



# Student Handbook

Fall 2020



BOISE STATE UNIVERSITY

## Welcome

Welcome to the Biomedical Engineering (BME) Ph.D. Program. Boise State's BME is an interdisciplinary program that seeks to integrate knowledge from diverse scientific fields to solve biomedical problems that span from whole body and organ systems to molecular interactions. The BME program brings together a diverse group of faculty from the Departments of Biological Sciences, Community and Environmental Health, Electrical and Computer Engineering, Kinesiology, Materials Science and Engineering, Mechanical and Biomedical Engineering, and Physics. By building a program that leverages faculty expertise across campus, this doctoral program aims to produce researchers who can work seamlessly across disciplines to develop innovative solutions to improve human healthcare and well-being.

The program is designed to give students the technical skills and fundamental knowledge to address significant challenges related to human health, and gain expertise across the diverse scientific fields necessary for success in the biomedical industry. Successful graduates of the BME Ph.D. Program will:

- Master knowledge in their research area.
- Design and conduct independent research using scientific methods.
- Effectively communicate scientific findings.
- Make meaningful contributions to the scientific literature.
- Work effectively in transdisciplinary teams.
- Demonstrate proficiency to solve significant problems of healthcare importance.

Information regarding the application and admissions process can be found online at <https://www.boisestate.edu/bme/admissions/>.

This handbook is a resource for BME students and supplements the Graduate Catalog, which details university resources, regulations and processes for students and graduate programs. Together, the Student Handbook and the Graduate Catalog articulate the academic life cycle - from admissions to degree completion. Students are responsible for understanding and following the policies and procedures outlined in the Student Handbook and the [Graduate Catalog](#), as well as in the [Boise State University Policy Manual](#), and the [Student Code of Conduct](#). Further student and research expectations are defined by each research advisor.

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## People

### *Leadership Team*

The leadership team for the BME PhD program consists of a program director, an associate program director, and a program administrator. The following is the current leadership team:



Dr. Trevor Lujan  
Program Director  
[trevorlujan@boisestate.edu](mailto:trevorlujan@boisestate.edu)  
(208) 426-2857  
RUCH 235



Dr. Tyler Brown  
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(208) 426-5613  
BGYM 108E



Ashley Holden  
Program Administrator  
[bmephd@boisestate.edu](mailto:bmephd@boisestate.edu)  
208-426-4095  
RUCH 201

### ***Main Office and Administrative Staff***

The program administrator for the BME PhD Program is available to provide support in the following areas throughout the duration of your degree:

- Hiring paperwork
- Travel documentation
- Purchasing (lab materials, supplies, equipment, chemicals, etc.)
- General office support.
- Work/study space assignment

The BME program administrator is located in the main office of the Mechanical and Biomedical Engineering Department, which is located in the RUCH Engineering Building room 201.

### ***Research Advisor***

Your research advisor is your primary mentor and will be actively engaged in your academic, research, and professional success. He or she will provide guidance on your dissertation topic, guide your research efforts, provide direction on your academic plan and may potentially provide funding support. Frequent interaction between you and your research advisor is encouraged. It is both the responsibility of the student and the research advisor to have regular meetings and to communicate effectively.

All BME students need to identify a research advisor willing to supervise their doctoral research, and will need to meet the expectations of their research advisor in terms of hours dedicated to research and job performance.

## Before You Begin

To provide a smooth transition into the Ph.D. in BME, please take time to do the following:

### ***On your own***

#### My.boisestate.edu account

When your application was originally processed, you received a notification letter from the Graduate College containing your username, student ID Number, and Boise State email address. Set up your my.boisestate account by going to my.boisestate.edu using the login information provided in the letter.

My.boisestate.edu is your source for all of your campus information. You can access your email, calendar, course websites, student center, and much more through this portal.

#### Email

Boise State students receive email via BroncoMail. Your BroncoMail address is typically your first and last name followed by @u.boisestate.edu. As a graduate assistant, you will also receive an employee email address. Employee email addresses are typically the employee's first and last name followed by @boisestate.edu. Employee email accounts are immediately deactivated if your employment is suspended (e.g., you receive a fellowship or there is any lapse in your funding). *Thus, we recommend that you use your BroncoMail email account as your primary account and forward your employee email to your BroncoMail account. You are responsible for checking both accounts.*

#### Housing

Ample housing options are available near campus. You can work with [University Housing](#) for on-campus options if you apply early. [The Boise Chamber of Commerce](#) has information and resources about moving to Boise that may be helpful. If you are using Craigslist or Classified Ads, common searches for housing near the university (less than 3 miles away from campus) include BSU, Downtown Boise, East End, North End, the Bench, and Southeast Boise. Peruse the bulletin boards in the Student Union Building (SUB) if you are already on campus.

### ***With your Research Advisor and the Program Director***

Coordinate your start date with your research advisor or the Program Director. Most students will start one week before the first day of classes of the designated

semester. If you and your advisor determine an earlier start date, please notify the program director as soon as possible.

#### Discuss first semester courses & register online

As soon as possible, you should register for classes. In order to make informed decisions on the courses you register to take, it is advised that you put together a graduate course plan and discuss this plan with your research advisor.

To register for classes, use the student center on [my.boisestate.edu](http://my.boisestate.edu). Instructions are found online on the [registrar's website](#).

### ***After you arrive on campus***

#### Introduce Yourself

In addition to meeting with your research advisor and new labmates, please stop by the main office, RUCH 201, to say hello and meet the office staff. They can provide information about keys, parking, purchasing, room and building access, timecards, travel, mail, making copies etc.

