed course of study that includes at least 15 hours of approved courses for ESE and at least 6 hours of specialization for DSE. The Bredesen Center Academic Coordinator reviews and approves proposed courses of study. The course of study for each student must include at least 9 credit hours of graduate-level fundamental courses and 6 hours of 600-level advanced courses (*not* including ESE/DSE 600 “Doctoral Dissertation Research”).

A proposed course of study should focus on one of the following Bredesen Center themes:

ESE	DSE
Nuclear Energy	Advanced Manufacturing
Bioenergy and Biofuels	Environmental and Climate Sciences
Renewable Energy	Health and Biological Sciences
Energy Conversion and Storage	National Security
Energy Materials	Transportation Science
Distributed Energy and Grid Management	Urban Systems Science
Environmental and Climate Sciences	
Transportation	
Cross-Cutting Energy Sciences	

Seminar Series (3 credits)

The ESE 599 and DSE 599 seminar series provide topical seminars related to Bredesen Center research themes or knowledge breadth areas. ESE and DSE 599 are offered each fall and spring semester and students must attend at least three semesters of seminar. These three semester requirements do not have to be taken consecutively.

Registration

All full-time Bredesen Center students must enroll in at least nine credit hours each Spring and Fall term. Generally, these credit hours are taken as coursework across the first two academic years. Once coursework is complete and students focus on their research, they will enroll in ESE 600 – Doctoral Dissertation Research. Once students enroll in ESE 600, they *must* take at least 3 hours consecutively (Spring, Summer, Fall) in order to meet Graduate School requirements for PhD Candidacy. Any request for exceptions typically occur only for a formal [Leave of Absence](#) or an [internship unrelated to dissertation research](#) and must be submitted to the Graduate School for approval.

Graduate students must take a minimum of three credit hours in the summer, assuming they are engaged in research and/or courses at UT or ORNL. Before passing the qualifying exam, the student should register for ESE 502 – Registration for Use of Facilities to account for research hours. After passing the qualifying exam a student may enroll in ESE 600 – Doctoral Dissertation Research (See page 9 “Doctoral Dissertation Research”).

During Spring and Fall terms, international students on an I-20 visa are required to take at least 6 credit hours towards credit, not including ESE 502 – Use of Facilities. However, this does not apply to Summer registration.

Major Professor (Faculty Advisor)

Each graduate student must have an advisor/major professor from the Bredesen Center faculty, who can be either an ORNL, UTK, UTC, or UTHSC-based employee. This professor advises the student about course selection, supervises the student’s research, and facilitates communication within the degree program and/or

student's major department, to other departments, and with the Graduate School relative to requirements. The Program Director may act as a temporary advisor during the period in which the student is becoming acquainted with the institutions and determining the focus of research interests. Once the major professor is determined, the major professor and the student together select a doctoral committee. The student is expected to maintain close consultation with the major professor and other members of the graduate committee with regard to progress in the program. This communication will be maintained in part through Student Progress Reports, or self-evaluations that will be reported by the student and reviewed with their faculty advisor at the end of each term. The form for this report may be found on the [forms page](#) of the Bredesen Center Website.

Doctoral Committee

The doctoral committee must have at least four members, generally chaired by the major professor that directs the dissertation research of the graduate student. The chair of the doctoral committee must have faculty status in a UTK tenured or tenure-track position or as joint faculty in the Bredesen Center as an ORNL staff member or as a UTC or UTHSC faculty member. An adjunct faculty member cannot serve as the chair of the committee. Two committee members must be UTK-based tenured or tenure-track faculty. One member must be outside the Bredesen Center (because all BC faculty are joint, you may list their alternate affiliation). We suggest that Bredesen Center graduate students have five members on the dissertation committee, to be sure that there is sufficient coverage of the guidelines described above. The doctoral committee should meet at least annually to ensure sufficient progress of the graduate student towards a PhD.

Admission to Candidacy

Admission to candidacy indicates that the student has demonstrated ability to accomplish acceptable graduate work and that satisfactory progress has been made toward the degree. This action usually connotes that all prerequisites to admission have been completed and a program of study has been approved. A student requests candidacy by completing and [submitting a form required by the Graduate School](#).

