



**BIostatISTICS**

School of Public Health

**2020-2021**

# **STUDENT GUIDEBOOK**

SCHOOL OF  
**PUBLIC HEALTH**

UNIVERSITY OF MINNESOTA

## Welcome to the University of Minnesota School of Public Health!

This guidebook contains important information about SPH and University policies and resources that enable students to better navigate their academic journey and get the most out of their student experience. By combining this Guidebook with your program-specific Student Guidebook you will have a comprehensive reference that will answer most questions about academics, the University environment, policies, expectations, and the many resources available to students. Please note that this guidebook augments and is not a substitute for other sources of information. There are many additional resources available to graduate students that are listed throughout this handbook.

Refer to your Guidebook to ensure that you are informed of the essentials of student life but remember that your University-assigned student email account is the School's official means of communication. You are responsible for managing all information sent via the student email account.

All advising faculty have access to this guidebook. Please work with your adviser when making important decisions relating to your program.

Links to many policies and procedures can be found by clicking on the "Current Students" link at [sph.umn.edu/current/resources/](http://sph.umn.edu/current/resources/).

*The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.*

This publication can be made available in alternative formats for people with disabilities. Direct requests to the Student Services Center, School of Public Health, MMC 819 Mayo, 420 Delaware Street SE, Minneapolis, MN 55455; (612)626-3500 or (800)774-8636.

**7/2/2020**

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# 1. THE SCHOOL OF PUBLIC HEALTH

## 1.1 ABOUT THE SCHOOL

Through excellence in education, research, and community engagement, the University of Minnesota School of Public Health advances health, from scientific discovery to public impact, by enhancing population health and preventing disease in the United States and globally.

In 1874, Charles Hewitt, the secretary of the Minnesota State Board of Health, began offering a class at the University of Minnesota covering topics in personal and community hygiene, epidemic diseases, and physiology. In the following decades, various University departments created programs in public health disciplines, such as biostatistics, environmental health, and epidemiology. In 1944, the University brought all these activities together under one roof and created the School of Public Health.

Today, our school ranks ninth in the nation, serves more than 1,600 students to help meet the increasing demand for a public health workforce. We were the first in the country to grant a master's degree in hospital administration, establish a doctoral program in epidemiology, and, in 1950, launch a graduate program in maternal and child health.

At the School of Public Health, we leave no stone unturned as we tackle the world's most critical public health problems. Our faculty, staff, and students bring innovative thinking and concrete action to emerging and persistent challenges, including structural racism, gun violence, our expanding aging population, and a changing climate. As one of the premier schools of public health in the world, we prepare some of the most influential leaders in the field, and provide the knowledge health departments, communities, and policymakers need to make the best decisions about population health.

### Proven Impact — our research has led to:

- Creation of the mathematical models that help guide Minnesota's response to COVID-19
- Minnesota's first report card for quality of life in nursing homes
- Fully accessible buildings for people with disabilities
- The first comprehensive definition of childhood abuse and neglect
- Restrictions of tanning bed use by people 18 years of age and younger
- Legislation to cover doula care through Medicaid
- Life-saving treatment protocols for HIV-positive people
- A nationwide model to track foodborne illness outbreaks
- A standard for reading ECGs in a universally acceptable way
- A model to predict probability of complications from radiation therapy.

### School of Public Health Faculty List

For a listing of faculty, research and specialties refer to <https://directory.sph.umn.edu/>.

### Health Sciences

The Health Sciences is home to six colleges and schools (including the School of Public Health), more than 150 centers and institutes, hospitals and clinics. About 70 percent of Minnesota's health care providers received their training at the University of Minnesota.

The School of Public Health is one of only three schools of public health nationwide with the support structure of a health sciences education center. This means that our health professionals and students work and learn together and take a skilled systems approach to some of the top health issues facing the world today. Doctors train with pharmacists, public health workers partner with veterinarians, and nurses collaborate with dentists.

### Accreditation

The School of Public Health is accredited by the Council on Education and Public Health (CEPH). The benefits of accreditation are many [ceph.org/constituents/students/benefits-of-accreditation/](https://www.ceph.org/constituents/students/benefits-of-accreditation/). CEPH accreditation serves multiple purposes for different constituents. In general, specialized accreditation attests to the quality of an educational program that prepares for entry into a recognized profession.

- For the public, accreditation promotes the health, safety and welfare of society by ensuring competent public health professionals.
- For prospective students and their parents, accreditation serves a consumer protection purpose. It provides assurance that the school or program has been evaluated and has met accepted standards established by and with the profession.

- For prospective employers, it provides assurance that the curriculum covers essential skills and knowledge needed for today's jobs.
- For graduates, it promotes professional mobility and enhances employment opportunities in positions that base eligibility upon graduation from an accredited school or program.
- For public health workers, it involves practitioners in the establishment of standards and assures that educational requirements reflect the current training needs of the profession.
- For the profession, it advances the field by promoting standards of practice and advocating rigorous preparation.
- For the federal government and other public funding agencies, it serves as a basis for determining eligibility for federally funded programs and student financial aid.
- For foundations and other private funding sources, it represents a highly desirable indicator of a program's quality and viability.
- For the university, it provides a reliable basis for inter- and intra-institutional cooperative practices, including admissions and transfer of credit.
- For the faculty and administrators, it promotes ongoing self-evaluation and continuous improvement and provides an effective system for accountability.
- For the school or program, accreditation enhances its national reputation and represents peer recognition.

MPH Competencies, established and required from the Council on Education for Public Health (CEPH), can be found in Appendix A. [intranet.sph.umn.edu/wp-content/uploads/2019/01/foundational-ceph-compentencies-sept-5.pdf](http://intranet.sph.umn.edu/wp-content/uploads/2019/01/foundational-ceph-compentencies-sept-5.pdf).

## 1.2 SCHOOL OF PUBLIC HEALTH STUDENT SERVICES CENTER

**Location:**

Mayo Memorial Building, Room A395

**Email:** [sph-ask@umn.edu](mailto:sph-ask@umn.edu)

**Office Hours:**

Monday – Friday, 8:00 AM - 4:30 PM

**Mailing Address:**

Student Services Center  
 School of Public Health  
 MMC 819, Rm A395 Mayo Bldg  
 420 Delaware Street SE  
 Minneapolis, MN 55455-0381

**Telephone:** (612) 626-3500 or (800) 774-8636

**Fax:** (612) 624-4498

### School of Public Health Student Services Center

The Student Services Center (SSC) is a school-wide office that assists students with all phases of their academic journey. The SSC staff works closely with each academic division and program to administer school-wide services and policies.

The Student Services Center is dedicated to serving a diverse community of future and current SPH students by enhancing the student experience, supporting the achievement of educational and career goals, and empowering future public health leaders.

We coordinate many functions including:

- |                                   |  |                    |
|-----------------------------------|--|--------------------|
| • Student Organization Support    | • Registration   | • Commencement     |
| • Diversity, Equity & Inclusion   | • Degree Clearance   | • SPH Apparel Sale |
| • Career & Professional Education | • Applications and Admissions                                |                    |
| • Mental Health Advocacy          | • Applied Practice Experience/<br>Criminal Background Checks |                    |
| • SPH Scholarships                |  |                    |

Meet the staff and learn about the services provided at the SSC by clicking [here](#).

### Career and Professional Development

The Career and Professional Development Center offers a variety of services and resources to assist you in your efforts to pursue advanced education and to locate and apply for professional positions. Our Center believes that every individual has unique potential and should have the opportunity to pursue a meaningful and fulfilling career. Our goal is to facilitate the career and professional development process with you to ensure you have the confidence in conducting a competitive job search and help you maximize your career potential. We do so by offering one-on-one career coaching, programming, and online resources.

The Career and Professional Development website at [www.sph.umn.edu/careers/](http://www.sph.umn.edu/careers/) has many links to help you start your new career, including:

- **One-on-One Career Coaching:** You can schedule individual appointments with one of our award-winning, evidence-based career coaches, Vic Massaglia and Darren Kaltved, to discuss any career or professional development topics, from creating a top-notch resume to ideas for field experiences, interviewing, and presentation skills. Appointments are also available via video or phone. To schedule an appointment, please visit <https://sphcareers.appointments.umn.edu> or email [sphcareers@umn.edu](mailto:sphcareers@umn.edu).
- **Jobs & Internships:** Our online job posting system includes listings for internships, graduate assistantships and fellowships, volunteer, part-time, and full-time career opportunities: <https://z.umn.edu/sphjobs>.
- **Career Resources:** General career-related links, guides, and tip sheets on a variety of job-search related topics: [www.sph.umn.edu/careers/students/](http://www.sph.umn.edu/careers/students/).

### 1.3 MENTOR PROGRAM

Our mentor program connects public health students to public health professionals to help with career and professional development. Mentoring relationships benefit both mentors and mentees. For mentees, the program can have a key impact on future career choices. For mentors, helping the next generation of public health leaders can be rewarding and impactful.

The School of Public Health boasts the largest mentor program of any school of public health, serving approximately 400 students and mentors annually with special events and helpful resources for mentor pairs. We work to provide students with diverse professional experiences and recognize the role that mentors have in training future public health leaders.

For more information, visit <https://www.sph.umn.edu/current/mentor/>.

### 1.4 SPH STUDENT SPHERE

Make use of the SPH Student SPHere to relax or study with your student colleagues. All students enrolled in an SPH degree program have access to the SPH Student SPHere (Mayo A-150) via their U Card. The SPHere has the following amenities:

- **Locker Room:** Free lockers are assigned in the Student Services Center (Mayo A-395). Students are able to renew their locker each year and need only provide their own lock.
- **Kitchen Area:** Tables, chairs, microwaves, refrigerators, and a sink are all accessible in the student kitchen. As this is a shared space, students are expected to pick up after themselves and clean any mess created during personal food preparation.
- **Lounge Area:** Couches, chairs, and wireless internet all create a perfect place for students to meet, study, or simply relax.
- **Study Room:** White boards, tables, chairs, computers with internet connectivity, Microsoft Office, SAS and STATA software and a printer are all freely available to SPH students.

Please report any issues with computer systems, printers, trash, or other problems to [sph-ask@umn.edu](mailto:sph-ask@umn.edu), or stop by Mayo A-395.

Please work together to ensure that the SPHere is a comfortable and safe place.

- Keep all areas of the SPHere clean in consideration of others.
- Please protect the security of access. Do not allow anyone to enter behind you that you do not know to be a SPH student. Never prop the door open for any reason. The student commons is for SPH students only.
- If you are aware of a breach of security or if you see something in the commons that needs repair, please report it to the SSC (A-395 Mayo) as soon as possible.
- Avoid being alone in the commons during the evening or early morning.
- If you believe you are in danger or see any improper activity in progress, call 911.

#### Printing in the SPHere

The School of Public Health (SPH) provides \$100 worth of printing (1,000 pages) for each Fall and Spring semester on your U Card. This value can only be used in the SPHere computer lab (Mayo A-151) and is not valid in any other campus computer lab, including the libraries.

When you swipe your card at a print release station, UniPrint will show a balance on the screen. This balance is a combination of the print value given to you by SPH and your Gopher GOLD balance. In order to determine how much print value you have left, you need to subtract your Gopher GOLD balance from the balance shown on screen. Once the \$100 SPH Print Value is exhausted, printing costs will be deducted from your Gopher GOLD account. To view

your current balance and transaction history or to add value to your Gopher GOLD account online, please visit [ucard.umn.edu/umtc/deposit](http://ucard.umn.edu/umtc/deposit). If you experience any printing issues or need to request a refund, please contact the lab attendant or call the SPH Student Services Center at (612) 626-3500.

## 1.5 APPLIED PRACTICE LEARNING AGREEMENT

All students pursuing a required Applied Practice (AP), or summer residency must complete an online learning agreement prior to beginning the experience. The online form provides a streamlined process that is comprehensive for you, your preceptors, your faculty advisor and your program coordinator. Please refer to the current student website for this and other resources related to the AP [sph.umn.edu/current](http://sph.umn.edu/current). Students exploring international AP opportunities need to begin the process six to eight weeks before departure and need to be aware of requirements specific to international travel.

More detailed information about AP can be found in the program portion of the guidebook.

## 1.6 MINORS

### Minors

SPH students pursuing an MHA, MPH, MS, or PhD are eligible to declare a minor in other areas. For a listing of graduate level minors please visit [onestop2.umn.edu/pcas/viewCatalogSearchForm.do](http://onestop2.umn.edu/pcas/viewCatalogSearchForm.do).

A current listing of SPH-related minors and instructions for declaring can be found online [www.sph.umn.edu/academics/degrees-programs/minors/](http://www.sph.umn.edu/academics/degrees-programs/minors/).

## 1.7 ONLINE LEARNING AND E-LEARNING RESOURCES

Students can access their online courses, as well as support sites for hybrid and face-to-face courses at [myu.umn.edu](http://myu.umn.edu). All students taking SPH courses are welcome to enroll in the SPH E-Learning Resources course site at [z.umn.edu/sphlearningresources](http://z.umn.edu/sphlearningresources). You will have access to a variety of resources to support you in navigating University resources, such as the Libraries and Center for Writing. You must have a university ID in order to access Canvas.

Students in online courses will receive a welcome email approximately one week before the semester begins, which will detail when you can access the course sites. If you have questions, please contact [sph-elearningsupport@umn.edu](mailto:sph-elearningsupport@umn.edu).

## 1.8 SURVEYS

### Graduate Student Experience in Research University

The Graduate Student Experience in the Research University (SERU) is the only comprehensive survey of graduate and professional students at the University of Minnesota. This survey provides a powerful way for students to tell us about what's working well, and what not so well, in classrooms, labs, and campus life.

The University of Minnesota takes the results seriously in order to enhance programs and curricula, improve student services and policies, strengthen research and scholarship opportunities, and ensure a vibrant and supportive environment for all students.

To ensure confidentiality, gradSERU is hosted by the [Social & Economic Sciences Research Center \(SESRC\)](#). Neither the University of Minnesota Graduate School nor colleges/programs have access to identifiable response data. To verify eligibility, students are required to log-in to the survey using their Student ID number.

### SPH Student Engagement Survey

Students are also strongly encouraged to evaluate and comment on the school and its programs through our annual SPH Student Engagement Survey. The survey covers many aspects of the student experience including field placements, career services, financing, and overall service. Students in EMHA and EPHAP will receive the Student Engagement Survey during the fall term; all other students will receive the survey during the spring term.

## Career Survey

Recent graduates are required to complete the Career Survey. The survey captures important employment information, follows up on educational plans, compensation norms, and contact information. The School is required to collect this information as it relates to both accreditation standards and program improvement.

To complete the SPH Career survey go to [https://umn.qualtrics.com/jfe/form/SV\\_doRfMjgZueRCpNP](https://umn.qualtrics.com/jfe/form/SV_doRfMjgZueRCpNP).