#### Complete your employment documents (for students on graduate assistantship)

Some items (Federal Form I-9, Employee Information Form) must be completed on or before your first day of employment. Other items (W-4 Tax Form, Direct Deposit, and Compliance Certification) must be completed immediately after you begin employment. Check the [Boise State New Employee website](#) for a complete listing of immediate action items. Please be aware that the hiring process does include a background check.

**\*\*Note:** Tax rates on paychecks will fluctuate throughout the year. During the summer (or anytime you are not enrolled as a student), taxes are withheld at a higher percentage than during periods of student enrollment. **\*\***

#### Obtain your Boise State University identification, the "BroncoCard"

After completing your employment documents at Human Resources, take your Student ID # and valid photo ID to the BroncoCard office in the Student Union Building to obtain your BroncoCard. Be sure to request a proxy BroncoCard. Your BroncoCard gives you card reader access to select laboratories and study areas. You will use your BroncoCard to access the Recreation Center, purchase meal plans, and can also, optionally, make cashless purchases on campus.

[Find out more about obtaining your BroncoCard](#)



Purchase a Parking Pass if you plan to park on campus

Parking on University Drive and other city-maintained streets is permitted without a Boise State parking permit. Signs posted on city-maintained streets describe any restrictions. Otherwise, parking on campus requires a Boise State parking permit.

[You can purchase your parking permit](#) and find out more about transportation options online.

## **Expectations**

When you come to Boise State, we agree to offer our time and resources in exchange for your commitment to make your best effort. This includes making satisfactory performance and progress towards your degree. To ensure transparency of expectations, the BME program, Graduate College, and University have policies in place with which you should be familiar. These policies are outlined in this handbook, [Boise State University Policies](#), [Student Code of Conduct](#), [Graduate Catalog](#), [Graduate College Policy and Procedure Manual](#), and [Standards and Guidelines for Theses and Dissertations](#). Please take the time to read and understand these policies.

If questions arise that are not addressed within this handbook or the policies outlined by Boise State University and the Graduate College, students are encouraged to first meet with their Research Advisor. If still unresolved, please contact the BME Program Administrator or the BME Program Director for further assistance. Similarly, if a student has a grievance about the program or an individual, the student should immediately contact their research advisor, associate director, or program director, as appropriate.

## ***Safety***

The safety of students, staff, faculty and visitors is of paramount importance to the Biomedical Engineering Ph.D. program. All students must comply with University policies and all regulations and procedures while working inside and outside of laboratories.

## ***Academic Integrity***

Academic Integrity is a core belief of the Biomedical Engineering Ph.D. Program, the Graduate College and Boise State University. Cheating, plagiarism, and academic dishonesty in the classroom or in research endeavors are serious offenses that will be addressed. All forms of academic dishonesty can lead to suspension or expulsion from the University. The University [Academic Integrity Policy](#) can be found on the registrar's website.

## ***Professionalism***

A core mission of the BME program is to create a respectful culture that fosters a productive and positive learning environment. Towards this mission, students and faculty in the Biomedical Engineering Ph.D. program are expected to act in a professional, responsible, and courteous manner at all times. Inappropriate conduct by

students is cause for disciplinary action, up to and including suspension and expulsion from the University.

### ***Non-Discrimination on the Basis of Disability***

Boise State University has issued a notice of Non-Discrimination on the Basis of Disability, which can be viewed [here](#). As required by Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (ADA), and the regulations set forth at 34 CFR 104.7, 34 CFR 104.8, and 28 CFR 35.107, it is the policy of Boise State University not to discriminate against individuals in its programs or activities on the basis of physical or mental disability. Boise State University's NonDiscrimination Policy, which includes the University's grievance procedures, can be found at this [link](#). Qualified students who require disability-related services or accommodations are encouraged to contact the University's Disability Resource Center, located in the Lincoln Garage on the University's Main Campus, or by telephone at 426-1583. Information concerning services provided by the Educational Access Center can be found on its [website](#).

Other individuals requiring disability-related services or accommodations, or, who have questions or concerns related to the University's obligations described in this notice are encouraged to contact the University's Interim 504/ADA Coordinator, located in Room 306 of the River Front Hall on the University's Main Campus, or by telephone at 426-1238.

## Values

### *University's Statement of Shared Values*

Boise State University is committed to personal and social development, educational excellence, and civic engagement. Membership in the campus community is a privilege and requires its members to conduct themselves ethically with integrity and civility. Campus community members enjoy the same rights and freedoms that all U.S. citizens enjoy, including personal responsibility for one's own conduct, behavior and speech.

Academic Excellence – engage in our own learning and participate fully in the academic community's pursuit of knowledge.

Caring – show concern for the welfare of others.

Citizenship – uphold civic virtues and duties that prescribe how we ought to behave in a self-governing community by obeying laws and policies, volunteering in the community, and staying informed on issues.

Fairness – expect equality, impartiality, openness and due process by demonstrating a balanced standard of justice without reference to individual bias.

Respect – treat people with dignity regardless of who they are and what they believe. A respectful person is attentive, listens well, treats others with consideration and doesn't resort to intimidation, coercion or violence to persuade.

Responsibility – take charge of our choices and actions by showing accountability and not shifting blame or taking improper credit. We will pursue excellence with diligence, perseverance, and continued improvement.

Trustworthiness – demonstrate honesty in our communication and conduct while managing ourselves with integrity and reliability.

To view the entire Statement of Shared Values please see the website found at <https://www.boisestate.edu/president/values/statement-of-shared-values/>

## **Interdisciplinary Program Structure**

The Biomedical Engineering Ph.D. program is an interdisciplinary program that brings together a diverse group of faculty from the College of Health Sciences, the College of Engineering, and the College of Arts and Sciences. Departments involved in this program include Biological Sciences, Community and Environmental Health, Electrical and Computer Engineering, Kinesiology, Materials Science and Engineering, Mechanical and Biomedical Engineering, and Physics. As a transdisciplinary Ph.D. program that spans numerous departments and multiple colleges, the BME program is housed in the Graduate College. By building a program that leverages faculty expertise across campus, this doctoral program aims to produce researchers who can work seamlessly across disciplines to develop innovative solutions to improve human healthcare and well-being.