A student may be admitted to candidacy for the doctoral degree after passing the comprehensive examination and maintaining at least a B average (3.0) in all graduate coursework. Students may submit the form as soon as they have passed their comprehensive exam and no later than the semester *before* the semester they plan to graduate. Each student is responsible for completing the Admission to Candidacy form, which lists all graduate courses to be used for the degree, including courses taken at the University of Tennessee or at other institutions prior to admission to the doctoral program (up to 24 credit hours). The doctoral committee signs the Admission to Candidacy form. Students submit the Admission to Candidacy form to the Bredesen Center advisor for review before finally submitting it to the UTK Graduate School.

Doctoral Dissertation Research Credit (ESE 600)

After passing the qualifying exam, students should enroll in ESE 600 - Doctoral Dissertation Research to register their research hours. Once a student begins taking ESE 600 credit, they must take a minimum of three hours every semester thereafter continuously. Once they enroll in ESE 600, they *must* take at least 3 hours consecutively (Spring, Summer, Fall) in order to meet Graduate School requirements for PhD Candidacy. Any request for exceptions typically occur only for a formal Leave of Absence or an internship unrelated to dissertation research and must be submitted to the Graduate School for approval. Students should begin taking ESE 600 at least in the second summer, assuming the successful completion of the qualifying exam during the academic year.

Student Progress Reports

Students are required to complete a self-evaluation and check-in academically and professionally with their Faculty Advisor and Bredesen Center Staff each term using a [Progress Report Form](#). The Progress Report must be submitted at the end of each term (summer, fall, and spring). The purpose of this form is 1) to continue to foster positive communication and expectations between student, advisor, *and* Bredesen Center, 2) to help the Bredesen Center to better support students by recognizing challenges early-on, and 3) to provide our Director more precise information before he submits grades for the ESE 600 “Dissertation Research and Writing” course.

Students fill complete the form according to information from the current term. Once the self-evaluation portion is completed, students must schedule a brief meeting with their faculty advisor to review and discuss the information. There is room on the form for the faculty to provide any relevant feedback regarding the students’ progress this term. After discussing the student’s progress over the term, challenges, and goals for the future—both student and faculty will sign the form before submitting it to the Bredesen Center’s Program Advisor.

Graduate Student Examinations

This section provides a description of the graduate student examination requirements for the PhD degree program. Three examinations are required as part of the doctoral program: qualifying examination, comprehensive examination, and defense of dissertation examination.

Qualifying Exam

A student must pass the qualifying examination to proceed in the PhD program. The qualifying examination is developed, administered, and graded by the Bredesen Center faculty (or designated subset of the faculty) of the PhD program under the coordination of the Bredesen Center Director. This examination must be taken no later than the end of the first year of ESE and DSE graduate studies. Given the research intensive focus of the Energy Science and Engineering and Data Science and Engineering doctoral programs, it is expected that graduates of this program will possess the skills required to investigate and conduct research on a variety of problems. The ESE qualifying exam will test these skills by charging students to prepare a professional quality research proposal to address current important questions in energy science and engineering. DSE students are charged with preparing either a review paper on the topic related to data science and agreed upon by the major professor, or a data analysis with a dataset provided by the major professor or the program director.

Late in the spring semester the ESE faculty will present the first-year students a set of problems relating to various topics of energy science and engineering. Each student must select one of these problems and construct a research proposal to thoroughly investigate the problem. The proposal should include an introduction, a background of the problem, the significance of the proposed study, the methodology that would be used to investigate the problem, and references to back up any claims. The proposal should be around 10-15 pages in length, double-spaced, 12-pt Times New Roman font, and references should follow current APA formatting standards. At the time problems are made available for selection, a due date for the completed written proposal will be announced. **It is the responsibility of the student to organize a time to discuss and defend their proposal to their doctoral committee according to the published deadlines.**

Students taking the DSE Qualifying exam will defend their exam in the DSE 599 seminar during the first week or so of the Fall semester. The DSE Qualifying exam committee is generally designated by the DSE Program Director to sit in on the presentations and offer grades and feedback for the exams.

Once the committee has made its final decision about the result of the examination, the committee must inform the student and the director of the Bredesen Center. In case of failure, the candidate may appeal to retake the examination through the Bredesen Center Graduate Education Committee within 30 days of notification of the result. If the appeal is granted, the student must retake the examination at the next offering. The result of the second examination is final. The successful completion of the qualifying examination grants students permission to engage in ESE 600 dissertation research.