## 1.9 THE ROLES OF YOUR ADVISING TEAM

The School of Public Health provides advising that promotes collaboration among students, staff, and faculty to enhance students' academic and professional development in the field of public health. The School's goal is to promote educational and experiential excellence that prepares students for successful careers improving the health of populations.

### Defining Advising

The School of Public Health is committed to creating and sustaining high quality advising in the following four areas:

1. **Administrative Advising:** Advising on course planning and scheduling, policies, procedures, and benchmarks of the degree program, SPH, and the University. Your program coordinator is your first point of contact for these questions.
2. **Academic Advising:** General guidance on topics related to program/major including, but not limited to, program focus (may include identifying appropriate coursework options), project selection and career planning. Students find their faculty advisors, coordinators, and career services staff helpful in answering these questions.
3. **Applied Practice/Internship/Practicum Advising:** Specific and targeted advising for Applied Practice, internship, and practicum development, placement, and completion. Your faculty advisor can assist you as you select the type of Applied Practice that best matches your goals.
4. **Masters Project/Thesis/Plan A&B/Dissertation Advising:** Specific and targeted direction on a master's project or a PhD dissertation including, but not limited to: development, completion, and in some cases publication. Your faculty advisor will assist you in developing a direction for your project or dissertation.

### Advising Expectations for Students

SPH students are expected to:

- Regularly read and respond to University email; email is the official mode of communication at the University of Minnesota.
- Review program objectives and educational documents at least once per semester, or when directed by program coordinator or program director/Director of Graduate Studies; students are responsible for knowing the requirements of the degree program.
- Actively contribute to a welcoming and supportive student climate.
- Initiate meetings with advisors at least once per semester; regularly communicate with faculty advisors and/or program coordinators about program progress.
- Respond to inquiries from faculty or staff in a timely manner.
- Behave in a professional and courteous manner; fulfill educational and advising commitments, such as appointments, project deadlines, etc.

## 1.10 EXPECTATIONS FOR CLASS PARTICIPATION

"Good discussion involves people trying to build on, and synthesize comments from others, and on showing appreciation for others' contributions. It also involves inviting others to say more about what they are thinking."  
- Dr. Stephen Brookfield of St. Thomas University, Minneapolis, MN

Employers expect their employees to work effectively on teams and this has led to a competency required for an MPH degree: "Perform effectively on interprofessional teams." Thus, a portion of your grade in class may be based on quality participation in group-based activities. We are providing the following examples\* to let you know what we expect for all communications in the class. These apply to in-person or online discussions and to interactions between both students and members of the faculty and staff.

- Imagine your interactions are with colleagues in a workplace.
- Show you are interested in what another person wrote or said.

- Encourage another person to elaborate on something they have already said.
- Provide a resource (a reading, web link, video) not covered in the syllabus that adds new information/perspectives to our learning.
- Summarize conversations so far and/or suggest new directions and questions to be explored in future.
- Summarize several people's contributions and reflect a recurring theme in the discussion.
- Comment that you found another person's ideas interesting or useful; be specific as to why.
- Paraphrase, at least partly, a point someone has already made.
- Seek assistance from others in understanding course content.
- Offer your explanations or solutions to others seeking help in understanding course content.
- Be succinct; avoid extraneous information.
- Address the point of the discussion; stay on topic.
- Provide constructive criticism where feedback or a critique is required.
- Avoid sarcasm, particularly in an online environment where it can create confusion.
- Avoid vitriol, this can create a hostile environment and does not add information.
- Keep your communication professional and refrain from using rude or offensive language.

\*We thank Dr. Brookfield of St. Thomas University, Minneapolis, for some of these tips.

## 1.11 COMMENCEMENT ELIGIBILITY

Students enrolled in MPH, MHA, or MS programs are eligible to participate in the May Commencement Ceremony if they are on track to complete course credit requirements by the end of the spring or summer semester or have completed the necessary course credit requirements the previous summer or fall semester.

Exceptions may be granted on an individual basis per review by the program coordinator and program director. To seek an exception, please contact your program coordinator.

## 2. THE UNIVERSITY OF MINNESOTA

### 2.1 U OF M BASICS

#### University Identification Numbers and Accounts

[umn.edu/initiate](http://umn.edu/initiate)

All students and employees at the University of Minnesota are issued two unique identifiers. One is a seven digit student ID number which is sent to students in their acceptance letter, the other is an Internet ID (sometimes referred to as your "X500"). Your U of M Internet ID is the key to online services such as your University email account, Google apps, registration, library access, tuition, billing statements, and more.

Your ID number and Internet ID stay the same on all coordinate campuses and through any role changes (student to staff, staff to student, faculty to staff, etc.) and they will never be reassigned to another person. Each student attending the University of Minnesota must set up a student internet/email account by going to [www.umn.edu/initiate](http://www.umn.edu/initiate) or by calling the Technology Help Line at (612) 301-4357 (1-HELP).

#### Email

[gmail.umn.edu](http://gmail.umn.edu)

The University provides students with an email account upon the student's matriculation to the institution. Your University email address is: [your Internet ID]@umn.edu. This account is free of charge and is active as long as you remain active as a student. The Office of Information Technology posts information on their website about end of life account policies. Please see <https://z.umn.edu/5law>. A University-assigned student email account is the University's official means of communication with all students. Students are responsible for all information sent to them via their University assigned email account. Course lists, immunizations, billing statements, financial aid updates, and other important information will be sent via the U of M student email address.

The School of Public Health relies heavily on email notices to students, staff, and faculty. To keep current on upcoming events, job announcements, new course announcements, scholarships, internships, the SPH newsletter, and good opportunities, students should check their email regularly.

If a student chooses to forward the provided University email account, the student is responsible for all information, including attachments, sent to any other email account. Because of this, it is strongly recommended that students use their U of M email account and do not transfer it to a personal email account.

## Duo Security

The University of Minnesota is taking meaningful action to help students, faculty, and staff safeguard themselves against cybercrime. Duo Security, or two-factor authentication, is required at the University of Minnesota Sign-in page. The Sign-in page is the University's gateway to applications such as MyU, Gmail, Calendars, Docs, Canvas, and many other programs.

Enroll Now:

- Visit [my-account.umn.edu](https://my-account.umn.edu) and choose Password Management from the self-service menu on the left.
- Select reset your UMN password. Follow the instructions on the page.
- As soon as you've reset your password, you will be guided through the Duo enrollment process.

If you use Duo Security to sign in to University applications, you are strongly encouraged to set up back-up devices in Duo Security so that you are prepared in the event that your primary Duo device is unavailable. Learn about back up devices at [it.umn.edu/duo-use-backup-device](https://it.umn.edu/duo-use-backup-device).

As a Duo user, it is your responsibility to come prepared to sign in to applications necessary for class activities, including exams and quizzes. If you are unable to sign in, you may lose points for the class activity. Failure to bring your Duo device or a back-up is not an excused absence or a valid reason for make-up work.

Learn more about Duo Security at <https://z.umn.edu/5ktd>.

## One Stop

[onestop.umn.edu](https://onestop.umn.edu)

One Stop Student Services is a resource for how things work at the University. One Stop falls under the umbrella of Academic Support Resources (ASR), which supports many functions for the University of Minnesota system campuses and Twin Cities Graduate School and Professional Schools. ASR also includes the Office of the Registrar, the Office of Student Finance, Office of Classroom Management, ASR- IT, and Continuity and Compliance.

The One Stop website is your source for general information about registration, financial aid, tuition and billing, grades and transcripts, dates and deadlines, financial wellness, veteran's benefits, and many other University resources.

One Stop counselors are also available to help you in-person at any of their three service centers: on the East Bank in Bruininks Hall, in the West Bank Skyway, or on the St. Paul campus in Coffey Hall. They provide walk-in services to students, no appointments necessary. You can also get your questions answered by calling or emailing One Stop. One Stop Counselors are certified financial managers and are available for confidential, one-on-one financial wellness appointments that cover a range of topics from budgeting, spending plans, credit, and much more. Call or email One Stop to learn more about this free service.

## MyU

[myu.umn.edu](https://myu.umn.edu)

While you can contact One Stop or visit the One Stop website to seek out information, you will use the MyU website to complete your University business. MyU is the official University of Minnesota web portal, personalized for you. It is where you'll register for classes, manage financial aid and billing, maintain your personal info, and much more.

## U Card

[www.umn.edu/ucard](https://www.umn.edu/ucard)

Your U Card can give you access to campus buildings and different accounts based on your role or status at the University. Your first U Card is free and can be obtained at the U Card Office. Bring your driver's license, state ID, or passport and be prepared to have your picture taken.

### Accounts on the U Card

- Meal Plan
- Student Account
- Gopher GOLD Account
- FlexDine Account
- Library Account
- Department/College Printing
- TCF U Card Checking Account (Optional)

### Additional services with your U Card

- Parking and Transportation Services (Bus & Metro Pass) - Purchase pass after you get your U Card
- Discounts
- Attendance verification card

### Building Access with U Card

- Residential Halls
- Recreation and Wellness Center
- Secured Buildings

## 2.2 UNIVERSITY OF MINNESOTA CALENDARS

The official University Calendar can be found at [onestop.umn.edu](http://onestop.umn.edu). Refer to this resource for academic calendars, drop/add deadlines, and other scheduling-related needs.

Additional calendar resources:

- School of Public Health-specific events, <http://www.sph.umn.edu/events-calendar/>.
- Health Sciences resource hub, <https://health.umn.edu>.
- Zoom is used for remote meetings and academic instruction. To learn more about zoom function and usage visit <https://z.umn.edu/5lb2>.

## 2.3 CAMPUS SERVICES

### Parking and Transportation

[pts.umn.edu](http://pts.umn.edu)

The University's Parking and Transportation website has a wealth of information concerning getting to and around campus. Parking is extremely limited on campus and we encourage students to bus, bike, or walk if possible.

- **Campus Shuttle Buses:** Campus shuttle buses run at no charge between the East Bank, West Bank, and St. Paul campuses with varying routes and times. Current schedule information is posted on the above listed website as well as various locations throughout the Twin Cities campus.
- **Metro Transit and the U Pass:** Take advantage of the deeply discounted Metro Transit bus pass. U-Pass is the ultimate transit pass that provides unlimited rides 24 hours a day. It is valid on all regular bus and light-rail train routes, as well as express, local, limited-stop, or Downtown Zone routes. It may not, however, be used on some special event services. Information can be found at [www.pts.umn.edu/bus/upass](http://www.pts.umn.edu/bus/upass).
- **Parking:** Contract parking for students is sold through a lottery system each semester. Locations may vary but include spaces on the East Bank, West Bank, and St. Paul campuses. Hourly parking is available in several University public facilities. Parking rates vary depending on proximity to campus and the facility type. Visit the Parking and Transportation website, [www.pts.umn.edu](http://www.pts.umn.edu), or call (612) 626-PARK (7275) for more information.

The Motorist Assistance Program offers free services (unlocking vehicles, jump-starts, changing flat tires, and referral to a service station) to all customers parked in U parking facilities. Hours are Monday through Thursday from 7:00 AM to midnight, Friday from 7:00 AM to 10:00 PM. (Service is not available on weekends or official University holidays). Call (612) 626-PARK for any motorist assistance needs.

Disability parking is available in many parking facilities and metered areas. Use of these designated spaces requires a state-issued permit or license plate. For additional information, call the State of Minnesota at (651) 296-6911 or review the UMN Disability Parking content online at [www.pts.umn.edu/park/disability](http://www.pts.umn.edu/park/disability).

### Housing

[housing.umn.edu](http://housing.umn.edu) & [ocl.umn.edu](http://ocl.umn.edu)

The University's Office of Housing & Residential Life is the best resource for finding housing on or near campus. Additionally, Off-Campus Living provides a variety of services and programs intended to meet the practical, social and advocacy needs of students living off campus.

### Maps

[campusmaps.umn.edu](http://campusmaps.umn.edu)

Find the way to any University building.

### Digital Signage

The School of Public Health has two different digital signs that provide information specific to the public health students. These can be found on the third floor of the Mayo building near the Dean's office in Mayo A-302 and the third floor of the West Bank Office Building (WBOB).

## Dining

[dining.umn.edu](http://dining.umn.edu)

University Dining Services offers a wide variety of dining experiences throughout the Twin Cities campus.

## 2.4 HEALTH AND WELL-BEING

### University-Sponsored Student Health Benefit Plan

[shb.umn.edu](http://shb.umn.edu)

The University requires all students to have health care coverage to ensure they have access to medical care and can maintain good health, which is essential for academic success. This requirement is University-wide and not specific to the School of Public Health.

The Office of Student Health Benefits (OSHB), a unit of the Office for Student Affairs, administers health, dental, and other benefits and enrollment for all eligible University students, residents, fellows, and interns.

All students who are admitted to a degree program and registered for six or more credits per semester (or three or more credits during summer term) that count towards the automatic assessment of the Student Services Fee are required by the University of Minnesota to have health plan coverage. Students who meet both criteria are automatically enrolled in the University-sponsored Student Health Benefit Plan (SHBP). The Student Health Benefit Plan is a cost-effective, comprehensive health plan designed to meet the unique needs of students. Students may choose to waive the University-sponsored Student Health Benefit Plan by providing proof of enrollment in an alternative Eligible Health Plan. Please contact the Office of Student Health Benefits to determine your exact eligibility status.

Graduate Assistants (GA), Teaching Assistants (TA), and Research Assistants (RA) may be eligible for the Graduate Assistant Health Plan (GAHP), which is different from the standard SHBP. Please consult the OSHB for more details.

The University also requires all international students and their dependents to purchase the University-sponsored Student Health Benefit Plan unless they are eligible for a waiver. International scholars visiting the University for more than 31 days are also required to enroll in the University-sponsored Student Health Benefit Plan. Scholars who will be at the University for 31 days or less may choose not to enroll in the University-sponsored Student Health Benefit Plan, but are required to carry their own health plan coverage for the duration of their visit to the University and must meet J-1 U.S. Federal regulation requirements.

### Long Term Care Disability Insurance Fee

[shb.umn.edu](http://shb.umn.edu)

Health Sciences students, which includes the School of Public Health, enrolled in a qualifying Health Sciences program will be automatically covered under a group Long Term Disability plan while a student. This coverage is not optional. They will see a charge for this coverage on their student account once at the beginning of each fall and spring semester. Payment of this fee for two consecutive semesters provides year around coverage until graduation from their program.

### Questions and More Information

Office of Student Health Benefits  
University of Minnesota  
410 Church Street S.E., N323  
Minneapolis, MN 55455

Phone: (612) 624-0627 or 1 (800) 232-9017  
Fax: (612) 626-5183 or 1 (800) 624-9881  
E-mail: [umshbo@umn.edu](mailto:umshbo@umn.edu)  
[www.shb.umn.edu](http://www.shb.umn.edu)

### Boynton Health

[boynton.umn.edu](http://boynton.umn.edu)

Located on the University of Minnesota Twin Cities campus, Boynton Health (BH) is a primary healthcare clinic serving University students, staff, and faculty. BH accepts clients from most health insurance plans.

