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Steering Committee

MS Steering Committee:
Mark Craven (Chair/Program Director), Eneida Mendonca (Co-Chair / Associate Program Director), Karl Broman, Colin Dewey, Vikas Singh, David Page, Peggy Peissig

PhD Steering Committee:
Karl Broman (Chair/Program Director), Corrine Engelman (PHS), Mark Craven, Sündüz Keles, Michael Newton, Ron Gangnon, Sushmita Roy
Arriving on Campus

To ensure a smooth start to your Graduate Career, upon arrival, students should review campus guidelines and complete the following tasks. [https://grad.wisc.edu/new-students/](https://grad.wisc.edu/new-students/)

**Obtain a Wiscard**
The student ID, or [WisCard](#) is the key to campus life. Students use their Wiscard as a library card, to purchase school supplies and food on campus, as a key card for certain buildings that faculty grant them access to, and more. Having a Wiscard is a prerequisite for many activities on campus, so it is essential that students stop by the Photo ID Office in Union South Room 149 between 8:30 AM and 5 PM Monday-Friday as soon as they arrive in Madison.

**Navigate Campus**
The Associated Students of Madison (ASM) provide students with a [free bus pass](#); [Transportations Services](#) can be referenced for bus routes and all other transportation services available.

**Verify Contact Information & Online Logins**
To be sure that they can connect with fellow students and campus offices, students should verify that they can log in to their [MyUW](#) account and confirm their mailing address and phone number; the campus’ information technology division, known as [DoIT](#), should be contacted through the [DoIT Help Desk](#) questions if students encounter any difficulties accessing MyUW.

**Pay Tuition & Fees**
Tuition is due the Friday before classes start. If you are unsure if you should pay tuition please contact Beth Bierman bbierman@wisd.edu. All students are required to pay their segregation fees on time or Questions can be directed and payments made to the [Bursar’s Office](#) in person on East Campus Mall or online.

**Check in with International Student Services (ISS)**
International Students who are on a student scholar or visa [MUST](#) check in with [International Student Services](#) at the Red Gym [IMMEDIATELY UPON ARRIVAL](#).

**Enroll in Classes**
All PhD students will be advised by Dr. Karl Broman for the first year unless they already have an advisor. MS students will be assigned advisors in the summer and should be available for correspondence in the weeks prior to registration. Contact Beth Bierman, bbierman@wisc.edu, the Grad Coordinator, if you have any questions.

**Attend the New Graduate Student Welcome Activities**
This is a great opportunity to mingle with Graduate School deans and staff and meet current graduate students to learn about the many campus and community resources available to you.
Quick Links (Student Resources)
The links below are easy-to-access resources available to students in the Biomedical Data Science Program.

Calendars

Academic Calendar
Start and end dates, holidays, and exam dates for academic terms across campus

Enrollment Deadlines & Tuition Payment
Information from the Office of the Registrar regarding when students can adjust their scheduled courses; tuition due dates and payments can be made through the Bursar's Office

Doctoral Degree Deadlines & MS Degree Deadlines
List of dates that students requesting final warrants and preparing for graduation should observe

Commencement
The university’s official site for all information concerning upcoming graduation ceremonies

Checklist for All New Graduate Students
The Graduate School provides an online Important Checklist for new and international students. It also provides a schedule of events during Welcome Week.

Campus & Academic Life

UW-Madison Guide to Campus Life
The university's complete compilation of student resources and opportunities; including student organizations, diversity on campus, events, health and wellbeing, and life in Madison

Graduate School Academic Policies and Procedures
The Graduate School's expectations for student conduct, academic achievement, and degree-earning efforts

International Student Services (ISS)
A resource for international students searching for programs in the Madison community and assistance related to visas and immigration

Computers

Biomedical Computing Group (BCG)
The technology resource for computers and software specific to the Department of Biostatistics and Medical Informatics

DoIT (Division of Information Technology)
The university's main provider of technological assistance, products, and education
Diversity
Office for Equity and Diversity (OED)
The university’s office for the promotion, integration, and transfer of equity and diversity values to campus

Health & Wellness
University Health Services
The university’s provider of student physical and mental health services and education

McBurney Disability Resource Center
A resource for students who have a documented disability or suspect that they may have an undiagnosed disability to obtain academic accommodations

SilverCloud - University Health Services
SilverCloud is an online, self-guided, interactive mental health resource that provides UW-Madison students with accessible treatment options 24 hours a day

Learning Resources & Assistance
The Writing Center
A campus-wide organization that provides free of charge, face-to-face and online consultations for students writing papers, reports, resumes, and applications

Accessibility
A resource coordinated by the campus Americans with Disabilities Act (ADA) Coordinator providing information on facilities and physical access, academic services, libraries, employment and ADA Campus Policies.
The Biomedical Data Science Graduate Program

What is Biomedical Data Science?
Data science is the combined use of tools and concepts from statistics and computer science for gathering, integrating, analyzing, interpreting, and visualizing data for scientific inquiry and decision-making. In addition to those two core disciplines, data science incorporates case studies, methods, theory, and principles from other fields including systems engineering, human-centered design, and information sciences. Biomedical Data Science is focused on the quantitative and computational aspects of generating and using data to further biomedical research, broadly construed.

Biomedical Data Science includes techniques such as machine learning and data mining, optimization, theory of data structures, formal study design methods for biomedical research, and formal statistical principles for quantifying uncertainty and making inferences. Recent growth in the size and complexity of data arising in biology, medicine, and public health—including applications in high throughput biology, medical image analysis, clinical and health services research, and genetics and genomics—requires continued research and training in the separate disciplines of statistics and computer science, and, their synthesis.

Program Vision
The MS and PhD degree programs in Biomedical Data Science takes a broad view in terms of the range and scale of biomedical problems being addressed, and also in terms of the quantitative and computational methodologies being covered.