## Resources

### ***Program Administrator***

Ashley Holden is the Program Administrator for the BME program. Her office is located in the RUCH Engineering Building, room 201. You can contact her via email at [bmephd@boisestate.edu](mailto:bmephd@boisestate.edu), or by phone at 208-426-4095.

### ***Website***

The Ph.D. in BME website: <https://www.boisestate.edu/bme/> contains student resources including program specific forms, emphasis area requirements, and contact information for all participating faculty and staff.

### ***IT Support and Supplies***

IT support, office supplies, and other resources can be obtained through your major advisor's department. Please ask your advisor who to contact.

### ***Graduate Student Association***

The Graduate Student Association (GSA) is a student-run organization that aims to create a sense of community among graduate students of all disciplines at Boise State. The GSA's goal is to bring together students from diverse programs and backgrounds for networking, discussion, and collaboration.

## Navigating your Degree

Our staff in the BME Ph.D. program are here to help each student navigate the academic program efficiently and effectively. To help ensure that you stay on your desired schedule for graduation, we encourage you to use the following resources.

**Course Plan.** This form should be completed during your first semester with the help of your Research Advisor and should be returned to the Program Administrator. It helps establish a plan for coursework and degree milestones.

**PhD Degree Checklist.** This checklist shows all degree requirements for your program, as described in this handbook, in an easy-to-use one page format.

**Progress Report.** This report should be completed with your Research Advisor at least once a year. It helps evaluate progress in the program and is key to ensuring you are succeeding in your degree plan.

**Satisfactory Progress Policy.** When a BME student's research advisor finds that they are not making satisfactory progress towards their degree and that satisfactory progress cannot be anticipated, a performance plan should be created by the research advisor, according to the following steps:

Inform the student of the concerns. The research advisor will create a written performance plan with the student to develop a timeline for making satisfactory progress and inform the student of the potential consequences if their progress towards completion is not satisfactory. The performance plan should be written, signed by both the supervisor and the student, and provided to the student.

Provide the student feedback. The research advisor will keep in contact with the student to give feedback during the plan timeline and document such contacts (written, email, or otherwise) and their outcomes.

Final Recommendation. At the end of the timeline, if progress is not adequate, the research advisor may recommend dismissal from the program. The recommendation should be sent to the Program Director and the Dean of the Graduate College, and should include documentation of the steps that have been taken with justification for the dismissal from the BME program.

The recommendation must be referred to the Program Director and the Dean of the Graduate College for final action. Any student that has been dismissed from the BME

program for failure to make satisfactory progress may appeal the decision using the Graduate College Appeals Policy.

The course plan, degree checklist and progress forms can be found on the program website at <https://www.boisestate.edu/bme/current-students/forms/>.



## Program Requirements

The program leading to the Ph.D. in Biomedical Engineering is a dissertation-based program. In total, the BME program requires a minimum of 63 credits representing advanced coursework (30 credits) and dissertation research (33 credits) constituting an original and significant contribution to the discipline.

Selecting coursework for your graduate degree should take into account your research goals and future career plans. Beyond the required core coursework, significant flexibility is available for students to create a degree plan that meets their needs with tracks of study. There are multiple tracks of study that students can select for specialization. Students are expected to take three approved courses (9 credits) within their track of study. Further descriptions for each track can be found on the [BME website](#) and the current list of approved courses for each track is delineated in [Appendix A](#).

## Degree Requirements

Doctor of Philosophy in Biomedical Engineering	
<i>Course Number and Title</i>	<i>Credits</i>
Core Requirements Select one course from each of the following areas, or alternative course(s) as approved by the program coordinator: Engineering KINES 520/ME 520 Advanced Biomechanics Life Sciences KINES 510 Physiology of Activity KINES 560 Motor Learning ZOOL 501 Human Physiology Research Methods EEB 603 Reproducible Science BIOL 601 Biometry KINES 551 Research Design in Exercise and Sport KINES 552 Applied Statistical Methods	9-10
Track Courses Track courses approved by the program coordinator and the student's advisor.	9
Elective Courses Elective course(s) approved by the student's advisor.	3
BME 598 Graduate Seminar Enrollment in two semesters of Graduate Seminar is required.	2
BME 601 Graduate Professional Development	1
BME 689 Dissertation Proposal	1
BME 691 Doctoral Comprehensive Examination	2
BME 696 Directed Research	3
Culminating Activity BME 693 Dissertation	33
Total	63-64

### Transfer courses

Graduate coursework can be transferred to Boise State University and applied for credit to the Biomedical Engineering Ph.D. program requirements in accordance with Graduate College policy. Instructions for transfer courses can be found [here](#).

Students with a master of science degree in a related field may transfer up to 21 credits toward the Ph.D. program degree requirements. For a student entering with a bachelor of science degree in a relevant field, a maximum of 9 credits of graduate coursework may be applied toward the Ph.D. program degree requirements. In all cases, the transfer credit must meet Graduate College requirements and be approved by the Program Director. Transfer credit accepted into the program will be applied on a course-by-course basis toward the degree requirements.

## **Transfer Credit Procedures**

Students with an MS or BS from a school other than Boise State: Students must submit a Request for Approval of Transfer Credits, available on the [Graduate College Forms page](#).

Students with an MS from Boise State: Students should meet with their advisor or the program director to determine what degree requirements have been met as part of their MS degree and should be included on the student's course plan.