Boynton provides quality, comprehensive health care services, counseling, and education, beyond the scope of most primary health care clinics:

- Primary and urgent care
- Mental health services
- Dental and eye clinics
- Pharmacy needs
- Women's health
- Physical and massage therapy
- Health promotions such as flu shots and nutrition services

## Student Mental Health Resources

[mentalhealth.umn.edu](http://www.mentalhealth.umn.edu)

As a student you may experience a range of issues that could result in barriers to learning such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating, and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website at <http://www.mentalhealth.umn.edu>.

This website helps connect students to crisis help, counseling services, support groups, and offers tips on helping others who are experiencing stressful events and/or mental health challenges.

**If you or someone you know is having a mental health crisis and/or is in immediate danger, please call 911.**

**If the mental health crisis you are experiencing is not dangerous, but you wish to talk to someone immediately for assistance about what to do next, call or text this 24-hour helpline:**

### **Crisis Connection**

(612) 301-4673 (or from a campus phone 1-4673)

### **U of M Textline**

Text "UMN" to 61222

## SPH Mental Health Advocates

For non-urgent, confidential situations where consultation is desired, the School of Public Health also has several trained Mental Health Advocates who are available to chat about any concerns you as a student are experiencing, or you can consult with them about a colleague or classmate who you believe may need assistance or resources. This consultation can be found in the Student Services Center, Mayo A-395. Drop-in to see if an advocate is available or to make an appointment. You can also email questions to [sph-ask@umn.edu](mailto:sph-ask@umn.edu) with a subject of "Mental Health Advocate", or you can call (612) 626-3500 and ask to see if an advocate is available or to make an appointment.

## Smoke-free University

The University of Minnesota, Crookston, Duluth, Rochester, and Twin Cities are smoke- and tobacco-free campuses. All students, staff, faculty, and visitors are prohibited from smoking and using, selling, free distributing, and advertising tobacco products and electronic cigarettes in all facilities and on all University property.

The success of this policy will depend upon the thoughtfulness, consideration, and cooperation of everyone on campus. All members of the University community are responsible for enforcing this policy. Students, faculty, staff, and visitors who violate this policy should be reminded of the policy and asked to comply. Repeated violation of this policy may be cause for disciplinary action in accordance with applicable student or employee codes of conduct. Visitors who refuse to comply with this policy may be asked to vacate campus property.

## The Aurora Center

[umn.edu/aurora](http://umn.edu/aurora)

The Aurora Center for Advocacy and Education provides crisis intervention and advocacy services to victims and survivors of sexual and relationship violence, harassment, and stalking. The staff and volunteers are also available to provide prevention training and education on a variety of issues.

## Lactation Spaces

[lacsplaces.umn.edu](http://lacsplaces.umn.edu)

Spaces are available on campus offering private and comfortable rooms that are designed specifically for nursing mothers to pump and store breast milk. If you have questions and concerns about lactation spaces or resources, please contact Susan Warfield at [warfi002@umn.edu](mailto:warfi002@umn.edu).

## Recreation & Wellness Center

[recwell.umn.edu](http://recwell.umn.edu)

The University Recreation and Wellness Center, commonly referred to as the RecWell, is a free resource for all students. Located on the University of Minnesota's East Bank Campus, the facility serves between 3,000 and 5,000 patrons on an average weekday during the academic year. The Department of Recreational Sports also offers opportunities for the following activities:

- Aquatics
- Fitness
- Golf
- Intramurals
- Outdoor Recreation
- Sport Clubs
- Wellness
- Youth Programs

## 2.5 DIVERSITY

The University of Minnesota is committed to achieving excellence through equity and diversity. We believe that a diverse student body enhances the academic and social environment for all students and prepares students to thrive in an increasingly diverse workforce and society. Equitable access to education is critical to preparing students for the responsibilities of citizenship and civic leadership in a heterogeneous society. The University strives to provide equitable access and opportunity in its programs, facilities, and employment. The University will also establish and nurture an environment for faculty, staff, students, and visitors that actively acknowledges and values difference and is free from racism, sexism, ageism, homophobia, and other forms of prejudice, intolerance, or harassment.

The global, population-based nature of public health demands that the School of Public Health (SPH) seek and train students of all racial, ethnic, economic, and educational backgrounds. We believe such diversity enriches the learning experience and helps build excellence in public health leadership. The SPH is dedicated to providing our students with a supportive and welcoming academic experience in and out of the classroom. The student led Diversity Matters, and faculty led Health Equity Work Group organizations are designed to address and explore issues of diversity that impact both our school and society at large.

We also strive to create a community that is actively engaging in the areas of diversity and inclusion to create an excellent educational environment. The SPH defines inclusion as all-embracing of the fullness of humanity. Our goal is to recognize differences, address disparities, and to help cultivate understanding within the SPH community. This sense of inclusiveness recognizes that diversity is not limited to a select number of categorical elements of a person but encompasses all of a person's attributes as well as their intersections.

The Associate Director of Equity, and Inclusion, Lauren Eldridge, works with students, staff, faculty, and community members to advance equity and diversity within the SPH. Her office is in A395-3 Mayo Memorial Building and she can be contacted at [eldridg@umn.edu](mailto:eldridg@umn.edu) or at (612) 624-9970.

For more information please visit:

- University policy on Equity & Diversity: <https://z.umn.edu/5ktj>
- Office for Equity and Diversity: <https://diversity.umn.edu/>
- SPH info and resources for Diversity & Inclusion: [sph.umn.edu/about/diversity-inclusion/](https://sph.umn.edu/about/diversity-inclusion/)

In addition, the University has several offices across campus whose purpose is to support underrepresented students and promote diversity. The following is a list of some of those offices:

### **Disability Resource Center**

[diversity.umn.edu/disability](https://diversity.umn.edu/disability)

Location: 108 McNamara Alumni Center, 200 Oak Street SE (East Bank)  
Phone: (612) 626-1333 (Voice/TTY)

Disability Resource Center promotes access and equity for students with disabilities (e.g., physical, learning, psychiatric, sensory or systemic) and assists the University in achieving its mission to provide optimal educational opportunities for all students as well as obligations under federal and state statutes. Students are responsible for contacting Disability Services for more information or to arrange accommodations.

### **Graduate School Diversity Office**

[grad.umn.edu/diversity](https://grad.umn.edu/diversity)

Location: 333 Johnston Hall, 101 Pleasant Street SE (East Bank)  
Phone: (612) 625-6858

The Graduate School Diversity Office coordinates and leads the University's initiatives in the recruitment, funding, retention and graduation of a diverse graduate and professional student body. The office is situated within The Graduate School and works with other units connected to diversity and multiculturalism.

### **The Gender and Sexuality Center for Queer and Trans Life**

[gsc.umn.edu](https://gsc.umn.edu)

Location: 46 Appleby Hall, 128 Pleasant Street SE (East Bank)  
Phone: (612) 625-0537

The Gender and Sexuality Center for Queer and Trans Life is dedicated to transforming campus climate for University of Minnesota students, staff, faculty, alum and community members by developing and supporting more inclusive understandings of gender and sexuality through education, advocacy, outreach and support.

### **International Student and Scholar Services**

[iss.umn.edu](https://iss.umn.edu)

Location: 109 Hubert H. Humphrey School, 301 19<sup>th</sup> Avenue S (West Bank)  
Phone: (612) 626-7100

International Student and Scholar Services (ISSS) is the office dedicated to serving the University's international community. Its primary mission is to assist international students and scholars in successfully accomplishing the goals that brought them to the University, by using all available resources. Services include:

- Counseling and advising
- Immigration and visa regulation advising
- Newsletters
- Career services
- Academic opportunities for university students
- Tax return information

**Multicultural Center for Academic Excellence**

[mcae.umn.edu](http://mcae.umn.edu)

Location: 140 Appleby Hall, 128 Pleasant Street SE (East Bank)  
Phone: (612) 624-6386

The Multicultural Center for Academic Excellence (MCAE) is a campus-wide resource that promotes an inclusive atmosphere to foster and enrich multicultural understanding among all members of the University community. MCAE's commitment to creating such a climate is driven by a student-first culture in which students are the highest priority.

**Office of Equity and Diversity**

[diversity.umn.edu](http://diversity.umn.edu)

Location: 432 Morrill Hall, 100 Church Street SE (East Bank)  
Phone: (612) 624-0594

The mission of the Office of Equity and Diversity (OED) is to leverage the transformative power of equity and diversity to advance excellence in teaching, research and community engagement at the University of Minnesota. OED envisions a University where equity and diversity are:

1. Integrated into the work and lives of every student, faculty and staff member.
2. Recognized as core institutional values, and will inform thinking, policies and practices throughout the University.
3. Inherently intertwined with academic excellence and the development of leaders for a globally inclusive society.

**Office of Equal Opportunity and Affirmative Action**

[eoaa.umn.edu](http://eoaa.umn.edu)

Location: 274 McNamara Alumni Center, 200 Oak Street SE (East Bank)  
Phone: (612) 624-9547

The Office of Equal Opportunity and Affirmative Action (EOAA) was founded in 1972 to ensure that all University community members uphold federal and state civil rights laws and regulations, as well as University equal opportunity policies. The EOAA Office envisions a University community that is equitable, one that values the diversity of its workforce and student body and is free from discrimination and harassment.

**Student Conflict Resolution Center**

[sos.umn.edu](http://sos.umn.edu)

Location: 254 Appleby Hall, 128 Pleasant St. SE (East Bank)  
Phone: (612) 624-7272

The Student Conflict Resolution Center (SCRC) offers informal and formal conflict resolution services to resolve students' University-based problems and concerns. An ombudsman provides confidential, neutral, and informal options. An advocate is available to assist students in formal grievance or disciplinary proceedings.

**Women's Center**

[womenscenter.umn.edu](http://womenscenter.umn.edu)

Location: 64 Appleby Hall, 128 Pleasant Street SE (East Bank)  
Phone: (612) 625-9837

The Women's Center advances equity for women students, staff, faculty, and alumni across identities. The Women's Center increases connections for women's success, cultivates socially responsible leaders, and advocates for organizational culture change toward excellence for all.

### **Bias Response & Referral Network**

[bias-response.umn.edu](https://bias-response.umn.edu)

The Bias Response and Referral Network (BRRN) responds to reports of bias incidents on the Twin Cities campus. The BRRN's goal is to contribute to a campus climate that is welcoming, inclusive, and respectful for all. The BRRN provides support resources to impacted parties, promotes education and dialogue, and affirms the University's commitment to equity and diversity, free speech, and academic freedom.

## **2.6 ACADEMIC RESOURCES**

### **University Libraries**

[hsl.lib.umn.edu/biomed](https://hsl.lib.umn.edu/biomed)

The Bio-Medical Library is located in Diehl Hall and contains materials in the areas of allied health, medicine, mortuary science, nursing, pharmacy, public health, and the basic life sciences. In addition, the library provides numerous resources and services such as library instructional classes, research workshops, reference consultations, library mediated searches, and citation clarification. The Mathematics library (<https://www.lib.umn.edu/math>), located in Vincent Hall, contains materials in the area of mathematics and statistics.

Information on other University libraries and collections can be found at [www.lib.umn.edu](https://www.lib.umn.edu).

The Subject Librarian for the School of Public Health is Shanda Hunt. Please email [hunt0081@umn.edu](mailto:hunt0081@umn.edu) or call (612) 301-1318 to set up an appointment.

### **Bookstore**

[bookstores.umn.edu](https://bookstores.umn.edu)

The University of Minnesota Bookstores, located in Coffman Union, sells course materials for all Public Health courses. Course materials can also be ordered online.

### **Center for Educational Innovation**

[cei.umn.edu](https://cei.umn.edu)

The Center for Educational Innovation (CEI) was created in 2014 to strengthen instructional and academic technology collaboration and support across the University. By combining the Center for Teaching and Learning and the Office of eLearning, the CEI provides expertise that supports curricular and pedagogical innovation in campus classrooms and in online courses and programs.

### **Center for Writing**

[writing.umn.edu](https://writing.umn.edu)

The Center for Writing provides free writing instruction for all University of Minnesota students at all stages of the writing process. In collaborative consultations, they help students develop productive writing habits and revision strategies. Assistance can be found via appointments or online.

The Online Writing Center offers online tutoring to students taking Writing-Intensive courses at the University of Minnesota. Online tutoring is conducted via the Web and consists of comments and feedback offered by experienced writing tutors.

Tutors are trained in fields such as composition, speech communication, scientific and technical communication, and rhetoric, and many of them are instructors at the university. Tutors review the writing you submit by offering comments and suggestions for improvement; however, they will comment mainly on the areas students specify.

### **Information Technology**

[it.umn.edu](https://it.umn.edu)

Technology Help is your first point of contact for hardware, software, and internet support. You can contact Technology Help for assistance even if you are not yet on campus.

[IT@umn.edu](mailto:IT@umn.edu) can help you initiate and manage your student internet account, get connected to Wi-Fi on campus, explore discounted or free devices and software available to students, as well as show you how to keep your computers, mobile devices, and data safe, both at home and at the University.

## 2.7 CAMPUS SAFETY

### U of M Police Department

[publicsafety.umn.edu](http://publicsafety.umn.edu)

The University of Minnesota has a full-service police department; in the event of an emergency dial 9-1-1.

### University Security

[publicsafety.umn.edu/home/security](http://publicsafety.umn.edu/home/security)

University Security offers a walking and biking escort service to and from campus locations and nearby adjacent neighborhoods. This service is available at no charge to students, staff, faculty, and visitors to the University of Minnesota – Twin Cities campus. To request an escort by trained security personnel, please call (612) 624-WALK (9255) shortly before the desired departure time and walk safe.

### Safe-U Emergency Notification

[safe-campus.umn.edu](http://safe-campus.umn.edu)

The safety of students, faculty, staff, and visitors is of highest priority at the University of Minnesota. A multi-pronged, collaborative effort is in place to promote on-campus safety, while working with our community partners to ensure proper resources are dedicated to making off-campus neighborhoods safe as well.

[Safe-U text messaging system](#) provides students, faculty, and staff timely emergency notifications so that our community can stay informed about critical campus safety issues.

Safe-U will be used infrequently and specifically for real emergency situations.

### Campus Wide Emergency Alert System

The Campus Wide Emergency Alert System includes 21 outdoor loudspeakers mounted on poles and rooftops on the West Bank and East Bank and in St. Paul. The system will project an alert tone and vocal instructions in the event of a campus emergency.

## 2.8 ADDITIONAL RESOURCES

### Post Office

[sua.umn.edu](http://sua.umn.edu)

A full-service U.S. Post Office is located on the ground floor of Coffman Union.

### Copies/Fax Machines

[printing.umn.edu](http://printing.umn.edu)

A University Copy Center is located in Mayo D104 as well as other locations throughout the University.

### Student Legal Service

[sls.umn.edu](http://sls.umn.edu)

University Student Legal Service (USLS) provides legal representation and legal advice to eligible students on the Twin Cities campus.