As such, the program has several objectives:
- Train all students in a common core curriculum covering the breadth of challenges, scales and methods in Biomedical Data Science.
- Offer students a curriculum covering the spectrum from analyzing molecular-level data to analyzing populations of individuals in pursuit of biomedical research and novel clinical processes.
- Offer students a curriculum featuring rigorous training in a range of methods, including but not limited to: artificial intelligence (including computer vision, machine learning, natural language processing), databases, human-computer interaction, optimization, and security, mathematical statistics and inference, statistical computing, and regression methods.
- Impart to students a fundamental knowledge of, and competence in, computer science, statistics, and the biomedical sciences.

Produce students who are professionals capable of independent thinking, of bringing novel strategies and new ideas to their professional work environment, and of becoming leaders in healthcare, academia and industry.
Advising

**MS Advisor:**
An initial steering committee member will be assigned as an advisor to each student upon entry into the program. Student and advisor will connect either by email, phone, or in person (if on campus) and discuss class options, allowing the student to register for classes in July. Students are encouraged to find a mentor who is conducting research in an area they are interested in, but it is not required.

**Meetings:**
Students will meet with their advisors and get documents signed by the end of the second week of classes. These documents will include the creation of or revision of the IDP in addition to the completion of the course checklist provided by the program. The advisor will update the course checklist, including adding any notes (e.g., course waivers), in the relevant BOX folder. The Graduate coordinator will monitor the process each semester.

**PhD Advisor:** PhD students are assigned an initial academic advisor upon entry into the program; students have the option to change advisors at any time, and they should identify a permanent research advisor by the end of their second year.

**Meetings:**
Students should meet with their academic advisor at least once or twice a semester to plan course selections. At the start of their third year, they should have identified a permanent research advisor and work with him/her to identify a thesis committee. Students should then be meeting with their thesis committee at least once each year.

**Advisee:**
Knowing the procedures and requirements of the University is the student's responsibility. Since the advisor's role can vary, students should discuss roles and expectations with their advisors or prospective advisors. Both the student and the advisor have a responsibility to make their expectations clear to each other.

**Additional Advising Contacts:**
Students should always reference the program’s website, this Handbook, the Graduate School’s website (www.grad.wisc.edu), and the Graduate School's Academic Guidelines (http://grad.wisc.edu/acadpolicy/) for answers on various program-related questions. However, when students need further clarification on any of these policies or procedures they should contact the Graduate Program Coordinator, Beth Bierman. She can provide guidance regarding issues including satisfactory academic progress, academic deadlines, graduation completion, program-related forms, advising/course holds and permissions, and course offerings.

**Changing Degree Levels:**
Some students who begin working toward a Ph.D., may switch to a M.S. degree. Conversely, some students, who plan to complete only a M.S. degree, may apply to the Ph.D. program to continue their studies. These decisions must be made with the support of their faculty advisor. Requests are made through MyGradPortal **NOT** through Applicant Review.
International Students must also inform the International Student Services Office as soon as they decide to change their degree level by completing the appropriate Application Form found here: https://iss.wisc.edu/applications-and-forms/.

**Professional Development and Career Planning**

UW-Madison offers a wealth of resources intended to enrich your graduate studies and enhance your professional skills. It is expected that you will take full advantage of the resources that best fit your needs and support your career goals. By actively participating in these professional development opportunities, you will build the skills needed to succeed academically at UW-Madison and to thrive professionally in your chosen career.

The **Graduate School Office of Professional Development and Engagement (OPDE)** provides direct programming in the areas of career development and skill building, and also serves as a clearing house for professional development resources across campus. The best way to stay informed is to watch for the weekly newsletter from OPDE, GradConnections, and to visit the webpage https://grad.wisc.edu/pd/ for an up-to-date list of events. For example, typical topics covered throughout the year are:

- Planning for academic success
- Communication skills
- Grant writing
- Teaching
- Mentoring
- Research ethics
- Community engagement
- Entrepreneurship
- Career exploration: academic, non-profit, industry, government, etc.
- Job search support
- Pursuing postdoctoral training

Be sure to keep a pulse on programs offered by the following campus services as well.

- Writing Center http://www.writing.wisc.edu/
- Grants Information Collection http://grants.library.wisc.edu/
- Delta Program http://www.delta.wisc.edu
- Wisconsin Entrepreneurial Bootcamp http://bus.wisc.edu/degrees-programs/non-business-majors/wisconsin-entrepreneurial-bootcamp

**Individual Development Plan**

As you begin your graduate school career, an Individual Development Plan (IDP) is an essential tool to help you:

1) Assess your current skills and strengths
2) Make a plan for developing skills that will help you meet your academic and professional goals
3) Communicate with your advisors and mentors about your evolving goals and related skills.

The IDP you create is a document you will want to revisit periodically, to update and refine as your goals change and/or come into focus, and to record your progress and accomplishments. It also serves to
start – and maintain – the conversation with your faculty advisor about your career goals and professional development needs. The IDP is not required by the MS Degree Program in Biomedical Informatics, but it is highly recommended and sometimes required by certain funding agencies.

**How It Works:**
To create your IDP, you can start with one of the IDP resources listed below, or attend an IDP workshop hosted by the Graduate School. Your graduate program coordinator or faculty mentor may also be able to help you get started.

**UW-Madison IDP Policy:**
IDPs are required for graduate students and postdocs with NIH funding, and recommended for all graduate students and postdocs regardless of funding source.

Get started here: [https://grad.wisc.edu/professional-development/](https://grad.wisc.edu/professional-development/)

Set up a free account and create and monitor your IDP at [http://myidp.sciencecareers.org](http://myidp.sciencecareers.org).
Class Registration & Credit Load

Course registration is accessed online through the Student Center section of MyUW (a Net ID and password are required for log in). Tutorials on navigating Student Center are available through DoIT.