MS courses from Boise State being used to meet Ph.D. degree requirements do not need to be submitted for approval through the Graduate College and are instead included on the Application for Admission to Candidacy.

Students with a BS from Boise State: The procedure is the same for students with an MS from Boise State, however, students may only apply a maximum of 9 credits of graduate coursework taken as an undergraduate.

## ***Supervisory Committee***

Your Supervisory Committee is charged with general guidance and mentorship, including design and approval of the program of study, supervision of the dissertation, and participation at your proposal and final defense. The Supervisory Committee consists of a research advisor who acts as chair, and at least two, but no more than three additional members. At least two members of the committee must be faculty participating in the Biomedical Engineering program, including at least one committee member must be from the life sciences (i.e. COHS or COAS) and at least one committee member must be from engineering (COEN). Biomedical Engineering faculty members must be University regular or research faculty and members of the Graduate Faculty. The committee members are selected by the student and the research advisor and approved by the program director. A complete list of [faculty](#) affiliated with the Biomedical Engineering Ph.D program can be found on the program's website.

You should form your supervisory committee through consultation with your research advisor and submit an Appointment of Supervisory Committee form, available on the Graduate College [forms page](#), to the Graduate College once research toward your dissertation has commenced. A change in the membership of the supervisory committee can be made after initial appointment by submitting an updated Appointment of Supervisory Committee form.

You should formally meet with the entire Supervisory Committee at least once each year to report progress, receive feedback, and discuss future plans.

## ***Comprehensive Examination***

The objective of the comprehensive examination is to judge depth and breadth of knowledge in the biomedical engineering field, and to prepare students for writing grant proposals. The student must enroll in BME 691 Doctoral Comprehensive Examination for the semester during which they plan to take the comprehensive exam. Students are eligible to take the comprehensive exam after completing all core course requirements and track course requirements.

More information on the comprehensive exam can be found in [Appendix B](#).

## ***Dissertation***

The dissertation must be the result of independent and original research by the student and must constitute a significant contribution to the current knowledge in the biomedical field, equivalent to multiple peer-reviewed publications. The dissertation typically includes three or more peer reviewed publications written by the candidate that have been published in peer-reviewed journals, or are currently under review, as well as introductory and concluding chapters. The style and format of the dissertation must conform to the standards of the Graduate College.

***Dissertation Committee:*** The Dissertation Committee is charged with final approval of the dissertation. The Dissertation Committee consists of the Supervisory Committee and one member that must be external to the Biomedical Engineering faculty. External committee members may (and are encouraged to) be external to Boise State University when such appointments enhance the function of the committee. The dissertation committee participates in the proposal and defense.

## ***Dissertation Proposal***

The objective of the dissertation proposal and oral defense is to assess the suitability of a PhD student to conduct research in the biomedical field in a manner that meets rigorous peer-reviewed standards. Satisfactory completion is required for you to become a PhD candidate. The dissertation proposal should be presented within one year of satisfactory completion of the comprehensive examination and typically approved by the dissertation committee one year before the dissertation defense.

Please refer to [Appendix C](#) of this handbook for further details and instructions.

## ***Admission to Candidacy***

Upon completion of the dissertation proposal and receipt of the signed Approval / Disapproval statement from the dissertation committee, you are eligible to complete an

[Application for Admission to Candidacy](#). Once this application is accepted by the Graduate College, the student becomes a Ph.D. Candidate. The Graduate College strongly recommends that the AAC be submitted when the student has finished approximately half of the degree requirements.

Once admitted to candidacy, it is expected that the student will proceed with the research outlined in the proposal defense. Major deviation from the proposed research requires majority approval of the supervisory committee.

### ***Dissertation Defense***

A public defense of the dissertation is scheduled after the dissertation committee has reviewed a draft that is considered to be a nearly final version. The date of the defense is determined jointly by the dissertation committee and the student and must be consistent with any guidelines provided by the Graduate College. The first part of the defense will be a public oral presentation of the dissertation. The second part will be an oral exam administered by the dissertation committee who will decide whether the student passes or fails the defense. A student who fails the defense may be permitted to try again but failure a second time will result in dismissal from the PhD program.

**Final Approval:** Majority approval of the Dissertation Committee is required to pass the defense. If the defense is completed with a result of pass, the Dissertation Committee prepares a statement describing final requirements such as additions or modifications to the dissertation and any additional requirements such as archival of data. When these requirements have been met to the satisfaction of the Dissertation Committee, the approval page of the dissertation is signed by the members of the committee.

Please refer to [Appendix D](#) of this handbook for further details and instructions.

### ***Graduate Faculty Representative***

PhD candidates, in consultation with their Research Advisor are responsible for identifying a Graduate Faculty representative (GFR) for their supervisory committee and are required to nominate the GFR on their *Appointment of Supervisory Committee* form. The GFR at Boise State University serves as a symbol of campus-wide fairness, upholds the rigor of the graduate process, and is an impartial representative of the Graduate College to the doctoral student and their supervisory committee.

The GFR, as a non-voting member of the supervisory committee, does not count towards any Graduate College supervisory committee composition policies. The GFR is not expected to participate in the doctoral candidate's dissertation work or to meet with the full supervisory committee during the candidacy period. During the final oral defense

procedure the GFR conducts all three parts of the oral examination according to procedures established by the Graduate College.

The GFR must be a member of the Graduate Faculty, cannot be an Affiliate, Adjunct or Emeritus member of the Graduate Faculty, and cannot be a member of the Graduate Program (or affiliated programs in the case of interdisciplinary programs) that is granting the doctoral degree. It is strongly encouraged that doctoral candidates invite GFRs from outside of their Colleges. The Graduate College maintains a list of [Approved Graduate Faculty](#) from which the doctoral candidate may identify potential GFRs to contact.