## 3. REGISTRATION

### 3.1 FULL-TIME STATUS

All SPH students need to register for at least six credits in fall and spring semester to be considered full-time. In the summer, MHA and MPH students must be registered for six credits to be considered full-time and three credits to be considered half-time.

Note: The Office of Financial Aid or external agencies may require students to be registered for more than three or six credits to be considered full-time; check with these agencies to verify their requirements.

## 3.2 REGISTRATION PROCESS

### How-To Guides

The University of Minnesota provides how-to guides for many common procedures on the [One Stop website](#), including registering and enrolling for classes. These guides provide visuals as well as text.

#### Step One

Select courses for the term with your advisor before registering. Please make an appointment at the earliest convenient time. To view available courses:

1. Log into [MyU](#).
2. Select the **My Academics** tab, then the **My Classes** sub-tab.
3. Click on **Class Search** (in the Enrollment Tools section).
4. Determine search criteria; you must select your campus (Institution), term, and at least two additional criteria. Students in the School of Public Health will find the majority of their courses listed under the subject "PUBH".

Note: 5000- through 8000-level courses are considered graduate-level. 1000- and 3000-level courses are for undergraduates and will not receive approval for graduate credit. Under some circumstances, with approval of the student's academic advisor, 4000-level courses may also be applied toward a degree as long as they are taught by a member of the graduate faculty.

5. View your search results. To see only classes that are open, select Show Open Classes Only.
6. To continue searching, click **New Search** or **Modify Search**. If you hit the back button, you will lose your search results. Click the class number to see more details. You can search for a subject by entering subject code or clicking **Select Subject**. For more search options, expand **Additional Search Criteria**. When you are satisfied with your criteria, click **Search**.

#### Step Two

After selecting your courses, run through the checklist below before registering. Frustrating delays can be avoided by following these hints:

- If instructor consent is necessary for any of your selected course(s), get a permission number from the course instructor or his/her designee before registering. This number permits registration for the course through the second week of the semester; after the second week, it expires. Note that the number is specific to the student it is given to and the course requiring instructor consent. Once a number is used to register, it becomes invalid and cannot be used for another course or by another student.
- You will not be able to register if you have any holds on your University record. Notice of any hold, including the name of the department or office where it may be cleared, is available at [myu.umn.edu](http://myu.umn.edu).
- You can find your registration queue date and time on the web at [myu.umn.edu](http://myu.umn.edu).
- You will need your Internet ID (x.500) and password to register. If you have forgotten your password, call 612.301.4357 to have your password reset. You can also call this number if you have problems logging in to register.

#### Step Three

Register via the web at [myu.umn.edu](http://myu.umn.edu) or go to One Stop Student Services Center in 333 Robert H. Bruininks Hall on the East Bank Campus to register in person. Students having difficulty with self-registration should contact the registration help-line at (612) 624-1111 (M-F 8:00-4:00) or email [onestop@umn.edu](mailto:onestop@umn.edu). You may also contact your Program Coordinator or the School of Public Health Student Services Center at (612) 626-3500. Please note the following when registering:

- Most courses give the option of either an A/F or S/N (pass/fail) grading option. Be sure to select the grade option desired for the course. Note that there may be a limit to the number of credits a student can take S/N (pass/fail); see the program guidebook for more information. Stricter policies may be enforced by individual programs. There is a strict and early deadline for when grading options can be changed.
- Some courses have variable credits. Before selecting the number of credits, students should make sure they agree with the instructor as to the number of credits appropriate for the work proposed.

### 3.3 GRADES, COURSE ADDITIONS, WITHDRAWAL AND EVALUATIONS

#### Change of Grade Option

For full-semester courses, students may change their grade option, if applicable, through the second week of the semester. After that, grading options cannot be changed. Grade option change deadlines for other terms (i.e. summer and half-semester) can be found at [onestop.umn.edu](http://onestop.umn.edu). For more information about grading policies, see the University Senate [Grading and Transcripts: Twin Cities, Crookston, Morris, and Rochester Policy](#).

#### Grading Scale

The University uses plus and minus grading on a 4.000 cumulative grade point scale in accordance with the following, and you can expect the grade lines to be drawn as follows:

Grade	GPA	
A	4.000	A = achievement that is outstanding relative to the level necessary to meet course requirements.
A-	3.667	
B+	3.333	B = achievement that is significantly above the level necessary to meet course requirements.
B	3.000	
B-	2.667	
C+	2.333	C = achievement that meets the course requirements in every respect.
C	2.000	
C-	1.667	
D+	1.333	D = achievement that is worthy of credit even though it fails to meet fully the course requirements.
D	1.000	
F	0	F = failure because work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I (Incomplete).

- S = achievement that is satisfactory, which is equivalent to a C- or better
- N = achievement that is not satisfactory and signifies that the work was either 1) completed but at a level that is not worthy of credit, or 2) not completed and there was no agreement between the instructor and student that the student would receive an I (Incomplete).

#### Other Transcript Symbols

- **Incomplete [I]**
  - There shall be a temporary symbol "I", **incomplete**, awarded to indicate that the work of the course has not been completed. The "I" shall be assigned at the discretion of the instructor when, due to extraordinary circumstances, the student was prevented from completing the work of the course on time. The assignment of an "I" requires a written contract between the instructor and student specifying the time and manner in which the student will complete the course requirements. In no event may any such written agreement allow a period of longer than one year to complete the course requirements. The Incomplete contract can be found at <http://secure.ahc.umn.edu/publichealth/sphgrades/>.
  - For graduate/professional students, an "I" is to remain on the transcript until changed by the instructor or department.
  - When an "I" is changed to another symbol, the "I" is removed from the record.

- A student does not need to be registered at the University in order to complete the work necessary to convert an "I" to a grade with credit in the time and manner previously agreed upon between the student and the instructor. The instructor is expected to turn in the new grade within four weeks of the date the work was submitted by the student.
- **Interpretation of Policy on Incompletes for Students Called to Active Military Duty**
  - When appropriate, instructors may prefer to arrange for the student to take an incomplete. Senate policy requires that an incomplete be made up within one calendar year of the end of the term in which the incomplete is given. When students are called to active military duty and reach agreement with their instructor(s) to take an incomplete, they will have up to one calendar year following their discharge from active duty to complete their incomplete(s). Complete policies and procedures are available in the SPH Student Services Center.
- **Transfer [T]**
  - There shall be a symbol "T", **transfer**, posted as a prefix to the original grade, to indicate credits transferred from another institution or from one college or campus to another within the University when reevaluation is required.
- **Withdrawal [W]**
  - If a student officially withdraws from a course during the first two weeks of classes, there shall be no record of that course registration entered on the student's transcript. There shall be a symbol "W", **withdrawal**, entered upon a student's record when the student officially withdraws from a course in accordance with procedures established by the student's college or campus\*. The "W" will be entered on the transcript irrespective of the student's academic standing in that course if the student withdraws from the course during the third through eighth week of class (second or third weeks of summer sessions). Withdrawal in the ninth or later week of classes (fourth or later in summer sessions) shall require approval of the college and may not be granted solely because a student is failing the course; there must be extenuating non-academic circumstances justifying late withdrawal.
- **Continuation [X]**
  - There shall be a symbol "X", indicating a student may continue in a continuation course in which a grade cannot be determined until the full sequence of courses is completed. The instructor shall submit a grade for each "X" when the student has completed the sequence.
- **In Progress [K]**
  - There shall be a symbol "K", assigned by an instructor to indicate the course is still in progress and that a grade cannot be assigned at the present time.

### Grade Submission

All grades for all courses each term shall be submitted to the Office of the Registrar no later than 72 hours after the last final examination for that term. Students can view their grades online at [myu.umn.edu](http://myu.umn.edu) 24 hours after they are posted by the course instructor.

### Grade Point Average

Students must achieve a grade point average of no less than 3.0 (B) across their entire program to receive the graduate or professional degree.

### SPH Incomplete Policy

The maximum time allowed for a student to fulfill incomplete course requirements is one year or as specified on the incomplete contract, agreed upon by the instructor and student. Students who fail to meet incomplete contract deadlines as determined by instructor and student will receive a grade of F or N (depending on grade option) to be entered by the SPH Student Services Center. Instructors are notified via email that an F or N was submitted due to failure in meeting the incomplete contract deadline.

Students can initiate an electronic Incomplete Contract form using the SPH Grades portal found here:

<https://publichealth.ahc.umn.edu/sphgrades/>.

The information needed for each contract is:

- Student ID
- Course number
- Course section
- Instructor name
- Reason for the Incomplete Contract

- Outstanding Assignments
- Deadline

Graduating students who, in consultation with their academic advisor and course instructor, determine not to finish course requirements may request that the incomplete permanently remain on their official transcript (if the course is not required for graduation).

### **Graduate Planning and Audit System (GPAS)**

The Graduate Planning & Audit System (GPAS) allows graduate and professional students to plan future coursework and view student degree progress. You only need to add coursework that you plan on taking because the audit (advisement report) will already track completed coursework and requirements. If you want to add or remove a graduate minor, you will need to submit a separate form.

GPAS allows Program Coordinators, Program Directors, and Director of Graduate Studies to approve students' coursework plans electronically.

Students will work closely with their academic programs to complete and submit GPAS for review and approval. [onestop.umn.edu/academics/gpas](http://onestop.umn.edu/academics/gpas).

### **Probation**

At the end of the semester, the Director of Academic and Student Affairs identifies all SPH students with a cumulative GPA of less than 3.0 enrolled in an SPH program. Students will receive a letter of scholastic probation prepared by the Director of Academic and Student Affairs, to be approved and signed by the Associate Dean of Education & Student Engagement. The terms of this letter are the following: students will be placed on probation and informed that they must maintain a term GPA of 3.0 for each subsequent term. Students must achieve letter grades for all courses (incompletes are unacceptable while on probationary status) they are enrolled in during that semester. This written notice will inform the student that the GPA must be raised to a minimum of 3.0 to be removed from probationary status and to be awarded a degree. Students on probationary status who do not receive at least a 3.0 GPA for each subsequent term will be dismissed from the program by the Associate Dean.

Students who have been dismissed from the SPH and are interested in reapplication to the School are allowed to do so 12 months after the date of dismissal. The dismissal becomes part of the reapplication and is considered in any admission decision.

### **S/N Grade Option**

Students may take no more than 20% of their coursework on an S/N grading basis, exclusive of those topics, seminars, and experience courses offered only on an S/N basis.

### **Adding a Course after It Starts**

No approval is required to add a course during the first week of classes. Instructor approval is required during week two. After the second week of classes, instructor and college scholastic committee approval is required. Deadlines for adding a course for other terms (i.e. summer and half-semester) can be found at [onestop.umn.edu](http://onestop.umn.edu).

### **Registration Requirement and Exceptions**

Students are required to register for at least two semesters and 20 credits in the School of Public Health.

Students must complete a formal request to change their registration (e.g., add, drop, change your grade basis) after a deadline or to register for more than 18 credits. Students must consult with their program coordinator prior to submitting any forms. Approval is not automatic.

### **Course Cancellation and Withdrawal**

Students should refer to the Refund and Drop/Add Deadlines for the particular term at [onestop.umn.edu](http://onestop.umn.edu) for information and deadlines for withdrawing from a course. As a courtesy, students should notify their instructor and, if applicable, advisor of their intent to withdraw.

Students wishing to withdraw from a course after the noted final deadline for a particular term must contact the School of Public Health Student Services Center at [sph-ask@umn.edu](mailto:sph-ask@umn.edu) for further information.

## Course Prerequisites

Any college or campus may set special scholastic or other standards for registration in a particular course, for scholastic probation, admission, honors, continued residence, degrees, and other purposes they deem appropriate.

## Time Frame for Degree

The maximum time allowed by the School of Public Health completion for a *master's degree is eight years*. The eight-year period begins with the first term of enrollment after admission to a degree program within the School of Public Health. If you have the flexibility to take a full-time course load, it is possible to complete the curriculum in a shorter amount of time depending upon the program requirements.

The maximum time allowed by the School of Public Health and the Graduate School for a *doctoral degree is eight years*. The eight-year period begins with the first term of enrollment after admission to a degree program within the School of Public Health.

## Course Evaluations

Student feedback on course content and faculty teaching skills are an important means for improving our work. Please take the time to complete a course evaluation for each of the courses for which you are registered. The SPH collects student course evaluations electronically through the U of M Office of Measurement Services called Explorance Blue <http://srt.umn.edu/blue>. The system will send email notifications to students when they can access and complete their course evaluations. All students will have access to their final grades through OneStop two weeks after the last day of the semester.

Note: Responses will remain anonymous and will not be released to the course instructor until after final grades have been submitted. This is a School of Public Health procedure, not a University-wide policy, and therefore applies to Public Health courses only.

## 3.4 TRANSFER CREDIT

### Course Credit Transfer Policy

Course credits may be used to satisfy public health core or other program requirements as jointly approved by the Program Director and the Associate Dean of Education. No course credits older than 5 years from the date of the student's matriculation will be accepted for transfer. A grade of "B-" or better is required for each course requested for transfer credit.

SPH students who have completed graduate-level coursework at the University of Minnesota or another college or university may petition to transfer those courses toward their SPH degree. To be considered for transfer, graduate level coursework must have been taken at an accredited graduate institution.

Higher standards of achievement and stricter policies may be enforced by individual programs.

MPH and MHA students must:

1. Meet with their academic advisor to discuss the petitioning process. If the petition is acceptable to the advisor, the student will complete and sign the Academic Policy Petition form and attach an official transcript on which the final grade has been posted.
2. Submit the Academic Policy Petition form to the Program Coordinator for processing. The Academic Policy Petition form can be found at [www.sph.umn.edu/current/resources/](http://www.sph.umn.edu/current/resources/).
3. The Program Coordinator will forward the petition to the Program Director for approval and signature and then to the Student Services Center for the Associate Dean of Education for final evaluation and/or approval.

The Academic Policy Petition forms may be used for other academic reasons. Students are encouraged to discuss petition issues with their academic advisor or Program Coordinator to determine the appropriate process and procedure.

MS and PhD students must contact their program coordinator for detailed information on transferring coursework.

## 3.5 EQUIVALENCY EXAM AND INFORMATION

### Equivalency Exams

MPH students must satisfy competency requirements in the seven core areas of public health: administration, behavioral science, biostatistics, environmental health, epidemiology, ethics, and foundations. Courses designated as part of the public health core can only be taken for a letter grade (A-F). Students are required to achieve no less than

a B- grade in each course taken on an A-F basis. Students may retake public health core courses with the exact same numbered course only once.

Students have the option of taking the equivalency exams in any of the following core areas; however, students can only take the exam one time in each core area. Students who pass the exam(s) are waived from taking the required course and must make up the credits per their area of study and degree requirements. Students who do not pass the exam(s) are required to take the appropriate core course area to satisfy the competency requirements.