Credit Load Requirements for Full-Time Students
All of the following credit requirements (except F-1 and J-1 visa requirements) must be satisfied by graded courses taken at 300 or above. Courses numbered below 300, audit, and pass/fail do not satisfy enrollment requirements.

Enrollment Requirements
The complete Graduate School’s policy on enrollment requirements is posted at https://grad.wisc.edu/documents/enrollment-requirements/

Full-Time Graduate Student Enrollment Guide at a Glance

<table>
<thead>
<tr>
<th></th>
<th>Fall &amp; Spring Semester</th>
<th>Summer Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA, non-dissertator</td>
<td>8-15 Credits</td>
<td>2 Credits</td>
</tr>
<tr>
<td>TA, non-dissertator</td>
<td>6 Credits (33.33%)</td>
<td>2 Credits</td>
</tr>
<tr>
<td></td>
<td>4 Credits (50%)</td>
<td></td>
</tr>
<tr>
<td>Dissertator</td>
<td>EXACTLY 3 Credits</td>
<td>EXACTLY 3 Credits</td>
</tr>
<tr>
<td>Fellow or Trainee</td>
<td>8-15 Credits</td>
<td>2 Credits</td>
</tr>
<tr>
<td>International Students (F-1/J-1)</td>
<td>8-15 Credit</td>
<td>2 Credits with RA/TA/PA Appt.</td>
</tr>
</tbody>
</table>

Auditing Courses
Graduate School policy on Auditing Courses may be found at https://grad.wisc.edu/documents/auditing-courses/

Residence for Tuition Purposes
Residency is used to determine tuition rates on campus. The details of the Graduate School Residency for Tuition Purposes policy can be found here as well as the full Registrar’s Office policy. https://grad.wisc.edu/documents/residence-for-tuition-purposes/ https://registrar.wisc.edu/residence/

Transfer of Graduate Work from Other Institutions
https://grad.wisc.edu/documents/transfer-of-graduate-work-from-other-institutions/

Students with ESL requirements
Any student who was admitted with a TOEFL score below 92, or an IELTS score below 6.5 will be required to take the English as a Second Language Assessment Test (ESLAT) http://www.english.wisc.edu/esl/degree-placement.htm and any required English course during their first semester.

Enrollment Deadlines
It is your responsibility as a student to be aware of enrollment deadlines each term. Deadlines can be found here: https://registrar.wisc.edu/sessiondates/
Master’s Program

Student Learning Outcomes
The broad view used to create this MS degree program allows students a significant amount of flexibility in the design of their curriculum. However, even with the diverse array of course sequences possible for each student, all graduates will be expected to achieve a certain set of standards.

At the end of the program, all graduates completing this degree program will be able to:

- Understand, apply, and evaluate common Data Science theories, methods, and tools related to biological and biomedical problems, health care and public health.
- Apply, adapt, and validate an existing approach to a specific biomedical and health problem.
- Produce solutions that address academic or industrial needs using Data Science tools and knowledge.
- Evaluate the impact of Biomedical Data Science applications and interventions.
- Understand the challenges and limitations of technological solutions.
- Adhere to the professional and legal standards of conduct in Biomedical Data Science.
- Demonstrate scholarly oral and written presentations.

Assessment of Student Outcomes
1. Coursework: The curriculum has been designed to accomplish the outcomes outlined above. The students begin with the core courses building a basic foundation in Biomedical Data Science. Note that many outcomes are covered in more than one course, thereby helping to cement the concepts for the students. As students’ progress through the program, they can then focus their learning in a concentrated area thus adding depth to their knowledge. Provided the students perform well in their courses (i.e., achieve a grade of B or better), they will meet the outcomes listed above. The table below indicates which outcomes are covered by each of the core courses.

| Understand, apply, and evaluate common Data Science theories, methods, and tools related to biological and biomedical problems, health care and public health. | √ | √ | √ |
| Apply, adapt, and validate an existing approach to a specific biomedical and health problem. | √ | √ | √ | √ |
| Produce solutions that address academic or industrial needs using Data Science tools and knowledge. | √ | √ | √ |
| Evaluate the impact of Biomedical Data Science applications and interventions. | √ | √ | √ | √ |
| Understand the challenges and limitations of technological solutions. | √ | √ | √ |
| Adhere to the professional and legal standards of conduct in Biomedical Data Science. | √ | √ | √ |
| Demonstrate scholarly oral and written presentations. | √ | √ | √ |
2. Annual Committee Evaluations: At the end of each year that the student is in the program, a committee will be created to meet, discuss, and evaluate student performance. The committee will evaluate the student’s coursework and progress on any other projects he/she is working on.

3. Final Presentations: Students pursuing the research track will complete a research project that will be presented during their final semester in the program. This project will be presented to a group of their peers and departmental faculty (seminar style). This project will be assessed by the student’s faculty advisor (unless otherwise specified) who will provide summary statements.

4. Indirect assessments: Students will be sent an annual questionnaire in the spring asking about the following:
   a. Job placement (or admission to other graduate programs)
   b. Publication records
   c. Certifications and licenses acquired
   d. Other awards or honors of note

Coursework Requirements
The program requires that students complete a total of 30 - 31 credits.

Students must maintain a 3.0 GPA and earn a grade of B or better for each of the core courses. A student who receives a grade below a B in a core course must repeat the course unless an exception has been approved by the Steering Committee upon the recommendation of the student’s advisor.

Required Core courses (12 credits – 3 credits each)
Students will start with four core courses designed to present the essential concepts in the field and provide a base level of knowledge.