Both ESE and DSE Qualifying Exams include a rubric that can be found on the Bredesen Center website and should be submitted from each committee member along with the student's final exam grade. Deadlines vary each year, but final papers are typically due in early-mid July, while finals presentations should be in late August or early September. Exact dates will be provided to students at the start of the Summer term with thorough instructions regarding their exams.

Comprehensive Examination

The Comprehensive Examination will consist of the student constructing and defending his or her dissertation research proposal to the committee in a format deemed acceptable by the student's Doctoral Committee. Typically, an oral defense is sufficient for this examination, although a written component may be administered at the discretion of the Doctoral Committee.

The exam should be taken at the end of a student's second year or later. The timing should be late enough in a student's academic program to permit most of his/her graduate course work to be covered on the examination, and early enough to permit modification of the student's program based on the results of the exam.

Two requirements must be satisfied *before* a student takes the Comprehensive Examination:

1. A written Dissertation Proposal, approved by the major professor, must be submitted to each member of the student's Doctoral Committee two weeks prior to the examination.
2. Each member of the student's Doctoral Committee must agree that the student is ready to take the Comprehensive Exam. The committee members will communicate to the major professor when they are satisfied that the student is ready to take the Comprehensive Exam.

Once the Comprehensive Examination is passed, the student should file for and be admitted to PhD candidacy. At the discretion of the Doctoral Committee, supplemental reexaminations for the Comprehensive Examination and/or proposed dissertation research may be required. In case of failure, the candidate may not apply for reexamination until the following semester. The result of the second examination is final.

Defense of Dissertation Final Examination

A doctoral candidate must pass an oral examination on the dissertation. The dissertation, in the form approved by the major professor, must be distributed to the committee at least two weeks before the examination. The examination must be scheduled with the Graduate School and must be conducted in university-approved facilities. The examination may be announced publicly and therefore open to all students and faculty members. All members of the doctoral committee administer the dissertation defense after the student completes the written dissertation and all course requirements. The major professor must submit the results of the defense by the dissertation deadline. Please pay close attention to the Graduate School deadlines concerning all dissertation and defense materials in relation to graduation schedules. All [deadlines](#) relative to the dissertation defense and graduation are posted on the Graduate School's website and are updated each semester.

Approved Courses

Due to the interdisciplinary nature of this program, The Bredesen Center does not publish a list of pre-approved courses for the specialization or knowledge breadth requirements. Students should consult with their research mentor the appropriate coursework for their particular academic and research goals. Following these discussions, students should provide the Academic Coordinator and Academic Advisor a copy of their plan each semester for progress and approval. The Bredesen Center Academic Advisor can also assist in locating courses to satisfy the Graduate School requirements.

Graduate Research Assistant

According to the 2018 – 2019 [UTK Graduate Catalog](#): “Graduate Research Assistants/Associates (GRA) perform duties in support of university research, which may or may not relate directly to the students’ thesis/dissertation. A student appointed as a GRA works under the direct supervision of a faculty mentor. Research assistantships may be financed through funds from gifts, grants, contracts, state appropriations designated for research, or the university’s internally sponsored programs. Department heads are responsible for assuring that GRAs receive ample opportunities to make continuing progress toward their degrees. Some departments provide a path for promotion to Graduate Research Associate.”

According to Graduate School policy, GRA positions are not eligible for paid time off. More details and guidelines concerning UTK policy for Graduate Assistantships can be found in the [Graduate Catalog](#) by searching “graduate assistantship”.

Bredesen Center students are expected to communicate with their faculty advisor and BC staff to establish GRA expectations including schedule, training/orientation, format and frequency of communication, etc. In order to help initiate and support this communication, students are required each term to submit a Student Progress Report (See page 10). Additionally, students and advisor’s are encouraged to develop an Individual Development Program (IDP) together to set goals and discuss strengths and weaknesses. A sample IDP can be found through the [UTK Office of Research and Engagement](#).

Every full-time student admitted to the Bredesen Center is considered for a Fellowship including an annual stipend, tuition waiver, and health insurance.