Due to the length of many candidacy periods, a doctoral candidate may need to identify a replacement GFR, should the GFR become unable to serve for any reason. This replacement will not impact the candidate’s progress, defense, or status at Boise State University – however, the candidate will be expected to identify a replacement GFR, following the same process identified above.

When a candidate is ready to defend his or her dissertation, the full supervisory committee, including the GFR, should be consulted in order to find a defense day/time/location that is amenable to all members of the supervisory committee.

### ***Program Timeline***

Your Research Advisor and Supervisory Committee determine your program timeline. The Ph.D. program is expected to take between 4 and 5 years, but this can vary based on student background, research project, and any number of other variables. All program requirements must be started and completed within a single continuous interval of no more than ten years.

The following table summarizes recommended milestones for full-time PhD students who are admitted with a Bachelor’s degree.

<b>Year</b>		<b>Milestone</b>
<u>Year 1</u>	<u>Semester 1</u>	Complete a degree plan and submit it to the Program Administrator. Include credits of graduate courses that are being requested to be applied to the Ph.D. program degree requirements
	<u>Semester 2</u>	Complete provisional requirements for regular admission status, if applicable
<u>Year 2</u>	<u>Semester 3</u>	Submit the Appointment of Supervisory Committee Form.

	<u>Semester 4</u>	Complete the majority of coursework, and take and pass the Comprehensive Examination
<u>Year 3</u>	<u>Semesters 5 &amp; 6</u>	Conduct research and prepare Dissertation Proposal
		Successfully defend the Dissertation Proposal, and complete the Application for Admission to Candidacy Form
<u>Year 4 +</u>	<u>Semesters 7 &amp; 8+</u>	Conduct research and prepare dissertation
		Take and pass the dissertation defense, and submit final approved dissertation

The following table summarizes recommended milestones for full-time Ph.D. students who have earned a Master of Science in a related field.

<b>Year</b>		<b>Milestone</b>
<u>Year 1</u>	<u>Semester 1</u>	Complete a degree plan and submit it to the Program Administrator. Include credits of graduate courses that are being requested to be applied to the Ph.D. program degree requirements.
	<u>Semester 2</u>	Complete the majority of coursework, and submit the Appointment of Supervisory Committee Form
<u>Year 2</u>	<u>Semester 3</u>	Take and pass the Comprehensive Examination, and conduct research and prepare Dissertation Proposal
	<u>Semester 4</u>	Successfully defend the dissertation proposal and complete the Application for Admission to Candidacy Form
<u>Year 3/4</u>	<u>Semester 5+</u>	Conduct research and prepare Dissertation

		Take and pass the dissertation defense, and submit final approved dissertation
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## **Graduate Assistantships**

Unless supported through other means, all full-time Ph.D. students are financially supported by a graduate assistantship. A Graduate Assistant (GA) is a Ph.D. student financially supported by a graduate assistantship under the mentorship of a Research Advisor. A primary part of a GA's professional development includes assisting their Research Advisor with research responsibilities (i.e. a research assistant). Research responsibilities will vary based on advisor and project. Graduate assistantships are governed by [University Policy 7170](#).

During the academic semester, a GA is compensated for an average of 20 hrs per week (for a total of 1000 hours per year). Effort above and beyond the 20 hours is considered professional and academic development for things such as dissertation research and writing, as well as coursework. During breaks (i.e. fall break, spring break, summer break), GAs work on average 40 hrs per week.

### ***Assistantship Termination or Reduction***

To maintain your Graduate Assistantship you must comply with all policies, procedures and timelines outlined in this handbook, your assistantship contract with your Research Advisor, and the policies of Boise State University and the Graduate College. A Graduate Assistantship may be terminated or reduced at any time by the program for just cause such as unsatisfactory performance of assigned duties, dereliction of duties, unprofessional or inappropriate behavior, insubordination, unsatisfactory academic performance, unsatisfactory progress toward the degree, a felony conviction, or for any other cause of similar magnitude as determined by the graduate program and the Dean of the Graduate College.

### ***Vacation***

Vacation must be approved by your research advisor. Make requests for vacation in accordance with the requirements provided to you by your research advisor.

### ***Leave of Absence for Graduate Assistants***

You must be continually enrolled in the program and making satisfactory progress to maintain your Graduate Assistantship. If you cannot maintain continuous enrollment in any given semester, you may apply to the department for an official leave of absence. Official leaves of absence will be reviewed on a case-by-case basis. Your assistantship may be affected by an official leave of absence. Although we cannot guarantee availability, we will attempt to provide you an assistantship upon your return.

## **The Unexpected**

As you pursue your graduate degree, it is likely you will encounter something, either major or minor, that is not addressed in this handbook. As you encounter these unexpected moments, we encourage you to meet with your research advisor, the program administrator or program director as appropriate and as soon as possible. We will work with you to find the solution, experience, or opportunity that best fits your unique situation.