1. Introduction to Bioinformatics (BMI 576)
2. Medical Image Analysis (BMI 567)
3. Health Informatics (BMI 573) or equivalent (e.g., BMI 918) Currently BMI 826 004
4. Introduction to Biostatistics (BMI 541, 551, or 571)

Concentration Electives (6 credits – 3 credits each)
In order to attain depth of knowledge and skills, each student will work with their faculty advisor to select electives in an area of concentration within Biomedical Data Science. Examples include but are not limited to:

- Statistical Methods for Clinical Trials (BMI/STAT 641)
- Statistical Methods for Epidemiology (BMI/STAT 642)
- Advanced Bioinformatics (BMI 776)
- Statistical Methods for Molecular Biology (BMI 877)
- Computational Methods for Medical Image Analysis (BMI 767)
- Statistical Methods for Medical Image Analysis (BMI 768)
- Introduction to Health Systems Engineering (ISyE 417)
- Health Information Systems (ISyE/BMI 617)
- Network Biology class (BMI 826 Section 023)
Data Science Electives (6 credits – 3 credits each)
In consultation with their faculty advisor, students will select two courses as electives in computer science and/or statistics. Coursework of high relevance includes the following areas:
- Mathematical Statistics (STAT 609)
- Statistical Computing (STAT 771)
- Theory and Application for Regression (STAT 849, 850)
- Algorithms (CS 577, CS 787)
- Computer Vision (CS 766)
- Databases (CS 564, CS 764)
- Human-computer interaction (CS 570, CS 770)
- Machine learning (CS 540, CS 760, CS 761)
- Natural language processing (CS 545, CS 769)
- Optimization (CS 425, CS 525, CS 635, CS 720)
- Security (CS 642)

Track Electives (6-7 credits)
Our curriculum has two tracks, Professional and Research, which have substantial overlap. The Professional track is intended for students who have an undergraduate degree in computer science, engineering, biology, or a health-related field, and are interested in a terminal MS degree that will equip them to work as a Biomedical Data Science professional in industry, a hospital, or a research lab. The Research track is aimed at students who have an advanced degree in a biomedical field, and are interested in doing research.

Professional Track: Biomedicine electives (6 credits)
The Professional track is for students concentrating their studies in bioinformatics, we would recommend courses such as General Genetics (Genetics 466) and Introduction to Human Biochemistry (Biomol Chem 314).

The Professional track is intended for students who are interested in a terminal MS degree that will equip them to work as a professional in industry (e.g. developers of health information systems, electronic health records, or novel genetic tests, as just a few examples), a hospital, or a research lab. In consultation with their advisor, students will select courses that will provide them with additional biomedical background for future employment opportunities.

For example, students ay focus their studies on Genetics or Neuroscience

Research Track: Research electives (7 credits)
The Research track is for students who are interested in developing their skills as an independent researcher. Students will conduct an independent research project with their faculty advisor. In consultation with their advisor students will select a course in Responsible Conduct of research. In addition, the advisor will help students select an elective specifically orientated to the topic of their research.

For example, a student could conduct an independent research project on breast cancer risk prediction. For the responsible conduct of research, the student could take Ethics for Data Scientists. For the research oriented elective, the student could take a course in Cancer Genetics or Machine Learning.
**PhD Program**

**Student Learning Outcomes**

By having a three year-long course sequence in Biostatistics Theory and Methods, Computer Science/Informatics along with a specialization in Clinical Informatics, Clinical Biostatistics, or Statistical Computing provides the student with a diverse breadth of knowledge allowing them to work in a variety of specializations.

At the end of the program, all graduates will independently and with a high degree of rigor, be able to:

- Articulate the biological context of a research question and the scientific relevance of analysis results.
- Communicate with scientific and quantitative (computational and statistical) colleagues about data analysis goals, methods, and results.
- Extract the statistical or computational problems from a scientific problem. Develop, characterize, and implement suitable analysis methods to answer questions from biomedical data. Evaluate the validity of analysis methods.
- Analyze data; extract knowledge and guide decisions based on biomedical data. Organize data and software so that quantitative analyses are meaningful and reproducible.
- Critically evaluate quantitative approaches in the scientific literature.
- Evaluate and develop study designs and recognize limitations and potential biases in research data sets.
- Identify the ethical and regulatory issues surrounding a research project.

**Coursework Requirements**

A total of 51 credits are required: the 34 course credits from Core Topics, Breadth Requirements, and Additional Program Requirements. The remaining credits can be a combination of further elective courses and research credits.

**Core Topics:** Three year-long course sequences (18 credits) will be selected from a set of core topics, including one biostatistics sequence (topics 1-3) and one computer science/informatics sequence (topics 4-7). The third sequence can be selected from any of the listed topics (topics 8-12).

<table>
<thead>
<tr>
<th>Biostatistics Theory and Methods</th>
<th>Computer Science/Informatics</th>
<th>Specializations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math. Statistics (Stat 609)</td>
<td>Intro to Artificial Intelligence (CS 540) &amp; Machine Learning (CS 760)</td>
<td>Health Systems Engineering (ISyE 417) &amp; Health Information Systems (ISyE 617)</td>
</tr>
</tbody>
</table>
Additional Program Requirements
All students will take a 1-credit Research Ethics course.

In addition, to contribute to the students’ breadth of knowledge, to train the students in the critical evaluation of the biostatistical, computational, and scientific literature, and to build their professional skills, all students will participate in two year-long seminar-style courses:

- A second-year literature course (BMI 881-882, 4 credits), including readings, discussion, and presentations on a selected set of primary journal articles from the biostatistics, biomedical informatics, computer science, and biomedical literature. Two members of the Program Faculty will lead the course.
- A third-year professional skills seminar (BMI 883-884, 2 credits), covering such topics as giving scientific presentations, writing research grants, the publication process (writing scientific articles, reviewing such articles, and responding to reviews), applying for jobs, employment opportunities in academics and industry, and working with scientific collaborators as part of interdisciplinary teams.