### **Administration**

PubH 6751 Principles of Management in Health Services Organizations (2 cr)

### **Behavioral Science**

PubH 6020 Fundamentals of Social and Behavioral Science (2 cr)

PubH 6050 Community Health Theory and Practice I [CHE students only] (3 cr)

PubH 6914 Community Nutrition Intervention [PubH Nutr students only] (3 cr)

### **Biostatistics**

PubH 6414 Biostatistical Literacy (**3 cr**) [Fall 2018 and beyond] **AND** a programming class from the following list [students must check with their program advisor or coordinator to ensure they are taking the correct required programming course]

PubH 6107 Excel and Access in Public Health Settings (1 cr)

PubH 6123 Violence Prevention and Control: Theory, Research and Application (2 cr)

PubH 6325 Data Processing with PC-SAS (1 cr)

PubH 6420 Introduction to SAS Programming (1 cr)

PubH 6470 SAS Procedures and Data Analysis (3 cr)

PubH 6755 Planning and Budgeting for Public Health (2 cr)

PubH 6813 Managing Electronic Health Information (2 cr)

PubH 6845 Using Demographic Data for Policy Analysis (3 cr)

PubH 7200 Fundamentals Exploring and Visualizing Data in R (1 cr)

PubH 7461 Exploring and Visualizing Data in R (2 cr)

### **OR**

PubH 6450 Biostatistics I (4 cr)

### **Environmental Health**

PubH 6102 Issues in Environmental and Occupational Health (2 cr)

### **Epidemiology**

PubH 6320 Fundamentals of Epidemiology (3 cr)

### **OR**

PubH 6341 Epidemiologic Methods I (3 cr)

### **Ethics**

PubH 6741 Ethics in Public Health: Professional Practice and Policy (1 cr)

### **Foundations**

PubH 6250 Foundations of Public Health (2 cr) – equivalency exam not available

Equivalency examinations are given at least twice each year (January and August). Equivalency exams satisfy competency requirements for the following core courses only:

### **PubH 6020 Fundamentals of Social and Behavioral Science**

Contact: Toben Nelson at [tfnelson@umn.edu](mailto:tfnelson@umn.edu)

Number of questions on exam	4
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Type of questions	Essay
Open or closed book	Open

### **PubH 6751 Principles of Management in Health Services Organizations**

Contact: Jim Begun at [begin001@umn.edu](mailto:begin001@umn.edu)

Number of questions on exam	32
Type of questions	25 multiple choice, 3 essay, 1 case analysis with 4 questions
Open or closed book	Closed

### **PubH 6102 Issues in Environmental and Occupational Health**

Contact: Matt Simcik at [msimcik@umn.edu](mailto:msimcik@umn.edu)

Number of questions on exam	1
Type of questions	Systems Map
Open or closed book	Open

### **PubH 6320 Fundamentals of Epidemiology**

Contact: Rachel Widome at [widom001@umn.edu](mailto:widom001@umn.edu)

Number of questions on exam	31
Type of questions	Multiple choice, show-your-work problems
Open or closed book	Open

### **PubH 6450 Biostatistics I**

Contact: Sally Olander at [brown198@umn.edu](mailto:brown198@umn.edu)

Number of questions on exam	60-75
Type of questions	Multiple choice, short answer, and show-your-work problems
Open or closed book	Open

### **PubH 6741 Ethics in Public Health: Professional Practice and Policy**

Contact: Sarah Gollust at [sgollust@umn.edu](mailto:sgollust@umn.edu)

Number of questions on exam	10
Type of questions	Short answer
Open or closed book	Open (no internet access)

## 4. TUITION, FEES, BILLING, AND FINANCES

### 4.1 MY FINANCES TAB ON MY U

The My Finances tab in MyU.umn.edu is where you'll find information about billing, payment, and financial aid.

The My Finances tab allows you to view account charges and billing statements. It is also where you can submit an online payment using the preferred and free e-check method. Don't forget to sign up for Direct Deposit. For residents of Wisconsin, North Dakota, South Dakota, and Manitoba, remember to apply for reciprocity through your home state or province so your bill will have the correct amounts.

OneStop hosts "how-to guides" for common transactions. You can find financial how-to guides here: [onestop.umn.edu/how-guides#accord-3](https://onestop.umn.edu/how-guides#accord-3).

### 4.2 TUITION AND FEES

Please go to [onestop.umn.edu/](https://onestop.umn.edu/) for complete tuition and fee information.

### 4.3 BILLING

Your billing statement details your amount due (tuition, fees, housing, books, and other campus charges) and your payment due date. You will receive a notice in your University email account when it is ready to view. If you have account charges on more than one campus, you will receive separate billing notices for each campus.

You may opt into a payment plan when your first bill is available, which will divide your payments over three billing periods throughout the semester. Make sure you always pay your bills on time to avoid late fees or cancellation of future class registration.

Your billing statement is a snapshot of the charges and credits applied to your account as of the date the statement was created. For the most up-to-date account activity information, you can check your student account on the My Finances tab in MyU.

#### Third Party Billing

[onestop.umn.edu/finances/third-party-billing](https://onestop.umn.edu/finances/third-party-billing)

When an organization, not owned by you or a family member, makes a commitment to pay your educational expenses, they are considered a third-party sponsor by the University of Minnesota. When payment is due on your student account, the sponsor is billed by the University. This payment process is termed "third party billing."

Sponsor's payments are subject to the same federal reporting requirements as other financial aid. Some sponsorships don't require a billing invoice and are administered by the University through One Stop Student Services.

Whether you are a student or a sponsor, you will find answers in the frequently asked questions about how the third-party billing processes these payments at the links on the left. In addition, you can view current tuition and fee information.

If you have more questions or need further information, please contact the third-party billing office at [tpbill@umn.edu](mailto:tpbill@umn.edu) or (612) 625- 8559.

### 4.4 FINANCIAL AID AND SCHOLARSHIPS

A variety of resources to assist students in financing their education can be found at [www.sph.umn.edu/prospective/tuition-finances/paying-for-your-education/](https://www.sph.umn.edu/prospective/tuition-finances/paying-for-your-education/). Scholarships specific to SPH Divisions and/or Programs can be found in the Division and/or program guidebook.

Information on financial aid can be found at [onestop.umn.edu](https://onestop.umn.edu) (Finances tab) or by emailing [onestop@umn.edu](mailto:onestop@umn.edu).

Students having questions about the status of their financial aid should refer to the appropriate contact below:

AID TYPE	CONTACT	EMAIL ADDRESS
Division/Program Specific Awards and Traineeships, Division-related donor scholarships, Dean's Scholarship	Your Program Coordinator	
Medical Scholarships, MN Tuition Scholarship, General donor funded scholarships.	SPH Student Services	<a href="mailto:sph-ask@umn.edu">sph-ask@umn.edu</a>
Federal Loans, Financial Aid Package	Liz Holm - Office of Student Finance	<a href="mailto:holmx029@umn.edu">holmx029@umn.edu</a>

### Loan Deferment

A temporary postponement of loan payments is available only under certain conditions. Students requesting a loan deferment can get their form signed by One Stop Student Services [onestop.umn.edu](http://onestop.umn.edu).

### Financial Aid Exit Counseling

Exit counseling sessions are required of all borrowers of federal and University-administered student loan programs. Exit counseling provides you information regarding the rights and responsibilities of a borrower and a lender/servicer. You learn about repayment, deferment, and cancellation of your loan. These sessions prepare you to be responsible and effective in repayment of your educational loans.

**You are required to complete exit counseling when you:**

- Are about to graduate
- Leave the University (even if it is just temporary)
- Drop your registration below half-time enrollment
- Transfer to another school
- Leave for a National Student Exchange (NSE) experience

Once you have been selected for the exit process, you will receive an email with instructions to complete your exit counseling online. Make sure you respond by completing your exit counseling in a timely manner! A hold will remain on your student record until your exit counseling is complete, delaying your diploma, preventing registration, and preventing access to your transcripts.

For more information about student loan exit counseling, contact Student Account Assistance at [onestop.umn.edu](http://onestop.umn.edu).

## 4.5 GRADUATE ASSISTANTSHIPS

Many SPH students use graduate assistantships to help finance their education. These are campus working/learning positions that take the form of research, teaching, or administrative appointments. Degree-seeking students in the SPH registered for six or more credits, including international students, are eligible to apply for an assistantship on campus. Because many assistantships are funded by grants, the research activity of SPH faculty may result in numerous opportunities across the school; you are encouraged to check with your faculty to see if, or when, they may be posting new grant-related assistant positions.

Graduate assistantships include an hourly wage, tuition benefits, subsidized insurance coverage, and may include resident tuition rates for students and dependents.

For graduate assistant policies and benefits, go to [www1.umn.edu/ohr/gae](http://www1.umn.edu/ohr/gae).

The tuition benefits are particularly attractive to students. Graduate assistants who work at least 25% time from the beginning to the end of the official semester appointment dates are eligible to receive tuition benefits (tuition remission and resident rates) during that semester.

## 5. GUIDELINES, POLICIES, AND COMPLIANCE

### 5.1 STUDENT RESPONSIBILITY AND CONDUCT

Students are ultimately responsible for the level of success that they achieve in their program of study and for the time it takes to complete that program. Students should:

- Attend SPH orientation and understand the information distributed.
- Understand and follow University, School of Public Health, Division, and Program rules and procedures for completion of degree requirements.
- Read email messages frequently for announcements from the Program Coordinators, Program Directors and Director of Graduate Studies, Student Services Center, and Career Center. These announcements may involve changes in the University, School or Division rules, and procedures for completion of degree requirements; students are responsible for reading and understanding these announcements.
- Contact a Program Coordinator, Program Director, or Director of Graduate Studies if they are not getting reasonable assistance from their academic and/or master's project/thesis advisor.
- Initiate and maintain contact each semester with their academic advisor to review progress toward the completion of their degree.
- Complete the degree in a timely fashion.

The School of Public Health emphasizes three principles of student conduct in all of its degree programs:

1. **Respect Others:** Students are expected to behave in a respectful and professional manner with other students, faculty, and staff in the classroom and on campus.
2. **Honor Privacy:** Every student's course grades are private and are not to be shown to anyone else. This also applies to the grades of students in courses for which you are a Teaching Assistant.
3. **Present Your Work Honestly:** Plagiarism is defined as the presentation of another's writing or ideas as your own. For a helpful discussion of preventing plagiarism, please consult University policies and procedures regarding academic integrity: <http://writing.umn.edu/tww/sources/definitions.html>. Students should be careful to properly attribute and cite others' work in their writing. For guidelines for correctly citing sources, go to <https://www.lib.umn.edu/howto/citationguides>.

The Associate Dean of Education & Student Engagement is responsible for managing all School of Public Health issues and investigations of academic misconduct.

## 5.2 UNIVERSITY OF MINNESOTA POLICIES

As part of the larger University of Minnesota community, students in the School of Public Health are responsible for abiding by the Board of Regents policies and other University-wide administrative policies. These policies can be found in full at [policy.umn.edu](http://policy.umn.edu).

This policy library holds policies that apply to the entire University system (all five campuses), as well as policies that apply to the Twin Cities campus. The site also displays Board of Regents policies, which are managed through the Board office.

In an effort to avoid potential duplication, omission, or transcription errors, we direct SPH students to read the policies at the original source. We encourage you to particularly become aware of the following:

### Student Conduct Code

This policy governs the expected standards of behavior for students and applies to all students and student organizations at the University of Minnesota, whether or not the University is in session.

The Office for Community Standards is the unit of the university that works to educate the community about the policies governing student behavior and resolve reported violations of the Student Conduct Code. The process they follow is designed to resolve issues in a way that is fair to all community members.

<https://communitystandards.umn.edu/>

Below are the Student Conduct Code's guiding principles:

1. The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University.
2. The University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.
3. The University is dedicated to responsible stewardship of its resources and to protecting its property and resources from theft, damage, destruction, or misuse.

4. The University supports and is guided by state and federal law while also setting its own standards of conduct for its academic community.
5. The University is dedicated to the rational and orderly resolution of conflict.
6. Students are entitled to the rights and responsibilities of other citizens with regard to freedom of speech, peaceable assembly, and right to petition. Students are entitled to exercise their rights to inquire and dissent, speak freely, and peaceably assemble and protest to the extent permissible under both the First Amendment and the Student Conduct Code.
7. Students are entitled to due process and procedural fairness protections, including the prompt notification of charges, the opportunity to respond, the right to an advocate of choice, and the right to the resolution of a case within a reasonable period of time.

Any student or student group found to have committed, attempted to commit, or assisted or abetted another person or group to commit the following misconduct is subject to appropriate disciplinary action under this policy:

- Scholastic Dishonesty
- Disruption of the Academic Environment
- Falsification
- Refusal to Identify and Comply
- Attempt to Injure or Defraud
- Harm to Person
- Bullying
- Sexual Misconduct
- Disorderly Conduct
- Illegal or Unauthorized Possession or Use of Weapons
- Illegal or Unauthorized Possession or Use of Drugs or Alcohol
- Providing Alcohol to Minors
- Unauthorized Use of University Facilities or Services
- Theft, Property Damage, or Vandalism
- Unauthorized Access
- Disruptive Behavior
- Hazing
- Rioting
- Violation of University Rules
- Violation of Local, State, or Federal Laws or Ordinances
- Persistent Violations

### **Scholastic Dishonesty and Plagiarism**

Students are responsible for maintaining scholastic honesty in their work at all times. Students engaged in scholastic dishonesty will be penalized, and offenses will be reported to the Office for Community Standards.

The University's Student Conduct Code defines scholastic dishonesty as "plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using course materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, misrepresenting, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis."

- Copying information word for word from a source without using quotation marks and giving proper acknowledgement by way of footnote, endnote, or in-text citation;
- Representing the words, ideas, or data of another person as one's own without providing proper attribution to the author through quotation, reference, in-text citation, or footnote;
- Producing, without proper attribution, any form of work originated by another person such as a musical phrase, a proof, a speech, an image, experimental data, laboratory report, graphic design, or computer code;
- Paraphrasing, without sufficient acknowledgment, ideas taken from another person that the reader might reasonably mistake as the author's; and
- Borrowing various words, ideas, phrases, or data from original sources and blending them with one's own without acknowledging the sources.

It is the responsibility of all students to understand the standards and methods of proper attribution and to clarify with each instructor the standards, expectations, and reference techniques appropriate to the subject area and class requirements, including group work and internet use. Students are encouraged to seek out information about these methods from instructors and other resources and to apply this information in all submissions of academic work."

Serious, intentional plagiarism will result in a grade of "F" or "N" for the entire course. For more information on this policy and for a helpful discussion of preventing plagiarism, please consult University policies and procedures regarding academic integrity: <https://communitystandards.umn.edu/>

Students are urged to be careful that they properly attribute and cite others' work in their own writing. For guidelines for correctly citing sources, go to [www.lib.umn.edu/instruction/tutorials](http://www.lib.umn.edu/instruction/tutorials) and click on "Organizing and Citing Research."