## **Appendix A – Approved Track Courses**

### ***Biomaterials***

Approved courses include, but are not limited to, the following:

ECE 500 Applied Electromagnetics  
ECE 603 Plasma Engineering  
ECE 557 Digital Image Processing  
VIP 500 Plasma Medicine and Agriculture  
MSE 602 Survey of Materials Science  
MSE 577/ME577 Biomaterials  
PHYS 523 Physical Methods of Materials Characterization  
MSE 574 Soft Materials  
MSE 545 Nanoscale Processing  
PHYS 520 Nanobiotechnology

### ***Biomechanics***

Approved courses include, but are not limited to, the following:

ME 510 Continuum Mechanics  
ME 576 Advanced Dynamics  
ME 570 Finite Element Methods  
ME 597 Failure Mechanics  
KINES/ME 525 Laboratory Techniques in Biomechanics

### ***Human Performance***

Approved courses include, but are not limited to, the following:

KINES 506 Sports Nutrition  
KINES 515 Exercise Physiology Lab  
KINES 540 Applied Principles of Conditioning  
KINES 545 Clinical Exercise Physiology and Prescription  
KINES 580 Selected Topics in Hyperbaric Physiology  
KINES/ME 525 Laboratory Techniques in Biomechanics

### ***Mechanobiology***

Approved courses include, but are not limited to, the following:

ME 602 Mechanobiology  
ME 570 Finite Element Methods

ME 550 Advanced Mechanics of Materials  
BIOL 597 Genomics and Bioinformatics  
PHYS 523 Physical Methods Of Materials Characterization

## Appendix B - Comprehensive Exam Guide

### ***Explanation***

The purpose of the comprehensive exam is to judge depth and breadth of knowledge in the biomedical engineering field. The comprehensive exam includes a written and oral component.

### ***Elements***

The comprehensive exam comprises three elements:

1. Track core courses. The purpose of this requirement is for the students to have a breadth of knowledge and practical understanding in their particular area of specialization.
2. Written Examination. The written component requires the student to demonstrate a comprehensive understanding and synthesis of peer-reviewed literature in their emphasis area, and critical thinking to construct a grant proposal to fill this gap.
3. Oral Examination. The purpose of this requirement is for students to present their study design to their supervisory committee and be able to justify the decisions made in the formulation of their study, demonstrate an understanding of the limitations of their study, and competently address questions from the committee.

### ***Registration***

The student must enroll in BME 691 Doctoral Comprehensive Examination for the semester during which they plan to take the comprehensive examination. All credit requirements in the emphasis area must be completed prior to enrolling in BME 691.

Your comprehensive exam committee will be the same as your Supervisory Committee. Students must identify their supervisory Committee, and submit the [Appointment of Supervisory Committee form](#) to the graduate college, before enrolling in BME 691.

### ***Track Courses***

Before taking the comprehensive exam you must **earn a B or better** in the three approved courses for your track of study. These courses must be completed prior to enrolling in BME 691 Doctoral Comprehensive Examination.

### ***Written Examination***

The written component requires the student write a novel grant proposal. This grant proposal must follow the formatting requirements of an agency that funds research in biomedical engineering. A list of acceptable agencies will be provided by the supervisory committee. The aims of the proposal cannot overlap with the student's dissertation project, but can be in a similar field of study and/or synergistic with their dissertation work.

Students may receive feedback from the major advisor prior to formal submission of the written comprehensive examination. However, the grant proposal should be your own work. You will be asked to sign an affirmation that confirms that the work is your own and does not reflect an act of plagiarism. The affirmation form can be found on the program website at <https://www.boisestate.edu/bme/current-students/forms/>.

### ***Oral Examination***

The format of the oral examination consists of a 30 minute public presentation of the student's grant proposal, followed by a public question and answer session. This will be followed by a closed-door period of questioning by the examination committee based on content in the grant proposal, only the committee members may attend the closed-door session. After the examination, the student will be asked to leave, and the committee will discuss and vote on the student's performance on the grant proposal and oral presentation. Only the committee members may attend the closed-door session.

The oral presentation is scheduled two weeks after the date the student submits the grant proposal. However, if this is not possible to schedule within two weeks, it should be scheduled at the earliest convenience of the committee. It is the student's responsibility to schedule the oral presentation by contacting the committee and reserving a room.

The examination is chaired by the student's research advisor. All members of the examining committee are expected to be present throughout the oral examination.

Print a copy of the Comprehensive Exam Approval Form and take it with you. The form can be found on the program website at:

<https://www.boisestate.edu/bme/current-students/forms/>.

Your committee will complete the Comprehensive Exam Approval Form and present it to you for review and your signature. Please return the completed form to the Program Administrator.

### ***Evaluation***

The written and oral elements will be evaluated by the student's supervisory committee.

The grant proposal must be submitted to the committee two weeks before the oral presentation. At the oral presentation the student will present the grant proposal and answer questions. The student passes the comprehensive examination when all members of the examination committee approve all elements of the student's comprehensive exam. After completion of the oral presentation, the result on all elements of the exam will be reflected in a pass/fail grade assigned by the research advisor in BME 691.

The student is responsible for scheduling the oral exam, providing the [Comprehensive Exam Approval](#) form to the examination committee, and submitting the completed form to the program administrator.

### ***Failure of the Comprehensive Exam***

Per the graduate student catalog, students that fail their first attempt at any element of the comprehensive exam may be granted a second attempt of that element. Students who fail any portion of the comprehensive exam must submit the Report of Failure of Comprehensive Examination form - found on the Graduate College website: <https://graduatecollege.boisestate.edu/forms/> within 5 working days of being notified of their failure.

If retaking any portion of the exam students must submit the Request to Retake the Comprehensive Exam form, found on the program website: <https://www.boisestate.edu/bme/current-students/forms/> within 5 working days of being notified of their failure.

**Requests to retake the comprehensive exam must be submitted by the student in writing to the BME Program Director and must be made within 5 business days of being notified of his or her failure of the exam.**

If the request to retake is approved, then the second attempt of the failed elements of the exam must be submitted before the end of the following semester, not including summer, after receiving the exam results.

If the student does not submit a second attempt prior to the end of the semester following the initial failure, or if the student fails the second attempt, then a grade of (F) is assigned to BME 691, and the student will be dismissed from the university by the Graduate College. Any extension of the time limit on the second attempt must be approved by the Program Directors and by the Dean of the Graduate College.