Additional electives
Course requirements include additional credits of electives, which may be taken from the core topics (see above), or other graduate-level courses in biostatistics, computer science, or biomedical sciences (e.g., CS 513 Numerical Linear Algebra or Stat 998 Statistical Consulting). A student’s particular choices will be guided by and subject to the approval of their Academic Advisor.
**Research Rotations**
Students will carry out three semester- or summer-long research rotations (one in the first year and two in the second) concerning a substantive problem in biomedical data science, advised by a program faculty member, in collaboration with an additional UW faculty member from the biological, biomedical, or population health sciences. The aim is for the students to begin to learn the craft of data science research, to expand their understanding of specific biomedical application areas, to gain a deeper exposure to a broad set of problems in biomedical data science, and to ultimately identify an appropriate dissertation advisor and to begin to identify a dissertation research topic.

**Exams**
The program will include an Oral Preliminary Exam, ideally taken in the student’s third year, on a topic selected with the approval of the student’s advisor. The examination is given by a committee of at least four faculty members, including at least three Program Faculty; a Program Faculty member must chair the committee. Prior to the exam, the student must prepare a 15–20-page paper outlining the area to be covered. The paper should indicate the aims, scope, and depth of the student’s proposed dissertation research, as well as the anticipated approach, and should be submitted to the committee at least one week prior to the examination. The examination typically consists of a 20–30 min talk by the student and questions by the committee. The committee may ask questions during or after the talk. The scope of the questions will be determined by the subject matter of the paper but may include any relevant topic. The student’s advisor may not serve as Chair of the exam committee.

**Dissertation**
In addition, and in accordance with requirements set by the Graduate School at UW-Madison, students must pass a Final Oral Exam (i.e., a Dissertation Defense), following completion of their dissertation research. The primary requirement for the PhD degree is the completion of a significant body of original research and the presentation of this research in a dissertation. The research is carried out under the guidance of a member or members of the Program Faculty. The candidate must defend the dissertation in a Final Oral Exam. The rules for the composition of the Final Oral Exam committee are the same as for the Oral Preliminary Exam, except that, following Graduate School policy, the committee must have at least four members and at least one must be from outside the program.
Academic Standards

Students should be aware of the university, college, and departmental policies regarding Graduate Students’ academic performance.

Academic Expectations
Continuation in the Graduate School is at the discretion of a student's program, the Graduate School, and a student's faculty advisor.

The Graduate School sets minimum standards that all graduate students in the university must meet. Many departments and programs have additional requirements that exceed these Graduate School minimum requirements. The definition of satisfactory progress varies by program. The Graduate School Catalog, Graduate Guide, includes the Graduate School's minimum degree requirements and each program's minimum criteria for satisfactory progress.

The Graduate School requires that students maintain a minimum graduate GPA of 3.00 in all graduate-level work (300 or above, excluding research, audit, credit/no credit, and pass/fail courses) taken as a graduate student unless probationary admission conditions require higher grades. The Graduate School also considers Incomplete (I) grades to be unsatisfactory if they are not removed during the subsequent semester of enrollment; however, the instructor may impose an earlier deadline.

A student may be placed on probation or suspended from the Graduate School for low grades or for failing to resolve incompletes in a timely fashion. In special cases the Graduate School permits students who do not meet these minimum standards to continue on probation upon recommendation and support of their advisor.

Professional Conduct
All students are expected to adhere to the highest standards of professional behavior and ethics. Students should avoid even an appearance of improper behavior or lack of ethical standards while in Graduate School at UW-Madison, in all professional settings, and in their personal lives. Students should conduct themselves according to the standards expected of members of the profession to which the student aspires. Concerns about infractions of Professional Conduct may be effectively handled informally between the instructor/advisor and the student. If a resolution is not achieved, a graduate program representative may be included in the discussion. Separate and apart from a violation of Professional Conduct, a student may face University disciplinary action with regard to the same action. Students are responsible for reading the information here as well as the information published on all the relevant web sites. Lack of knowledge of this information does not excuse any infraction.

1. Professional Ethics: Students shall show respect for a diversity of opinions, perspectives and cultures; accurately represent their work and acknowledge the contributions of others; participate in and commit to related opportunities; aim to gain knowledge and contribute to the knowledge base of others; understand the UW Student Code of Conduct; represent their profession and the program; and strive to incorporate and practice disciplinary ideals in their daily lives. Resumes/CVs must reflect accurate information.

2. Honesty and Integrity: Students shall demonstrate honesty and integrity as shown by their challenging of themselves in academic pursuits; honesty and ethics in research and IRB
applications—including honesty in interpretation of data, commitment to an unbiased interpretation of academic and professional endeavors; and the need to document research activities, protect subject/client confidentiality and HIPPA regulations. Students

3. shall follow-through and pull their weight in group activities and understand where collaboration among students is or is not allowed; not plagiarize others or past work (self-plagiarism), cheat, or purposefully undermine the work of others; and avoid conflicts of interest for the duration of their time in the program. As a professional, honesty and integrity also extends to personal behavior in life outside of the academic setting by realizing that students are representatives of the program, UW-Madison, and the profession as a whole.

4. Interpersonal and Workplace Relationships: Students shall interact with peers, faculty, staff and those they encounter in their professional capacity in a manner that is respectful, considerate, and professional. This includes and is not limited to attending all scheduled meetings, honoring agreed upon work schedules, being on-time and prepared for work/meetings, contributing collaboratively to the team, keeping the lines of communication open, offering prompt response to inquiries, and employing respectful use of available equipment/technology/resources. Chronic or unexplained absences are unprofessional in the workplace and could be grounds for termination or removal of funding. To facilitate the free and open exchange of ideas, any criticism shall be offered in a constructive manner, and the right of others to hold different opinions shall be respected.

5. Commitment to Learning: Students are expected to meet their educational responsibilities at all times. Be actively prepared for class and be ready for questions and answers. Be on time for every class and always show courtesy during class or if you have to leave class early. If possible, students should notify the instructor at least one day in advance of a planned absence. Students who are unable to attend class are responsible for finding out what occurred that day and should not expect instructors to give them individual instruction. Recognizing that the pursuit of knowledge is a continuous process, students shall show commitment to learning by persevering despite adversity and seeking guidance in order to adapt to change. Students shall strive for academic excellence and pursue and incorporate all critique, both positive and negative, in the acquisition of knowledge in order to understand and respect the community in which they work.