Funding Details

Bredesen Center students that receive fellowship offers have initial funding provided by the Bredesen Center. The fellowship, implemented as a 12-month GRA position, pays a stipend of \$30,000 at \$2,500 per month for 12 months, provides university health insurance, maintenance fees (in-state tuition), and allows out-of-state tuition to be waived by the Bursar’s Office each semester. Each student is expected to transition to funding provided by funded research projects by their first summer. The Bredesen Center will continue to provide partial financial support through the students’ second spring (for students that started the program in the fall semester). Project funding should support the student fully during the first and second summer in the program.

During a student’s first fall and spring, as soon as they begin contributing to funded research, the project funding should cover 25% of the student’s expenses, then transition to 100% for the summer semester. During a student’s second fall and spring, project funding should cover 50% of the student’s expenses, then transition again to 100% for the summer semester. Project funding should cover 100% of the student’s expenses from their third academic year through graduation. Students should plan to graduate by the end of their 5th year.

Extensions beyond the five years will be considered on a case-by-case basis. For funding to renew each year, students must meet the following expectations:

- Must take at least 9 credit hours each fall and spring semester and 3 credit hours each summer
- Must make adequate progress towards PhD degree
- Must adhere to the Student Code of Conduct specified in [Hilltopics Student Handbook](#)
- Must have satisfactory work performance

Current Annual Rates (Fiscal year 2021)	
Salary	\$30,000
Insurance	\$2,208
Tuition	\$17,202

Student funding Cost model					
	Academic Year 1	Academic Year 2	Academic Year 3	Academic Year 4	Academic Year 5
Bredesen Center					
Fall	75%	50%	0%	0%	0%
Spring	75%	50%	0%	0%	0%
Summer	0%	0%	0%	0%	0%
Project Funding *overhead charges may apply					
Fall	25%	50%	100%	100%	100%
Spring	25%	50%	100%	100%	100%
Summer	100%	100%	100%	100%	100%

Internship Policy

The Bredesen Center encourages all our students to seek opportunities that will broaden their experiences including paid internships in corporations, at other national laboratories, or at other universities here in USA and abroad. However, a student must consult and seek approval from the faculty and the Bredesen Center Director through a formal application process to make sure that we are in compliance with the operational procedures of ORNL and UTK. This formal process is designed to ensure the proposed internship will fit into the student's scope of their PhD study as well as the overall goals for student enrichment.

There is also a separate application process, if the student is seeking full or partial funding from the Bredesen Center. Since the funds for internship at Bredesen Center are limited, the application will go through a competitive selection process.

For flexibility and to ensure a speedy approval process, please consult with the Bredesen Center staff so that we can make sure that the center is indeed compliant with rules and regulations of the UT graduate school. Details for this process including the process flow, the student application for BC funding, and the 600-continuous enrollment form can all be found on the Graduate School website: <https://gradschool.utk.edu/forms-central>

International Students should consult with Center for Global Engagement to insure no complications with immigration status. As an international student you will need to have authorization (CPT) in order to engage in any type of off campus practical experience (paid or unpaid). You may not engage in a paid, off campus internship without authorization as this will violate your immigration status. You may familiarize yourself with CPT requirements on the CGE website and by reviewing the CPT seminar in canvas:

<https://international.utk.edu/international-students-and-scholars-services/current-students-alumni/employment/curricular-practical-training-cpt-for-f-1-students/> . This will provide more clarity on what CPT is and how to become eligible. If you have any questions after reviewing this information, please contact CGE. In some cases and with advisor approval, the Bredesen Center may essentially pause charging your contract for any of your time, then resume upon your return from your internship. One thing you'll want to keep in mind if you're offered an internship is whether or not CGE will require you to be registered in any courses to maintain your visa status. They will make this determination when processing your CPT application. If you are required to be registered in credits while on the internship, pausing your contract will mean that your tuition waiver is also on pause. You may be required to pay for any credits out of pocket.

Concurrent Masters

Students may attend to and receive a Masters degree from a department at UTK outside of the Bredesen Center while they are working towards their PhD. The UTK Graduate School policies approve up to 30 credits from UTK to count towards both a Masters and a Doctoral degree. Students may work with the Bredesen Center and their faculty advisor to choose courses that will further their progress in these programs. Students should be diligent to insure that they will meet all requirements designated to each program, including the necessary approval forms to [apply for a Concurrent Masters](#). This form must be signed by designated administrators in each program and submitted to the Graduate School for formal review. Please also provide the Bredesen Center Staff with a copy of the form, so we can better support your success.