In addition, original work is expected in all coursework. It is unacceptable for students to hand in assignments for any course for which they received credit in another course unless by prior agreement with the instructor. Building on a line of work begun in another course or leading to a thesis, dissertation, or final project is acceptable.

All issues relating to academic misconduct in the School of Public Health are referred to the Associate Dean of Education.

### **Sexual Harassment, Sexual Assault, Stalking and Relationship Violence**

This policy governs the commitment to the prevention and awareness of and response to sexual harassment at the University of Minnesota.

The University of Minnesota and the School of Public Health are committed to creating a respectful community that is free of harassment. If you see or experience sexual misconduct during a divisional, school, or university related event, or at a professional event (such as at a conference), please consult with a University employee with whom you feel comfortable, or directly report to the Office of Equal Opportunity and Affirmative Action (EOAA) so that they can review the situation. The EOAA will work with you to determine the best course of action to prevent any further misconduct or retaliation.

If you would like more information about sexual misconduct or would like to talk through an experience, The Aurora Center, Student Counseling Services, and Boynton Health provide confidential services and resources to help you better understand your rights and the resources available on campus.

### **Research Involving Human Subjects**

This policy governs all research involving human subjects conducted at the University of Minnesota or by University faculty, staff, or student researchers.

Any research you conduct while a student at the University of Minnesota may be subject to review and approval by the University's Institutional Review Board (IRB) for the protection of human research subjects. This applies to projects conducted inside or outside the University. For research conducted outside of the University, students may still need IRB approval from the University even if approval has been obtained from an external agency. Any research involving human subjects must be reviewed by the IRB.

The IRB is a committee of faculty, students, and community members that follows federal regulations and ethical principles in order to protect human research subjects.

If your proposed research project is subject to IRB review, you must submit an application to the IRB before you begin. **You cannot begin any regulated research until you have IRB approval.** This includes sending out recruitment flyers or emails, accessing private data, or doing any aspect of your research. You may not be permitted to use any data that was collected without prior IRB approval. The IRB does not have the authority to approve a study *after* it has begun.

The IRB approval process may take as little as one week, but **can take up to 2 months or longer.** "Last minute" approvals are not possible, so it is important to plan ahead. Applications for international research, research with children, research about illegal or stigmatizing behavior, research with vulnerable populations, or research that incorporates deception often require more review time.

#### **IRB Contact Information**

(612) 626-5654

[irb@umn.edu](mailto:irb@umn.edu)

[research.umn.edu/units/irb](http://research.umn.edu/units/irb)

Projects that are not subject to IRB review include studies that rely on existing publicly available data, such as US Census data. If you are only doing an analysis of publicly available data (i.e., data you can download from a public website) you do not need IRB approval to use it. Technically, such work is research but does not involve living individuals from whom you collect information. On the other hand, an oral history study may not require IRB because it is not a systematic investigation designed to contribute to generalizable knowledge. However, there are many grey areas, so students proposing such work are strongly encouraged to contact the IRB to determine whether their project requires approval.

Additional guidelines for students involved in international fieldwork

If you plan to use data collected as part of your international field experience for your culminating experience project, you are strongly encouraged to contact the IRB before your field experience begins to ensure that your project is approved in a timely manner. You will not be allowed to take data out of the host country without IRB approval.

### **Grading & Transcript Policy**

This policy covers University-wide grading standards and the meaning of transcript symbols. A standard grading system establishes a common understanding of the meaning of grades and promotes uniformity in assigning them. Defining grades and

their associated meaning (grade points and assessment of achievement) allows for comparison and for computation of the term and cumulative grade point average.

### Leave of Absence

Graduate students who experience circumstances that prevent them from maintaining active status through continuous registration (excluding summer term), and who, through consultation with their Director of Graduate Studies (DGS), Program Director, advisor(s), and relevant offices determine that a leave of absence (LOA) is appropriate, must request a LOA from their college office using this form. Graduate students must receive approval for an official Leave of Absence.

Forms must be submitted to the School of Public Health Student Services Center, A395 Mayo Memorial Building, MMC 819, 420 Delaware Street SE, Minneapolis, MN 55455.

## 5.3 COMPLAINTS AND GRIEVANCES

The SPH seeks to be aware of and responsive to student issues and complaints. There are numerous ways for you to channel your academic and student life concerns:

- Provide comments on the yearly student survey released every March.
- Meet with your advisor and/or program coordinator.
- Raise the issue with your program director or director of graduate studies, either individually or in a meeting set up for this kind of feedback.

The SPH takes all student concerns seriously and we welcome your input in any of these ways. If the matter is not handled satisfactorily by any of these methods, or if the issue is particularly widespread or serious, please make an appointment with Dr. Elizabeth Wattenberg, Associate Dean of Education at [watte004@umn.edu](mailto:watte004@umn.edu).

The School of Public Health is committed to ensuring that all of our students experience high-quality instruction, and a positive and supportive environment in which to work and learn.

If you have a concern about your academic experience (e.g., grading, advising, instructional) and/or you believe a member of the University community has violated an official University rule, policy and/or established practice, please refer to the University's Board of Regents policy and related informal and formal resolution processes.

The University's process encourages efforts to address concerns at the local level whenever possible. For assistance, students may contact the SPH Student Services staff or the SPH associate dean for education; for a confidential consultation, students may contact the Student Conflict Resolution Center (SCRC).

For discrimination, harassment, or sexual violence complaints the appropriate unit to contact is the Equal Opportunity and Affirmative Action Office.

The University provides resources as well. Report incidents of bias, discrimination, or harassment to the University Office of Equal Opportunity and Affirmative Action at [eoaa.umn.edu](http://eoaa.umn.edu). For student issues that are not resolved through SPH channels or for which you seek external support, the Student Conflict Resolution Center will assist in resolving campus-based problems or concerns [sos.umn.edu](http://sos.umn.edu).

### Bias Grievance Process

**Purpose:** The School of Public Health strives to value and respect all that our students bring to the SPH community. However, events or conflicts may occur both in and out of the classroom that are deemed inappropriate and inconsistent with this value. Students have a right to report these concerns or incidents of bias. In order to address student reports in a confidential and supportive manner, the SPH developed a basic process that is outlined below. Specifically, if you are a student within the SPH, and feel you have been a victim of discrimination or bias based on your identity or beliefs; please reach out to the Associate Director of Diversity, Equity, and Inclusion.

**Intent:** Students may not know all the resources available on campus to address bias-related issues, or they may not feel comfortable reporting these issues or concerns to university offices. Moreover, students may simply wish to talk through an experience before making any other decision. The Associate Director of Diversity, Equity and Inclusion (DEI) can serve as this point of discussion and referral.

**Process:** Below is a set of process points related to addressing grievances. This is not an exhaustive list of steps, but an outline of critical pieces, meant to give both students and administrators an understanding of what may happen.

1. The Associate Director of DEI, or another SPH administrator, will meet with the aggrieved student to collect information regarding an incident or issue.
2. The Associate Director or other SPH administrator, may then talk with faculty, staff, or other students to ascertain the context of the incident, as well as the intent and impact of the situation as a whole. It is our intent to move expeditiously, but this process may take several days depending on the schedules of the involved parties.

3. Consult with related office(s). The Associate Director of DEI will use all of the available information to help determine whether the situation should be handled by another office or individual (ex: Equal Opportunity and Affirmative Action).
4. Where applicable, the Coordinator will identify and recommend options for resolution.
5. The Associate Director will consult back with students and communicate next steps. These may include (but are not limited to) referral to another campus office or administrator, offer for facilitation or mediation, or a class change.

Our hope is to find reasonable resolutions that will make the aggrieved party/parties feel heard, understood, and continuously welcomed in the SPH community. The coordinator can also provide informal support while the student works with another office to find a resolution.

Note regarding retaliation: The University of Minnesota and the School of Public Health prohibit retaliation against anyone who raises concerns about discrimination, harassment, sexual violence, or nepotism; opposes such practices; or participates in an investigation. Retaliation may include intimidation or harassment. If you feel you have been a victim of retaliation in regards to a report please communicate with the Associate Director of DEI or another administrator in the School of Public Health.

## 5.4 PRIVACY

The School of Public Health is committed to protecting the privacy of students, staff, and research participants. Students have privacy rights that assure confidentiality of their student records. In addition, research participants have many rights that guarantee their safety and privacy.

Often School of Public Health students work as Teaching Assistants or Research Assistants; both roles may require access to confidential or private information. Please be aware of privacy laws, complete assigned/required privacy training, and act with the highest honor towards all private information.

For further information, go to <https://www.healthprivacy.umn.edu/>.

### **FERPA (Family Educational Rights and Privacy Act): Student Records**

FERPA grants four specific rights to a post-secondary student:

1. To see the information that the institution is keeping on the student.
2. To seek amendment to those records and in certain cases append a statement to the record.
3. To consent to disclosure of his/her records.
4. To file a complaint with the FERPA Office in Washington.

In addition:

- U of MN Faculty and Staff have a legal responsibility, under FERPA, to protect the confidentiality of your student educational records.
- Student educational records are considered confidential and may not be released without written consent of the student.
- Student information stored in electronic format must be secure and available only to those entitled to access that information.

## 5.5 INTERNATIONAL STUDENT REQUIREMENTS

Note: International student requirements may change over time. For up-to-date information go to [iss.umn.edu](https://iss.umn.edu).

### **International Student Preparation Course**

The International Student Preparation Course is a tool to help new international students prepare for their arrival at the University by learning about certain expectations and requirements. Students are required to complete the International Student Preparation Course at least one week before their Immigration Check-In. More information can be found by visiting <https://iss.umn.edu/new/online.html>.

### **Immigration Check-In**

All new international students must visit the University of Minnesota International Student & Scholar Services office (ISSS) shortly after arrival in Minnesota. See [iss.umn.edu](https://iss.umn.edu) for directions, office hours, and services. ISSS will review immigration documents, register new students for the International Student Orientation Program, and provide information on how to release registration holds. These processes are mandated by the Department of Homeland Security (DHS); formerly known as Immigration and Naturalization Service (INS).

International students are allowed to enter the U.S. only within 30 days of their program start date. Regulations and SEVIS requirements provide strict guidelines regarding this date, to coincide with the term of admission.

### **Student and Exchange Visitor Information System (SEVIS)**

SEVIS is an electronic reporting system that provides the Department of Homeland Security with information on international students and scholars in the United States who hold F, J, and M visas. This internet-based record-keeping system maintains electronic data on all international students. The system tracks entries into and departures from the U.S.

In addition to the information routinely reported on I-20 and DS-2019 forms, other information is reported, including but not limited to: academic status, employment, and residential address.

For more information on SEVIS requirements, including those listed below, go to [iss.umn.edu](https://iss.umn.edu).

### **Academic Status**

International students must maintain full-time status. MPH students must register for at least six credits each semester. Under special conditions, students may apply for an exemption from the full-time status rule at the ISSS office. Students must apply for the exemption before registering for less than a full course of study.

### **Address Change**

International students MUST update their address within ten days of a change of address to maintain their legal immigration status. For more information go to [iss.umn.edu/INSGen/address.html](https://iss.umn.edu/INSGen/address.html).

## **5.6 COMPLIANCE**

### **Immunizations**

[boynton.umn.edu/immunization-requirement](https://boynton.umn.edu/immunization-requirement)

According to OSHA regulations, CDC guidelines, and University of Minnesota policy, Health Sciences students are required to have a health clearance as a condition of enrollment. You must complete this requirement by the 6th week of the semester or a registration hold will be placed on your student account. In addition, Internship or Applied Practice Experience locations may require additional immunizations based on the location and/or work being performed. Finally, international experiences may also require other immunizations; international requirements are listed here: [Travel](#)

More details and the downloadable Student Immunization Record form are available from Boynton Health at [boynton.umn.edu/immunization-requirement](https://boynton.umn.edu/immunization-requirement). You can also stop by Boynton Health to schedule services, click here for more information [boynton.umn.edu](https://boynton.umn.edu).

### **HIPAA (Health Insurance Portability and Accountability Act)**

HIPAA is a federal law related to the privacy of an individual's health care information.

All students in the Health Sciences, including School of Public Health students, must complete the University's online HIPAA Privacy training. The University of Minnesota provides online training courses on proper handling of health information and information security; everyone must complete this training, even if they don't work directly with Protected Health Information. This is because students may have incidental contact with Protected Health Information, and because students may encounter HIPAA violations, and are required to know how to respond to these violations.

This training consists of two separate training courses that you may complete online: (HIP016) HIPAA Training; and (ISA17) University Information Security Awareness Training.

Login to <https://training.umn.edu/> and select **My Training** to see if you have been assigned the training, or click **Course Catalog** and enter the course name or number above.

### **Criminal Background Checks**

Students should be aware that Minnesota law may require certain facilities to conduct a criminal background check for all personnel with direct, and/or unsupervised client contact. Facilities that are covered by this law include hospitals, boarding care homes, outpatient surgical centers, nursing homes, home care agencies, residential care homes, board/lodging establishments providing health supervision services, and work with minor aged children. Students seeking internships or Applied Practice may be required to undergo a background check as well, depending on the agency or facility's internal policies. The School will assist students with these requirements; students should call the Student Services Center at (612) 626-3500, email [sph-ask@umn.edu](mailto:sph-ask@umn.edu), or go to A-395 Mayo for assistance.

### **Community Engagement Agreement**

Many students in the School of Public Health volunteer in the community. Liability insurance is available through the University provided that the student registers for PUBH 0020 (a zero-credit class) and has the approval of their academic faculty advisor.

Registration for PubH 0020 will be officially documented on the student's transcript; however, the zero-credit course has no tuition, no fees, no credits, and no grades. It is important to understand that a zero-credit registration for a community engagement activity is not a substitute for a required course or field experience.

Prior to registration, students are required to provide information about the experience by completing the Community Engagement Agreement available at [secure.ahc.umn.edu/publichealth/sphcommunity](https://secure.ahc.umn.edu/publichealth/sphcommunity). The agreement is complete once it has been approved by the student's advisor and the Registrar and Director of Academic and Student Affairs.

To complete the Student Engagement Agreement a student must provide the following information:

- Name of the organization
- Address
- Organization phone number
- Supervisor within the organization
- Description of the activity
- Description of how this activity relates to their development as a public health professional
- Semester and date of experience
- Electronic signature of academic advisor

When the agreement is approved, the student will be contacted by email and provided with a registration permission number.

### **Health Insurance Requirement for Health Sciences Students Participating in Applied Practice/Clerkship/Practicum Experiences**

**School of Public Health students are expected to have health insurance coverage while participating in their Applied Practice, clerkship, or practicum experiences. This is a University of Minnesota Health Sciences requirement. A school/program or site may ask a student for proof of health insurance while participating in their AP, clerkship, or practicum experience. If the student cannot provide proof of health insurance, indicating they are not in compliance with this requirement, they will be pulled from the experience.**

The complete policy can be found on the Health Sciences Education website.