This graduate program, the Graduate School, and the Division of Student Life all uphold the UW-System policies and procedures in place for academic and non-academic misconduct. In addition, graduate students are held to the same standards of responsible conduct of research as faculty and staff. Furthermore, unprofessional behavior towards clients/subjects, faculty, staff, peers and public are significant issues in the evaluation and promotion of students. In turn, we hold expectations for the highest level of academic integrity and expect professional, ethical, and respectful conduct in all interactions. Students may be disciplined or dismissed from the graduate program for misconduct or disregard for professional conduct expectations regardless of their academic standing in the program. Separate and apart from a violation of Professional Conduct, a student may face University disciplinary action with regard to the same action. Students are responsible for reading the information here as well as the information published on all the relevant web sites. Lack of knowledge of this information does not excuse any infraction.
Academic Misconduct

Academic misconduct is an act in which a student (UWS 14.03(1)):
1. seeks to claim credit for the work or efforts of another without authorization or citation;
2. uses unauthorized materials or fabricated data in any academic exercise;
3. forges or falsifies academic documents or records;
4. intentionally impedes or damages the academic work of others;
5. engages in conduct aimed at making false representation of a student's academic performance; or
6. assists other students in any of these acts.

Examples of academic misconduct include but are not limited to:
1. cutting and pasting text from the Web without quotation marks or proper citation;
2. paraphrasing from the Web without crediting the source;
3. using notes or a programmable calculator in an exam when such use is not allowed;
4. using another person's ideas, words, or research and presenting it as one's own by not properly crediting the originator;
5. stealing examinations or course materials;
6. changing or creating data in a lab experiment;
7. altering a transcript;
8. signing another person's name to an attendance sheet;
9. hiding a book knowing that another student needs it to prepare for an assignment;
10. collaboration that is contrary to the stated rules of the course; or
11. tampering with a lab experiment or computer program of another student.

Additional information regarding Academic Misconduct:

Non-Academic Misconduct

The university may discipline a student in non-academic matters in the following situations:
1. for conduct which constitutes a serious danger to the personal safety of a member of the university community or guest;
2. for stalking or harassment;
3. for conduct that seriously damages or destroys university property or attempts to damage or destroy university property, or the property of a member of the university community or guest;
4. for conduct that obstructs or seriously impairs university-run or university-authorized activities, or that interferes with or impedes the ability of a member of the university community, or guest, to participate in university-run or university-authorized activities;
5. for unauthorized possession of university property or property of another member of the university community or guest;
6. for acts which violate the provisions of UWS 18, Conduct on University Lands;
7. for knowingly making a false statement to any university employee or agent on a university-related matter, or for refusing to identify oneself to such employee or agent;
8. for violating a standard of conduct, or other requirement or restriction imposed in connection with disciplinary action.
Examples of non-academic misconduct include but are not limited to:

1. engaging in conduct that is a crime involving danger to property or persons, as defined in UWS 18.06(22)(d);
2. attacking or otherwise physically abusing, threatening to physically injure, or physically intimidating a member of the university community or a guest;
3. attacking or throwing rocks or other dangerous objects at law enforcement personnel, or inciting others to do so;
4. selling or delivering a controlled substance, as defined in 161 Wis. Stats., or possessing a controlled substance with intent to sell or deliver;
5. removing, tampering with, or otherwise rendering useless university equipment or property intended for use in preserving or protecting the safety of members of the university community, such as fire alarms, fire extinguisher, fire exit signs, first aid equipment, or emergency telephones; or obstructing fire escape routes;
6. preventing or blocking physical entry to or exit from a university building, corridor, or room;
7. engaging in shouted interruptions, whistling, or similar means of interfering with a classroom presentation or a university-sponsored speech or program;
8. obstructing a university officer or employee engaged in the lawful performance of duties;
9. obstructing or interfering with a student engaged in attending classes or participating in university-run or university-authorized activities;
10. knowingly disrupting access to university computing resources or misusing university computing resources.

Graduate School Academic Policies & Procedures: Misconduct, Non-Academic:
Academic Policies and Procedures

Research Misconduct
Much of graduate education is carried out not in classrooms, but in laboratories and other research venues, often supported by federal or other external funding sources. Indeed, it is often difficult to distinguish between academic misconduct and cases of research misconduct. Graduate students are held to the same standards of responsible conduct of research as faculty and staff. The Graduate School is responsible for investigating allegations of research misconduct. This is often done in consultation with the Division of Student Life as well as with federal and state agencies to monitor, investigate, determine sanctions, and train about the responsible conduct of research. For more information, contact the Associate Vice Chancellor for Research Policy, 333 Bascom Hall, (608) 262-1044.

Please see section on “Grievance Procedures and Misconduct Reporting” for further information on reporting research misconduct of others. Here are links for additional information regarding Research Misconduct and Responsible Conduct:

Graduate School Policies & Procedures: Responsible Conduct of Research


Disciplinary Action and Dismissal

Failure to meet the program’s academic or conduct expectations can result in disciplinary action including immediate dismissal from the program. If a student is not making satisfactory progress in regards to academic or conduct expectations, the advisor will consult with the steering committee to determine if disciplinary action or dismissal is recommended.

Student progress will be reviewed through coursework and the Annual Review. If the advisor and graduate committee find that a student has failed to achieve satisfactory progress with academic or conduct expectations the student may be dismissed from the program. Students placed on probation will be placed on probation for one semester and will be reviewed by the Steering Committee following the probationary semester. Students placed on probation may be dismissed or allowed to continue based upon review of progress during the probationary semester.