## ***Comprehensive Exam Checklist***

### ***Semester before:***

- Meet with advisor and confirm that all requirements will be met before enrolling in BME 691.
- Work with your advisor to select members of supervisory committee.
- Submit the [Appointment of Supervisory Committee form](#).
- Request a permission number from the Program Administrator and enroll in BME 691.

### ***Beginning of semester:***

- Meet with advisor and supervisory committee, we suggest you put all agreed upon expectations in writing and save a copy:
  - Agree upon expectations for the grant proposal.
  - Agree upon expectations for the oral presentation.
  - Agree upon the amount of feedback the student can expect from their advisor and committee.

### ***Prior to submitting grant proposal to committee:***

- Complete the [Affirmation of Original Work](#) and submit it to the Program Administrator.
- Schedule the oral presentation. Reserve a room with the Program Administrator. (At least 1 week before grades are due).

### ***Presentation day:***

- Print the [Comprehensive Exam Approval form](#) and take it with you to your presentation.
- After your presentation return the Comprehensive Exam Approval form to the Program Administrator.
- Email a digital copy of your grant proposal to the Program Administrator.



## Appendix C - Dissertation Proposal Guide

### ***Dissertation Proposal***

The dissertation proposal is normally completed within one year of completing the comprehensive exam and typically approved by the dissertation committee one year before the dissertation defense. It is a comprehensive statement about proposed research that will contribute to the knowledge base of your focus area in the BME program.

The dissertation proposal should be presented within one year of satisfactory completion of the comprehensive exam. The student must submit a written dissertation proposal to the Dissertation Committee prior to the oral proposal defense. The written proposal should describe in sufficient detail the study motivation, proposed methods and scope of work, anticipated scientific impact, timeline, and a plan for obtaining and utilizing the resources necessary to complete the research. The oral proposal consists of the student presenting his or her proposed doctoral research and answering questions about the proposal. A majority approval of the Dissertation Committee is required to pass the proposal defense. If a student fails the oral defense, he or she may be allowed to reinitiate the dissertation proposal once with the approval of the Dissertation Committee. Students who fail a second time or do not receive approval to resubmit the proposal will be administratively withdrawn from the program. After the student passes both the written and oral portions of the dissertation proposal, the student becomes a Ph.D. candidate.

### ***Preparing your written proposal***

Boise State dissertation templates may be used for formatting the proposal:  
<https://graduatecollege.boisestate.edu/success/standards-and-guidelines/>.

The proposal should be clear, concise, compelling. At a minimum the proposal should include:

- Title
- A concise statement of purpose/research objective (similar to an abstract)
- A literature review
- Motivation and expected contributions
- Preliminary results
- The scope and overall framework or methodology in which the research will be pursued and interpreted, including metrics you will use to evaluate the success of your work
- A proposed timeline to complete publications and dissertation chapters

- Bibliographic references

### ***Proposal presentation scheduling***

- With the permission of your advisor, schedule the time and date of your proposal presentation with your committee members. Schedule for at least 2 hours.
- Once you've determined a time, contact the program administrator to reserve a room.
  - Once complete, please include a short abstract from your proposal. Proposals are open to the public and an email notice will be sent to current Biomedical Engineering students and faculty.
- The final draft of the proposal must be approved by the research advisor before submitting it to the dissertation committee at least two weeks before you plan to present your proposal. (You may need to make changes.)
- Within one week of receiving your written proposal your dissertation committee will contact you and your advisor and either:
  - Request that you make changes, resubmit and possibly reschedule your proposal presentation.
  - Give their approval to proceed with the scheduled proposal presentation.
- After the proposal presentation the dissertation committee will determine if the proposed research constitutes doctoral research. They will also make suggestions regarding additional background that should be considered and how the research problem or methods should be modified.

### ***Proposal Presentation Format***

The proposal presentation consists of a 45-minute public presentation of your dissertation proposal, including a public question and answer session, followed by a closed-door period of questioning by your dissertation committee.

The dissertation committee will conduct a closed-door oral examination based on the proposal and on relevant background from your program of study. Only the committee members may attend the closed-door session.

After the examination, you will be asked to leave, and the committee will discuss and vote on your performance in the oral examination. Majority approval of the dissertation committee is required to pass.

### ***Failure***

If a student fails, they may be allowed to reinitiate the dissertation proposal **once** with the approval of the dissertation committee. Students who fail a second time or do not receive approval to re-submit the proposal will be administratively withdrawn from the program.

### ***Forms to Complete***

- Prior to your proposal presentation (and before the comprehensive exam) complete or update the [Appointment of Supervisory Committee Form](#). (if not done prior to comprehensive exam).
- The day of your proposal presentation: print the [Proposal Acceptance Form](#) and take it with you.
- After your proposal presentation: After successfully proposing your dissertation you may work with your advisor to complete the [Application for Admission to Candidacy](#).

## ***Dissertation Proposal Checklist***

### ***At least one month prior to presentation:***

- Update the [Appointment of Supervisory Committee Form](#). (If changed since your comprehensive exam.)
- Check-in with dissertation committee to determine tentative proposal date.

### ***At least two weeks prior to presentation:***

- With advisor approval, submit proposal to committee.
- Schedule the time and date of your proposal presentation with your committee.
- Contact the program administrator to reserve a room and submit a short abstract.

### ***One week prior to presentation:***

- Follow up with your committee to confirm that your proposal can go forward.
- Notify the program administrator that your proposal is approved so an announcement can be sent out.

### ***Day of the proposal presentation:***

- Print the [Proposal Acceptance Form](#) and take it with you to your presentation.

### ***After the proposal is accepted:***

- Submit the [Application for Admission to Candidacy](#).

## Appendix D - Dissertation Defense and Graduation

### ***Submit the Application for Admission to Candidacy***

Prior to applying for graduation, you must submit an Application for Admission To Candidacy form. (Located at: <https://www.boisestate.edu/graduatecollege/forms/>).