## **6. GROUPS, ASSOCIATIONS AND SOCIETIES**

### **6.1 STUDENT GROUPS**

#### **School of Public Health Student Senate**

[sph.umn.edu/current/senate/](https://sph.umn.edu/current/senate/)

The Student Senate is composed of graduate students from within the School of Public Health: it strives to serve as a representative body for students in SPH. The Student Senate provides a voice for students and allows them to get involved in university government, plan social activities, network with departments, work with faculty, demonstrate leadership skills, assist student organizations in hosting school-wide events, and develop creative solutions to new challenges. Student Senate also provides various grants to students and SPH student groups.

#### **Professional Student Government**

[gopherlink.umn.edu/organization/PSG](https://gopherlink.umn.edu/organization/PSG)

The professional student governance on the Twin Cities campus of the University of Minnesota rests with the Professional Student Government (PSG). All currently registered professional students at the University of Minnesota are members of PSG.

PSG represents and serves students in the Carlson School of Management, Law School, Medical School, Dental School, School of Nursing, College of Pharmacy, School of Public Health, College of Veterinary Medicine, College of Education and Human Development, and Humphrey School of Public Affairs. PSG is a resource for its 10-member Councils, the primary contact point for administrative units, a professional student policy-making and policy-influencing body, and as a center of inter- and intra-collegiate interaction among professional students.

#### **Council of Graduate Students (COGS)**

[cogs.umn.edu](https://cogs.umn.edu)

The Council of Graduate Students (COGS) is the official student governing board of the Graduate School, representing all Graduate Students at the U of M. The U administration looks to COGS for consultation and direction on all matters pertaining to the Graduate School experience, including Graduate Assistant issues.

#### **Center for Health Interdisciplinary Programs (CHIP)**

[chip.umn.edu/](https://chip.umn.edu/)

The Center for Health Interdisciplinary Programs (CHIP) is a department of the Office of Education in the Health Sciences Senior Vice President's Office. The CHIP Student Center serves all Health Sciences students. CHIP exists to foster interdisciplinary

relationships and teamwork between Health Sciences students. CHIP provides educational, leadership, and service opportunities for students.

### **Minnesota International Student Association (MISA)**

[facebook.com/misa.umn/](https://facebook.com/misa.umn/)

The Minnesota International Student Association (MISA) is a non-profit organization that aims at working in the interest of international students at the University of Minnesota. MISA represents the international community of the University of Minnesota Campus. There are over 6000 international students on this campus, whose length of stay varies from three months to several years. MISA plays a vibrant role in students' social lives, by being the forum for international students on the U of M campus and by organizing events throughout the year.

### **Other Groups**

[sua.umn.edu/groups/](https://sua.umn.edu/groups/)

SPH is home to a number of student organizations. Some are registered campus groups and others are more focused on a division or program. In addition, there are more than 900 student groups on campus registered with the University's Student Unions and Activities Office, including academic societies, cultural centers, sports clubs, political action groups and fraternities and sororities. These organizations provide students with endless involvement opportunities and the chance to interact with others who share a similar interest.

If you want to know more about current SPH groups or are interested in forming a group within the School of Public Health, please contact [sph-ask@umn.edu](mailto:sph-ask@umn.edu).

## **6.2 PUBLIC HEALTH RELATED ASSOCIATIONS AND AGENCIES**

### **American College of Healthcare Executives**

[ache.org](https://ache.org)

The American College of Healthcare Executives is an international professional society of more than 30,000 healthcare executives who lead hospitals, healthcare systems and other healthcare organizations.

### **American Public Health Association**

[apha.org](https://apha.org)

The American Public Health Association (APHA) is the oldest and largest organization of public health professionals in the world, representing more than 50,000 members from over 50 occupations of public health.

### **Association of Schools and Programs of Public Health**

[aspph.org](https://aspph.org)

The Association of Schools and Programs of Public Health (ASPPH) is the only national organization representing the deans, faculty, and students of the accredited member schools of public health and other programs seeking accreditation as schools of public health.

### **Centers for Disease Control and Prevention**

[cdc.gov](https://cdc.gov)

The Centers for Disease Control and Prevention (CDC) is recognized as the lead federal agency for protecting the health and safety of people - at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States.

### **Council on Education for Public Health**

[ceph.org](https://ceph.org)

The Council on Education for Public Health (CEPH) is an independent agency recognized by the US Department of Education to accredit schools of public health and public health programs offered in settings other than schools of public health.

### **Commission on Accreditation of Healthcare Management Education**

[cahme.org](https://cahme.org)

The Commission on Accreditation of Healthcare Management Education (CAHME) is the only organization that accredits individual academic programs that grant master's degrees in healthcare management in the United States and Canada.

### **Minnesota Public Health Association**

[mphanet](https://mphanet.org)

Founded in 1907, the Minnesota Public Health Association (MPHA) is a statewide professional organization actively serving Minnesotans, our members, and the public health profession through its efforts and activities. MPHA is an affiliate of the American Public Health Association.

### **National Institutes of Health**

[nih.gov](https://nih.gov)

Originally a one-room Laboratory of Hygiene in 1887, the National Institutes of Health today is one of the world's foremost medical research centers, and the Federal focal point for medical research in the U.S.

## **National Board of Public Health Examiners**

[nbphe.org](http://nbphe.org)

National Board of Public Health Examiners (NBPHE) established in 2005 as an independent organization, the purpose of which is to ensure that public health professionals have mastered the foundational knowledge and skills relevant to contemporary public health.

## **6.3 ALUMNI SOCIETIES**

### **School of Public Health Alumni Society**

<https://www.sph.umn.edu/alumni/sph-alumni-society/>

The University of Minnesota School of Public Health Alumni Society has members around the world. Consisting of 12,000+ alumni, the SPH Alumni Society plays a key role in the School and public health community as they continue to shape public health policy, conduct ground-breaking research, lead innovative public health solutions and contribute to the future of public health.

Since its inception in 1982, the School of Public Health Alumni Society has worked to serve alumni and students, promote excellence in programs and serve the needs of the School. Membership is automatically conferred upon all graduates, former students who have completed a minimum of 12-18 credits, faculty and administrators of the school.

The SPH Alumni Society is committed to building relationships with students through various activities, including the SPH Mentor Program, partnering with SPH Student Senate, and bringing alumni to students to provide professional development opportunities to students.

### **MHA Alumni Association**

[sph.umn.edu/alumni/mha/](http://sph.umn.edu/alumni/mha/)

The Minnesota MHA Alumni Association was established in 1948 to facilitate ongoing support of the Healthcare Administration program and to continue fellowship among alumni. With 3200+ alumni members, the Association supports MHA students through scholarships, professional connections, and learning opportunities, and strives to provide MHA alumni with ongoing opportunities for education, engagement and philanthropy.

## 7. DIVISION OF BIOSTATISTICS

### 7.1 INTRODUCTION

J. Arthur Harris and Edna Lockwood of the Botany Department taught the first biostatistics course at the University of Minnesota in 1924. Biostatistics courses continued in the Botany Department until 1936, when the biostatistics group became the Biometry Division, headed by Alan Treloar, in the new Department of Preventive Medicine and Public Health. By 1965, when Biometry opened a computer center for students and faculty, Biometry was the largest division in the School of Public Health. The Division head at the time was Jacob Bearman, who has endowed an annual student award. Byron Brown headed the Division from 1965-1968, followed by Richard McHugh until 1972. Marcus Kjelsberg was Division Head until 1986, when Biometry became Biostatistics, with Thomas A. Louis as its new Division head. In 1999, Richard Tweedie became head of Biostatistics. Following Dr. Tweedie's sudden death in June 2001, John Connett became the Division head of Biostatistics. In May 2010, Bradley Carlin began his role as Biostatistics Division Head until he retired in June 2018. Joe Koopmeiners served as the interim Division Head for 2 years and in 2020 was named the Biostatistics Division Head.

During the 2020-2021 academic year, there will be 38 faculty with Biostatistics Graduate Education responsibilities and 91 graduate students: 48 in the PhD program and 43 in the Master's degree programs. Our website at [www.sph.umn.edu/biostatistics/](http://www.sph.umn.edu/biostatistics/) has notes on the faculty and their research and collaborative projects.

### 7.2 OVERVIEW OF DEGREE PROGRAMS

Biostatistics has four different graduate degree programs and one graduate minor program:

- Master of Science (MS) Plan B (*section 8*)
- Master of Science (MS) Plan A (*section 9*)
- Master of Public Health (MPH) (*section 10*)
- Doctor of Philosophy (PhD) (*section 11*)
- Graduate Minor in Biostatistics (*section 12*)

The MS-Plan B program takes two academic years for full-time students, but we also accept part-time students and will help plan a schedule for completing the MS. The first year consists of two courses in applied biostatistics methods with computing in SAS and R, two semesters of statistical theory, and a health science foundation course. At the end of the first year, there is a written exam covering the two theory and two methods courses. During the summer many students gain experience at an internship in industry or research. In the second year, students take courses in clinical trials, analysis of survival data, plus eight biostatistics elective credits. The MS is completed with a project during the final semester.

The MS-Plan A is primarily pursued by students who already have a research degree in a closely related field, for example, a PhD in mathematics. The MPH has additional requirements beyond those for the MS-Plan B, including an Applied Practice Experience (internship) and coursework in all of the Public Health core areas.

The PhD program is designed to be completed in 4-5 years. Required PhD-level coursework includes semester courses in linear models, probability models, advanced statistical inference and Bayesian decision theory. Students entering the PhD program without an MS in Biostatistics/Statistics complete one year of preparatory coursework and a first-year exam before taking PhD-level courses during their second year. The summer after completing required PhD courses, students take the PhD preliminary written exam given near the end of August. The remainder of the program consists of completing biostatistics electives and performing dissertation research.

### 7.3 DIVERSITY, INCLUSION, AND CLIMATE

The Division of Biostatistics are committed to creating a diverse, welcoming, and supportive community that is free of harassment. Students, faculty, and staff in the Division of Biostatistics are expected to treat others with respect and behave in a courteous and professional manner at all times. We explicitly reject bias, discrimination, and exclusion on the basis of race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. The academic environment has many explicit and implicit power structures, and it is important for community members, particularly those in leadership positions, to be vigilant to prevent abusive or coercive behavior. The Division of Biostatistics has a Diversity, Climate, and Inclusion committee ([bio-inclusion@biostat.umn.edu](mailto:bio-inclusion@biostat.umn.edu)) to ensure we meet expectations.

If you see or experience misconduct, bias, or discrimination during any on-campus event or at an off-campus professional event (such as at a conference), you can report the incident to please consult with a University employee with whom you feel comfortable, or directly report to the University's [Office of Equal Opportunity and Affirmative Action](#) (EOAA). Per University of Minnesota policy, University employees must report certain types of prohibited conduct they are made aware of (including sexual harassment, sexual assault, stalking, relationship violence, and related retaliation) to the EOAA; see the [University's Policy on Sexual Harassment, Sexual Assault, Stalking and Relationship Violence](#) for further details. The EOAA will review the situation and

work with you to determine the best course of action, and help ensure that University rules prohibiting retaliation against individuals reporting misconduct are respected. If you would like more information or would like to discuss an experience, several University resources are available: [Student Counseling Services](#) and [Boynton Health Center](#) provide confidential consultations, and the [Aurora Center](#) is a confidential resource for understanding sexual misconduct and supporting its victims.

[SPH Student Services](#) can help you better understand your rights and the resources available on campus. In addition, the Biostatistics Division has two Mental Health Advocates, Dr. Lynn Eberly ([leberly@umn.edu](mailto:leberly@umn.edu)) and Marta Shore ([shore007@umn.edu](mailto:shore007@umn.edu)), who are available to help you find resources to help with any concerns you are experiencing. If you have general concerns about the working environment in the Division of Biostatistics, or suggestions for how to build a more inclusive community, please contact the Diversity, Climate, and Inclusion committee ([bio-inclusion@biostat.umn.edu](mailto:bio-inclusion@biostat.umn.edu)), the Division Head, the Director of Graduate Studies, a trusted faculty or staff member, or SPH Student Services.

*For additional information and resources students can refer to the SPH section 2.5.*

## 7.4 ADVISING

The Division of Biostatistics is committed to creating and sustaining high quality advising in the following four areas. For additional information and resources *students can also refer to the SPH section 1.9:*

- **Administrative Advising:** advising on course planning and scheduling, policies, procedures and benchmarks of the degree program/major, SPH, and the University. (In Biostatistics this is the Program Coordinator.)
- **Academic Advising:** general guidance on topics related to program/major including, but not limited to program focus (may include identifying appropriate course work options), project selection and career planning. (Academic advisors are assigned to new students at random and students may switch advisors at any time by contacting the Program Director/Director of Graduate Studies.)
- **Applied Practice Experience (AP)/Internship/Practicum Advising:** specific and targeted advising for Applied Practice Experience (AP)/internship/practicum development, placement and completion. A faculty advisor can assist a student as they select the type of field experience that would best match their goals. Careers Services staff can help a student to learn how to network with other students and alumni to explore possible field experiences sites.
- **Masters Integrative Learning Experience (ILE) Project/Thesis/Plan A&B/Dissertation Advising:** specific and targeted direction on a master's integrative learning experience project or a PhD dissertation including, but not limited to development, completion and publication. MS students choose their project advisor for their Plan B project/Integrative Learning Experience (ILE) during the second year. This does not need to be the same person as their academic advisor. When PhD students choose their dissertation advisor, this faculty member also becomes their academic advisor.

Students will be assigned to an advising team consisting of the program coordinator, faculty advisor, project advisor and program chair. All members of the team share responsibility for creating a successful advising relationship.

### Advising Expectations for Students

Biostatistics students are expected to...

- Actively contribute to a welcoming and supportive SPH climate by treating all others with respect and behaving in a professional and courteous manner at all times
- Regularly read and respond to University email; email is the official mode of communication at the University of Minnesota
- Review program objectives and educational documents (i.e. Student Guidebook, etc.), as needed, or when directed by program coordinator or program chair; students are responsible for knowing the requirements of the degree program
- Initiate meetings with advisor(s) at least once per semester; regularly communicate with faculty advisor(s) and/or program coordinator about program progress
- Respond to inquiries from faculty or staff in a timely manner
- Fulfill educational and advising commitments, such as appointments, project deadlines, etc.

### Advising Expectations for Faculty

Faculty advisors are expected to...

- Actively contribute to a welcoming and supportive SPH climate by treating all others with respect, behaving in a courteous and professional manner at all times, and identifying and reporting inappropriate behavior
- Serve as a model and example of respectful behavior
- Refer advisee to Program Coordinator for course planning/scheduling, policy and procedural information
- Review program objectives and educational documents at least on an annual basis, (i.e. Student Guidebook, etc.), or when directed by Program Coordinator or Program Chair
- Initiate meetings with advisees at least once per semester; regularly communicate with students on progress
- Respond to student inquiries in a timely manner
- Provide reasonable office hours and/or appointments and be generally available to student inquiries; communicate with students about extended absences or travel

- Provide referrals to school and university resources when appropriate (e.g. Student Mental Health Services)

## 7.5 INTERNSHIPS

A summer internship at the Centers for Disease Control, a medical or pharmaceutical company, or at a research institution, can be a valuable experience and a great help on a resume.