The status of a student can be one of three options:
1. Good standing (progressing according to standards).
2. Probation (not progressing according to standards but permitted to enroll; specific plan with dates and deadlines in place in regard to removal of probationary status).
3. Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

A semester GPA below 3.0 will result in the student being placed on academic probation. If a semester GPA of 3.0 is not attained during the subsequent semester of full time enrollment (or 12 credits of enrollment if enrolled part-time) the student may be dismissed from the program or allowed to continue for 1 additional semester based on advisor appeal to the Graduate School. A cumulative GPA of 3.0 is required to graduate. See the Graduate School Academic Policies & Procedures: Probation [https://grad.wisc.edu/documents/probation/] and Grade Point Average (GPA) Requirements [https://grad.wisc.edu/documents/gpa-requirement/].

In the case of a required course in which the student earns a grade below a B, the course must be repeated. Required courses may only be repeated once. Failure to receive a B or higher in the repeated course may result in dismissal from the program. Students must do all the work in the repeated course, including laboratory perform laboratory work; attend regularly; participate in class discussions; take examinations; and write papers. Students will earn a final grade in the course. Both grades will be used in calculating the student's graduate grade-point average; however, the course will count only once toward meeting degree credit requirements for the program. See the Graduate School Academic Policies & Procedures: [https://grad.wisc.edu/documents/repeating-courses/]

Students may be disciplined or dismissed from the graduate program for any type of misconduct (academic, non-academic, professional, or research) or failure to meet program expectations regardless of their academic standing in the program. Separate and apart from a violation of Professional Conduct, a student may face University disciplinary action with regard to the same action. Concerns about infractions of the Professional Conduct may be effectively handled informally between the student and the advisor/faculty member. However, if a resolution is not achieved, the issue may be advanced for further review by the program.
Disciplinary Actions

Depending on the situation/program, the following are possible disciplinary action options.

- Written reprimand
- Denial of specified privilege(s)
- Imposition of reasonable terms and conditions on continued student status
- Probation
- Restitution
- Removal of the student from the course(s) in progress
- Failure to promote
- Withdrawal of an offer of admission
- Placement on Leave of Absence for a determined amount of time
- Suspension from the program for up to one year with the stipulation that remedial activities may be prescribed as a condition of later readmission. Students who meet the readmission condition must apply for readmission and the student will be admitted only on a space available basis. See the Graduate School Academic Policies & Procedures: Readmission to Graduate School: http://www.grad.wisc.edu/education/acadpolicy/guidelines.html#146
- Suspension from the program. The suspensions may range from one semester to four years.
- Dismissal from the program
- Denial of a degree

Depending on the type and nature of the misconduct, the Division of Student Life may also have grounds to do one or more of the following:

- Reprimand
- Probation
- Suspension
- Expulsion
- Restitution
- A zero/failing grade on an assignment/exam
- A lower grade or failure in the course
- Removal from course
- Enrollment restrictions in a course/program
- Conditions/terms of continuing as a student
Grievance Procedures & Reporting Misconduct

Grievance Procedures
If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. Students’ concerns about unfair treatment are best handled directly with the person responsible for the objectionable action. If the student is uncomfortable making direct contact with the individual(s) involved, they should contact the advisor or the person in charge of the unit where the action occurred (program or department chair, section chair, lab manager, etc.). Many departments and schools/colleges have established specific procedures for handling such situations; check their web pages and published handbooks for information. If such procedures exist at the local level, these should be investigated first. For more information see the Graduate School Academic Policies & Procedures: Grievances & Appeals: https://grad.wisc.edu/documents/grievances-and-appeals/

Procedures for proper accounting of student grievances:

1. The student is encouraged to speak first with the person toward whom the grievance is directed to see if a situation can be resolved at this level.
2. Should a satisfactory resolution not be achieved, the student should contact the program’s Grievance Advisor or Director of Graduate Study to discuss the grievance. The Director of Programs, who will facilitate problem resolution through informal channels and facilitate any complaints or issues of students. The first attempt is to help students informally address the grievance prior to any formal complaint. Students are also encouraged to talk with their faculty advisors regarding concerns or difficulties if necessary. University resources for sexual harassment, discrimination, disability accommodations, and other related concerns can be found on the UW Office of Equity and Diversity website: https://www.oed.wisc.edu/.
3. Other campus resources include
   - The Graduate School - https://grad.wisc.edu/
   - Employee Assistance Office – https://eao.wisc.edu/
   - Ombuds Office - https://ombuds.wisc.edu/
4. If the issue is not resolved to the student’s satisfaction the student can submit the grievance to the Grievance Advisor (do we have one of these?) in writing, within 60 calendar days of the alleged unfair treatment.
5. On receipt of a written complaint, a faculty committee will be convened by the Grievance Advisor to manage the grievance. The program faculty committee will obtain a written response from the person toward whom the complaint is directed. This response will be shared with the person filing the grievance.
6. The faculty committee will determine a decision regarding the grievance. The Grievance Advisor will report on the action taken by the committee in writing to both the student and the party toward whom the complaint was directed within 15 working days from the date the complaint was received.
7. At this point, if either party (the student or the person toward whom the grievance is directed) is unsatisfied with the decision of the faculty committee, the party may file a written appeal. Either party has 10 working days to file a written appeal to the School/College.
8. Documentation of the grievance will be stored for at least 7 years. Significant grievances that set a precedent will be stored indefinitely.
The Graduate School has procedures for students wishing to appeal a grievance decision made at the school/college level. These policies are described in the Graduate School's Academic Policies and Procedures: https://grad.wisc.edu/acadpolicy/#grievancesandappeals

**Reporting Misconduct and Crime**

The campus has established policies governing student conduct, academic dishonesty, discrimination, and harassment/abuse as well as specific reporting requirements in certain cases. If you have a grievance regarding unfair treatment towards yourself, please reference the procedures and resources identified above. If you learn about, observe, or witness misconduct or other wrongdoing you may be required to report that misconduct or abuse. Depending on the situation, it may be appropriate to consult with your advisor, Graduate Program Coordinator, or other campus resources (such as the UW Office of Equity and Diversity, Graduate School, Mc Burney Disability Resource Center, Employee Assistance Office, Ombuds Office, and University Health Services).