The AAC is typically due the semester before you plan to graduate. Check the deadline here: <https://registrar.boisestate.edu/boise-state-academic-calendars/>.

### ***Apply for Graduation***

Refer to the calendars on the Registrar's website for the deadline by which to apply for graduation: <https://registrar.boisestate.edu/boise-state-academic-calendars/>.

Typically the deadline is in the semester before you plan to graduate. (You can apply later, but late fees may apply.)

The application for graduation is submitted through your student center. Instructions can be found here: <https://registrar.boisestate.edu/apply-for-graduation/>

### ***Prepare Your Dissertation Manuscript***

Refer to the templates and other resources on the Graduate College Thesis and Dissertation web page:

<https://www.boisestate.edu/graduatecollege-success/home/thesis-and-dissertation-information/>

The dissertation must be the result of independent and original research and must constitute a significant contribution to the knowledge base of the focus area, equivalent to multiple peer-reviewed publications. The style and format of the dissertation are to conform to the standards of the Graduate College.

### ***Dissertation Defense***

A public defense of the dissertation is scheduled after the dissertation committee has reviewed a draft that is considered to be a nearly final version. The date of the defense is determined jointly by the dissertation committee and the student and must be consistent with any guidelines provided by the Graduate College. The first part of the defense will be a public oral presentation of the dissertation. The second part will be an oral exam administered by the dissertation committee who will decide whether the student passes or fails the defense. A student who fails the defense may be permitted to try again but failure a second time will result in dismissal from the PhD program.

If the defense is completed with a result of pass, the dissertation committee prepares a statement describing final requirements such as additions or modifications to the dissertation and any additional requirements such as archival of data. When these requirements have been met to the satisfaction of the dissertation committee, the approval page of the dissertation is signed by the members of the committee.

### ***Prepare for your Oral Defense***

1. Ensure that your defense committee is the same as it was when you submitted the Appointment of Supervisory Committee Form. Contact the program administrator if you need a copy of the form. Submit an updated form if needed.
2. Schedule the time and place of your defense as soon as it is reasonable. Once you've selected a time, work with the program administrator to schedule a room.

#### **Keep the following in mind:**

- You must schedule a time that works for your GFR (The external person who will attend your defense, ask the program administrator if you don't know who this is).
  - You want to give your committee members ample time to review your work before you present.
4. Prepare a title and abstract for your dissertation, and submit the Graduate Defense Notification Form:  
<https://www.boisestate.edu/graduatecollege/graduate-defense-notification/>
  5. Send the title and abstract to the program administrator so a flyer can be prepared and your defense can be promoted.
  6. Distribute copies of your dissertation to your committee members **at least two weeks prior to your defense**. Your advisor and committee members may ask you to make revisions to your dissertation before your defense.

### ***The Day of Your Defense***

Download the Defense Committee Approval form and take it with you to your defense. (Located at: <https://www.boisestate.edu/graduatecollege/forms/>)

- After your defense your GFR will deliver the approval form to the Graduate College.

### ***After your Defense***

After your oral defense is done and you have made all revisions requested by your committee download the Final Reading Approval form and have each of your committee members sign. (Located at: <https://www.boisestate.edu/graduatecollege/forms/>)

- Leave the line for “Graduate College Representative” blank.
- You’ll upload the form as supplemental material into ScholarWorks.

### ***Registration***

Please note you must register for at least one (1) credit of 693 Dissertation in any semester in which the student is engaged in dissertation activity, including the semester or session of the final oral examination, regardless of the number of 693 Dissertation credits already accumulated by the student.

You cannot undertake the final oral examination unless enough 693 Dissertation credit has been accumulated to meet the degree requirement for such credit. You must submit the format review copy and the signed Final Reading Approval pages to the Graduate College no later than the last day of the final exam week of the semester or session. Failure to meet this deadline will require the student to register for at least one credit of 693 Dissertation in the subsequent semester or session. All 693 Dissertation credits are graded in-progress (IP) until a final grade of either pass (P) or fail (F) is assigned by the academic unit responsible for the program. A grade of pass (P) is assigned to all 693 credits if the final oral examination is passed, and a grade of fail (F) is assigned to all 693 credits if the student fails the final oral examination.

## ***Dissertation Defense Checklist***

### ***Semester before:***

- Submit the [Application for Admission To Candidacy](#).
- Apply for graduation <https://registrar.boisestate.edu/apply-for-graduation/>.

### ***At least two months prior to the defense:***

- If needed, update the [Appointment of Supervisory Committee Form](#).
- Discuss with your advisor, committee members, and GFR their availability to participate in the oral defense.
- Get feedback on dissertation from advisor and committee members and obtain approval to schedule defense.

### ***At least two weeks prior to the oral defense:***

- Give your advisor and your committee members the final dissertation.
- Schedule the time and date of your proposal defense with your advisor, committee and GFR.
- Contact the program administrator to reserve a room and submit a short abstract.
- Submit the Graduate Defense Notification Form:  
<https://www.boisestate.edu/graduatecollege/graduate-defense-notification/>

### ***At the oral defense***

- Bring the [Defense Committee Approval](#) form with you to your defense.

### ***After the oral defense:***

- Complete dissertation revisions as specified by your advisor and committee.
- Obtain signatures of your advisor and committee members on the [Final Reading Approval form](#).

### ***Submitting to ScholarWorks:***

- Complete and submit the following forms via ScholarWorks. **You will upload them as supplemental material:**
  - [Defense Committee Approval Form](#)



- o [Final Reading Approval Form](#)
- o [Thesis and Dissertation Formatting Requirements](#)
- Follow the [Submission instructions](#) outlined on the Graduate College Thesis and Dissertation office website.