Students may *not* complete both the Masters and Doctoral degrees in the same semester. If a student chooses to complete their Doctoral degree in the fall, they need to apply to graduate for their Masters no later than the preceding summer. This is accomplished by completing all necessary paperwork and the online graduation application (link at bottom of My UTK in left column, "Apply to Graduate").

Graduate Student Office Space

The Bredesen Center has limited graduate student office space to assign to individuals in Greve Hall. The prioritization of office space assignments is as follows:

1. First-Year students, as they are, in many cases, not matched with a research group and spending most of their time on campus attending classes.
2. Second-Year students, as space allows, as they are likely splitting their time between classes and their research group location.
3. Third-Years and greater, will be allotted office space, if available, and at the request of their faculty advisors who state why space outside of the research group's location is needed.

Any Bredesen Center student is welcome to work in Greve Hall, if they desire. For those that are not allotted an individually assigned space, they are welcome to request keys to access the study rooms, kitchen, copy room,

and flex office space. While the study room configuration is best suited to group work, the flex office space is intended to provide individual work stations for students and/or faculty to use while in Greve Hall. Users of this space are expected to clear away their personal belongings at the conclusion of each use, and to leave the space clean for the next user.

In compliance with University policy to insure social distancing during covid-19, study rooms are available upon reservation. Please use the following link for instructions:

<https://sites.google.com/utk.edu/bredesencentersharedstudentspa/home>

Updates

This section provides a running list of updates to the Student Handbook, including the relevant section updated and the date the revision was published. This list begins with updates made between the 2019 and 2021 revisions of the Student Handbook.

- Updates from March 2021
 - Addition of “Funding Details” under Graduate Programs section. See page 12
 - Addition of “Concurrent Masters” Policy under the Graduate Programs Section. See page 14
 - Updated “Department Contacts” to reflect promotions and additions to staff. See page 5
 - Addition of “Doctoral Degree Time Limit” Policy under Graduate Program Section. See page 6
 - Addition of Study Room Reservation policy under Graduate Student Office Space Section. See page 15
 - Addition of “Updates”. See page 15
 - Removal of “Partners” Section to remove unclear information or outdated positions.

About Former Governor Bredesen

The Bredesen Center for Interdisciplinary Research and Graduate Education works under the University of Tennessee-Knoxville and in collaboration with Oak Ridge National Lab, University of Tennessee-Health Science Center, and University of Tennessee-Chattanooga.

The Bredesen Center is named in honor of Governor Phil Bredesen, who served Tennessee from 2003 to 2011, in recognition of his leadership in education and economic development for the state. In addition, his commitment to the Bredesen Center, Governor Bredesen's vision for capitalizing on the great potential of the UT-ORNL partnership resulted in the UT-ORNL Governor's Chairs program, the UT Biofuels Initiative, the Volunteer State Solar Initiative, and the UT-ORNL Joint Institutes for Computational Sciences, Biological Sciences, and Neutron Sciences.



Appendix

SUMMER 2019 Graduate Student Self-Evaluation

Please submit a copy of this completed form, along with an up-to-date curriculum vitae/resume, to Allie Burns (aburns@utk.edu) by Wednesday, July 31, 2019. All information included below should be **for 2019 only, from May 2019 to July 2019**.

Name:

Program and cohort year:

Research Area:

Advisor:

Date of Qualifying Exam:

Date of Comprehensive Exam:

Title of dissertation, if applicable:

Anticipated graduation date (month, year):

Research or Academic Progress over the last term (describe work and offer grade you feel you deserve):

Research plans/goals for the upcoming term (max 300 words):

Are you still on-track concerning the plan/schedule for your dissertation research? Yes ___ No ___
If not, describe how you plan to address this.

Optional commentary on accomplishments and/or challenges in the past year (max 300 words):

Advisor Feedback: Please provide a grade for the student's research progress for this Term (Pass/Fail) and any additional comments and suggestions for the student.