**Research Misconduct Reporting**

The University of Wisconsin-Madison strives to foster the highest scholarly and ethical standards among its students, faculty, and staff. Graduate students and research associates are among the most vulnerable groups when reporting misconduct because their source of financial support and the progress in their careers may be at risk by raising questions of wrongdoing. They are also often the closest witnesses to wrongdoing when it occurs and therefore must be appropriately protected from the consequences of reporting wrongdoing and be informed of their rights. Please find full details at http://www.grad.wisc.edu/research/policyrp/ReportingMisconduct.html

**Academic Misconduct Reporting**

If you know a classmate is cheating on an exam or other academic exercise, notify your professor, teaching assistant or proctor of the exam. As a part of the university community, you are expected to uphold the standards of the university. Also, consider how your classmate's dishonesty may affect the overall grading curve and integrity of the program.

**Sexual Assault Reporting**

Faculty, staff, teaching assistants, and others who work direct with students at UW-Madison are required by law to report first-hand knowledge or disclosures of sexual assault to university officials, specifically the Office for Equity & Diversity or the Division of Student Life. This effort is not the same as filing a criminal report. Disclosing the victim’s name is not required as part of this report. Please find full details at http://www.oed.wisc.edu/sexualharassment/assault.html

**Child Abuse Reporting**

As a UW-Madison employee (under Wisconsin Executive Order #54), you are required to immediately report child abuse or neglect to Child Protective Services (CPS) or law enforcement if, in the course of employment, the employee observes an incident or threat of child abuse or neglect, or learns of an incident or threat of child abuse or neglect, and the employee has reasonable cause to believe that child abuse or neglect has occurred or will occur. Volunteers working for UW-Madison sponsored programs or activities are also expected to report suspected abuse or neglect. Please find full details at https://oed.wisc.edu/child-abuse-and-neglect-reporting/
Reporting and Response to Incidents of Bias/Hate
The University of Wisconsin-Madison values a diverse community where all members are able to participate fully in the Wisconsin Experience. Incidents of Bias/Hate affecting a person or group create a hostile climate and negatively impact the quality of the Wisconsin Experience for community members. UW-Madison takes such incidents seriously and will investigate and respond to reported or observed incidents of bias/hate. Please find full details at http://www.students.wisc.edu/rights/what-if-i-witness-or-experience-a-bias-related-incident/
Funding and Financial Information

The MS Degree Program in Biomedical Data Science does not currently provide guaranteed funding. For students who are looking for funding to support your graduate studies, the Graduate School provides a complete description of the various types of funding on campus, at https://grad.wisc.edu/funding/

Graduate Assistantships – Research Assistant (RA), Teaching Assistant (TA), Project Assistant (PA), Trainee, or Fellowship
Graduate assistantships with an appointment of 33.33% or higher (>13 hours/week) are provide with multiple benefits: https://grad.wisc.edu/funding/graduate-assistantships/
- A monthly stipend, https://grad.wisc.edu/funding/graduate-assistantships/
- Remission of both resident and non-resident tuition. Students will still need to pay segregated fees (https://registrar.wisc.edu/segregatedfees/)

Graduate assistants are paid on a monthly basis and stipends are deposited directly into student’s bank accounts. You can authorize direct deposit by filling out the Authorization for Direct Deposit of Payroll form (https://uwservice.wisconsin.edu/docs/forms/pay-direct-deposit.pdf) and returning it to the Payroll Specialist in the department providing the funding.

Enrollment Requirements for Graduate Assistants
Maximum levels of appointment are established by the university. The Maximum level for each appointment can be found here: https://grad.wisc.edu/documents/maximum-levels-of-appointments/
International students should be aware of maximum levels of employment. For more information on this policy, please visit https://iss.wisc.edu/employment/.

Questions?

Students should consult the Payroll & Benefits Specialist Maureen Maletta for all questions concerning benefits either via email at maletta@wisc.edu by phone at 608-265-9909 or in person at 750 Highland Ave, 4th Floor Heath Sciences Learning Center (HSLC)
Completing a Graduate Degree

Requirements for Completing a Graduate Degree
You must meet both the program and the Graduate School requirements for graduation. It is your responsibility to notify the Department Graduate Program Coordinator by the deadline of your intention to graduate. The department must request your degree warrant a minimum of three weeks before the degree deadline.

Completing Your Degree
To understand the steps you need to take in order to graduate, for deadlines and submitting warrants go to the Graduate Schools website for either the MS or PhD degree.
   For a Master’s degree: https://grad.wisc.edu/current-students/masters-guide/
   For a PhD Degree: https://grad.wisc.edu/current-students/doctoral-guide/

Transcripts
The Registrar posts degrees on official transcripts approximately four to six weeks after the end of the semester. You can order transcripts at the Office of the Registrar. Call 608-262-3811 for more information.

Diploma
The Office of the Registrar will send your diploma to your DIPLOMA address approximately 12 weeks after degree conferral. Update your Diploma address via My UW prior to leaving campus. International students: you MUST enter your DIPLOMA address via My UW to receive your diploma.

International mailing address for diploma and certification of graduation
If you wish to have your diploma sent to an address outside of the U.S., tell the Registrar ahead of time at 333 East Campus Mall #10101. Certification letters are always sent by air mail.

Commencement
Once a student has met their degree requirements, they may choose to attend a fall or spring commencement ceremony. Students should reference the university’s website regarding commencement details such as applying to graduate, preparing for the ceremony, i.e. proper attire, dates and times and location. Biomedical Data Science degrees will graduate with the School of Medicine and Public Health with the Doctoral, Medical Professional, Master of Fine Arts, and Honorary Degrees.

Traditionally, Ph.D. students are escorted by their faculty advisor. Ph.D. students should discuss their commencement plans with their advisor.