Student Signature: _____

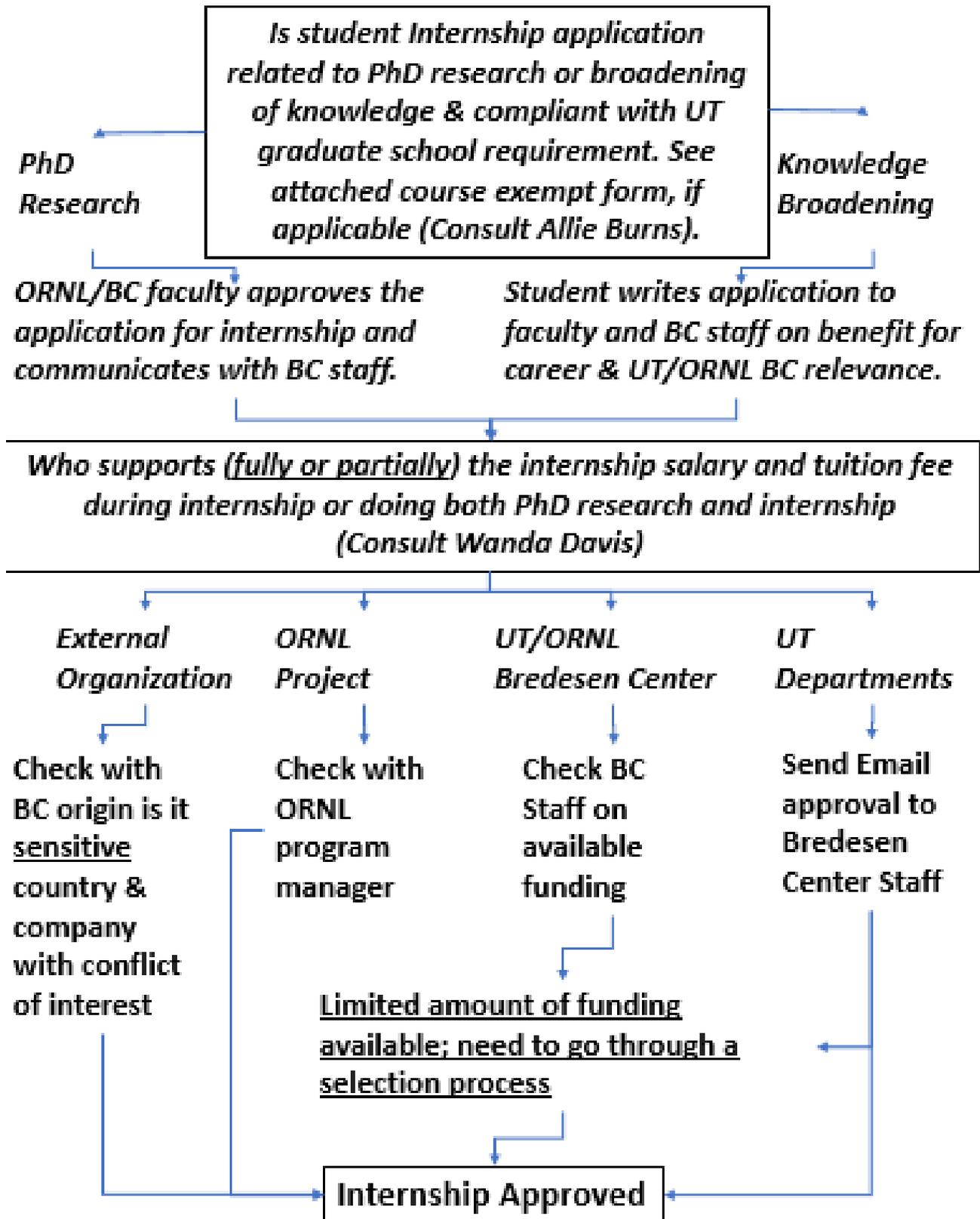
Date: _____

Advisor Signature: _____

Date: _____



Bredesen Center (BC) Internship Approval Process



Application for the funding of student internship from Bredesen Center

(please submit this form at-least one month ahead of your internship application deadline, also attach your 2-page resume to this application)

Student Name:

(A) Current status of the student:

Years at Bredesen Center:

Qualifier Completed? Yes No

Thesis Proposal Completed? Yes No

Estimated time for completion of PhD Degree:

PhD Thesis/PhD Advisor/Mentor Name:

In what Knowledge Breadth Track(s) are you involved? Please describe.

PhD Thesis Committee:

(B) Details of Previous Internship

Have you done any internship before? Yes No

If, yes, who funded your internship? External ORNL UT/Bredesen

Dates of the internship: From To

Outcome of the internship (briefly, e.g. experience, products papers, policy papers, etc.)