Start looking early: The time to start looking for an internship for the summer after the first year is during the December-January break between semesters. The January issue of *Amstat News* lists internship opportunities, as does the following website: <https://www.amstat.org/ASA/Your-Career/JobWeb.aspx>

Federal regulations apply to international students who wish to hold internships; see *section 7.7*.

## 7.6 SEMINARS

An advantage of being in a major research program like ours is the opportunity to learn what other top biostatisticians, from both academia and industry, are doing; divisional seminars provides such an opportunity.

The Division of Biostatistics offers research seminar talks, usually on Wednesday afternoons at 3:30, preceded by an informal reception at 3:00. All students are strongly encouraged to attend seminars; PhD students are required to attend. The schedule of seminars is at: <http://www.sph.umn.edu/academics/divisions/biostatistics/bioevents/seminars/>.

The School of Statistics also offers research seminars. Further information can be found at [www.stat.umn.edu](http://www.stat.umn.edu).

## 7.7 INTERNATIONAL STUDENT REQUIREMENTS

### Document Check

Students must visit the International Student and Scholar Services (ISSS) office to have their documents checked upon arrival in the U.S. The ISSS has a web page of orientation information for international students at <http://www.iss.umn.edu/new/default.html>.

### Health Insurance

The University of Minnesota requires all international students and their spouses and children to enroll in the Student Health Benefit Plan (SHBP) unless they are covered by a United States-based-employer-sponsored health plan or the Graduate Assistant Insurance Plan (GA Plan) provided by the University of Minnesota. If you have questions or need further information, please contact the Student Health Benefits Office (612.624.0627) located in room N323 at Boynton Health Service [studins@bhs.umn.edu](mailto:studins@bhs.umn.edu).

### Spoken English Testing and English Proficiency

Students for whom English is a second language must demonstrate proficiency in spoken English. All Biostatistics students must have an ELP proficiency rating of 1 or 2. Proficiency is assessed in one of the following ways:

English Language Proficiency (ELP) rating earned through coursework with the Center for Educational Innovation (CEI)

Speaking subscore of iBTTOEFL (internet-based Test of English as a Foreign Language).

SETTA (Spoken English Test for Teaching Assistants) test (TC campus).

More information can be found at <https://cei.umn.edu/setta-information>.

It is best to confirm one's ELP rating with the Center for Educational Innovation during fall semester of the first year. TOEFL scores are not automatically uploaded to the CEI office. Students must make an appointment with the CTL office and provide proof of their TOEFL score.

Students who do not have a rating of 1 or 2 must take the SETTA test or a course in Classroom Communication Skills. Masters students who do not have a 1 or 2 proficiency rating are much less likely to be awarded Graduate Assistantships.

### Maintain Full-Time Student Status

Students must register for at least 6 credits each semester. Under special conditions, they may apply for an exemption from the 6-credit rule at the ISSS office. Students must apply for the exemption before registering for fewer than 6 credits.

### Notification of Changes

Students should immediately notify the Program Director/Director of Graduate Studies if their visa type changes or there is a change in their graduate assistantship. We will work with you to help solve any problems that arise.

## Internships

Students who find an internship opportunity during their graduate program may apply with the ISSS to hold an internship under **Curricular Practical Training (CPT)**. The federal requirements are:

Students must find a Biostatistics faculty member who will act as "sponsor." This faculty sponsor signs the ISSS application, and agrees to assess the student's work during the internship. The student and faculty sponsor should agree in advance on the terms of this assessment; a brief written report is usual.

Students must register for PubH 8494 Biostatistics: Directed Research (1 credit), with the faculty sponsor.

There is another program called **Optional Practical Training (OPT)** that may be used after students have finished all requirements for their degree. As with CPT, a faculty sponsor and assessment are also needed for Optional Practical Training and the student may need to register for Grad 0999 (free, no-credit). However, a student who spends 12 months or more in full-time Curricular Practical Training is not eligible for Optional Practical Training. Please contact the ISSS for more details.

## 7.8 TEACHING ASSISTANT AND RESEARCH ASSISTANT POSITIONS

The Division of Biostatistics gives financial support in several ways, but mostly through graduate assistantships: Teaching Assistant (TA) or Research Assistant (RA) positions or a combination of both. Graduates use skills from both types of work, so there is an effort to assign each supported student to both at some time during their program. The Program Director/Director of Graduate Studies in consultation with the faculty makes TA and RA assignments.

### Teaching Assistantship (TA)

Teaching assistants are usually assigned to one or two courses each semester, and are expected to work 10 hours each week (25% appointment) for each assigned course working one-on-one with students to answer questions, grading papers and exams, or helping in the computer lab.

### Research Assistantship (RA)

Research assistants are assigned to research projects under the supervision of faculty and staff. Research assistants are expected to work 10 hours each week for a 25% appointment or 20 hours each week for a 50% appointment.

The levels of financial support depend on the highest academic degree held by the student: Level I for students with a BA or BS; Level II for students with an MA, MS, higher degree or students in the Biostatistics PhD program.

Should a Level 1 student earn a Master's degree during an appointment period as an RA or TA, the student's salary will increase at the start of the next pay period after the degree is conferred.

The following table summarizes the salary, benefits, and expectations for half-time (25%) and full-time (50%) support for the nine-month school year during the 2020-2021 academic year. Further details of benefits are at [www1.umn.edu/ohr/gae/benefits/index.html](http://www1.umn.edu/ohr/gae/benefits/index.html)

	<b>Half-Time Support 25% Appointment</b>	<b>Full-Time Support 50% Appointment</b>
<b>Hours of Work Per Week</b>	10 hours	20 hours
<b>MS/PhD Tuition [14 credits/semester] *</b>	50% tuition benefit, resident rate*	100% tuition benefit*
<b>Medical Benefit</b>	~50% coverage	~ 95% coverage
<b>Minimum 9-Month Salary [Level I]</b>	\$7,671	\$15,343
<b>Minimum 9-Month Salary [Level II]</b>	\$9,941	\$19,882

The maximum tuition benefit is defined by the Graduate School tuition plateau. For 2020-21 the tuition plateau cap will be \$8,790.00 per semester for a 50% appointment.

MPH students may calculate the tuition benefit with the following method:

Multiply your actual appointment percentage times two to determine tuition benefit percentage

Multiply the maximum tuition benefit by your calculated tuition benefit percentage

Subtract this amount from your total tuition (number of registered credits times \$1,014 resident or \$1,332 nonresident tuition).

#### **Example 1: 25% appointment**

25%	(Appointment Percentage)
<u>X 2</u>	
50%	(Tuition Benefit Percentage)
\$8,790.00	(Maximum 2020-2021 Tuition Benefit)
<u>X 50%</u>	(Tuition Benefit Percentage)
\$4,395.00	(Tuition Benefit)
\$12,168.00	(12 cr. at \$1,014 SPH resident rate)
<u>- 4,395.00</u>	(Tuition benefit)
\$ 7,773.00	(Tuition billed to MPH student)

#### **Example 2: 50% appointment**

50%	(Appointment Percentage)
<u>X 2</u>	
100%	(Tuition Benefit Percentage)
\$8,790.00	(Maximum 2020-2021 Tuition Benefit)
<u>X 100%</u>	(Tuition Benefit Percentage)
\$8,790.00	(Tuition Benefit)
\$12,168.00	(12 cr. at \$1,014 SPH resident rate)
<u>- 8,790.00</u>	(Tuition benefit)
\$ 3,378.00	(Tuition billed to MPH student)

#### **Dates of Employment for Graduate Assistantships**

RA and TA positions actually start a week before classes begin in the fall, and continue a week after classes end in the spring. There is no official vacation in December. Under the University rules, all graduate assistants are expected to be present to work during the entire term they are employed, so this means that vacation time must be negotiated in advance with the supervisor. Here are the time periods when graduate assistants are employed:

	<b>Start Date</b>	<b>End Date</b>
<b>Fall Semester 2020</b>	August 31, 2020	January 13, 2021
<b>Spring Semester 2021</b>	January 14, 2021	May 30, 2021

Students who terminate a graduate assistantship before the contracted ending date will be required to "pay back" a prorated amount of tuition and health insurance.

#### **Summer Support**

Summer RA/TA positions generally do not cover summer tuition costs.

#### **Length of Financial Support**

PhD students, who have completed their MS degree and make satisfactory progress (*see section 11.7*), will receive financial support for up to four years. All other students in the PhD program will be supported for a maximum of 5 years. If funding is available, we will support MS and MPH students for up to two years, as long as they make satisfactory progress (*see section 8.6*). Since future research funding is always uncertain and because of our increasing student body, we may not be able to promise this funding for future MS/MPH students. Students assigned a graduate assistantship will receive a letter of appointment before the appointment date (semester) describing their assignment. The Division cannot make a commitment to continue that assistantship longer than the payroll appointment letter outlines.

## Finding Other Assistantships

Students admitted to the MS or PhD programs without financial support are eligible to apply for any graduate assistantship within the University. All graduate assistants receive the benefits listed above, although salaries may differ. All graduate assistant openings are listed at <https://humanresources.umn.edu/content/find-job>

## 7.9 STUDENT MAILBOXES

All division students have a mailbox and should check it frequently for information. Mailboxes are located in Mayo A446. This room is locked at all times. The combination to the door can be obtained from the Biostatistics Mayo staff (Megan Schlick or Sally Olander).

## 7.10 DIVISION TRAVEL POLICY FOR BIOSTATISTICS STUDENTS

The 2020-2021 (July 1, 2020 – June 30, 2021) Division policy for Biostatistics student travel is as follows:

1. All students giving a contributed invited, or poster presentation of their research at a conference (ENAR, JSM, etc.) will be eligible for up to \$800 in support.
2. For those who obtain external matching funds (say, an ENAR Student Travel Award, any of the JSM student travel awards sponsored by the various ASA sections, etc.), the amount of expenses eligible for reimbursement will increase to \$1600. Students may elect to split this funding across more than one meeting -- say, using \$900 to supplement JSM travel and the remaining \$500 to supplement ENAR or other travel.

Prior to travel, email all requests for approval to use these funds to Division Head, Joe Koopmeiners ([koopm007@umn.edu](mailto:koopm007@umn.edu)) with a copy to Janet Bendickson ([j-bend@umn.edu](mailto:j-bend@umn.edu)). Save your receipts so the Division of Biostatistics can process your reimbursement after you return. Upon the completion of your travel, please submit receipts to: Janet Bendickson ([j-bend@umn.edu](mailto:j-bend@umn.edu)).

Per University reimbursement policy, expenses for reimbursement must be submitted within 60 days of the expense date or trip return date. (<https://policy.umn.edu/finance/travel-proc02>). In addition, if you travel on UMN business and you arrive/depart earlier/later than the meeting time for personal time, the Research Compliance office requires that several airfare quotes are included in the backup material if you add vacation or personal days to your airfare. One quote should show the cost of the airfare for the specific days of the business travel. Additional quotes would indicate the cost of airfare with the additional personal days (<https://policy.umn.edu/finance/travel>).

**IMPORTANT:** Due to COVID-19, travel restrictions may be mandated by the University of Minnesota. While air travel may be restricted during this time, students are encouraged to consider attending online/virtual conferences (i.e. ENAR, JSM, etc.) To request reimbursement approval to attend an online/virtual conference, contact the Division Head, Joe Koopmeiners ([koopm007@umn.edu](mailto:koopm007@umn.edu)) with a copy to Janet Bendickson ([j-bend@umn.edu](mailto:j-bend@umn.edu)) prior to registering for the event.

## 8. BIostatistics MS Plan B Degree Program

### 8.1 Biostatistics MS Competency Statement

Biostatisticians are key collaborators in scientific research, providing expert advice on and direct involvement in study design, implementation, analysis, and communication. The Biostatistics program balances education in applied and theoretical biostatistics, mathematical statistics, and computing, all within the context of public health, medicine, and clinical translational research. The objectives of the MS program in Biostatistics are (1) to expose students to the basic principles of the core areas in public health, (2) to prepare them for careers involving application of statistical methods to public health problems, and (3) to prepare them for possible later work toward a PhD degree in biostatistics. Upon graduation, a student with an MS degree should be able to apply basic scientific and statistical principles to the design and analysis of both experimental and observational studies.

<b>Biostatistics MS Competencies</b>	PUBH 6250 Foundations in Public Health	PUBH 7405 Biostatistics: Regression	PUBH 7406 Advanced Regression and Design	PUBH 7420 Clinical Trials: Design, Implementation, and Analysis	PUBH 7450 Survival Analysis	PUBH 7494 Integrative Learning Experience (i.e. Plan B)	STAT 5101 Theory of Statistics I	STAT 5102 Theory of Statistics II	STAT 8101 Statistical Theory I	STAT 8102 Statistical Theory II
Use a general understanding of public health research, practice, and ethics to inform biostatistical practice.	X			X	X					
Collaborate in the design of research studies of human health and disease.		X	X	X	X					
Implement tabular and graphical displays of quantitative information in ways that are clear to non-statistical scientists.		X	X			X				
Draw inferences from quantitative data.		X	X	X	X	X	X	X	X	X
Communicate those inferences and their interpretation to non-statistical scientists		X	X	X	X	X				
Write programs in two or more statistical packages.		X	X		X					
Address a public health or research question with statistical analysis and/or simulation study.			X	X		X				

## 8.2 REQUIREMENTS

### Coursework

For the MS-Plan B program, students must complete a minimum of 33 credits to include:

Six core biostatistics courses: Regression (PubH 7405), Advanced Regression and Design (PubH 7406), Theory of Statistics I and II (Stat 5101, 5102; or Stat 8101, 8102), Survival Analysis (PubH 7450), and Clinical Trials, (PubH 7420).

Three biostatistics electives (at least 8 credits total), usually taken during the second year.

PubH 6250 Foundations of Public Health, usually taken during the first year.

PubH 7494 Integrative Learning Experience (ILE): Biostatistics (3 credits), taken while completing Plan B project/Integrative Learning Experience (ILE).

Students who are not native speakers of English must show proficiency in spoken English; see section 7.7.

Additional requirements include: maintain a GPA of 3.0, pass a comprehensive written exam, complete the Plan B Integrative Learning Experience (ILE) project, and pass the final oral exam. All courses in the MS-Plan B program must be taken with the A/F grading option.

### Standard MS-Plan B Course Schedule

#### Fall Semester – Year One

Course	Title	Credits
PubH 7405	Regression	4
Stat 5101 or Stat 8101	Theory of Statistics I (5101)* Theory of Statistics I (8101)*	4 3
PubH 6250	Foundations of Public Health	2

#### Spring Semester – Year One

PubH 7406	Advanced Regression and Design	4
Stat 5102 or Stat 8102	Theory of Statistics II (5102)* Theory of Statistics II (8102)*	4 3
Varies	Biostatistics Elective**	2-4
<b>Comprehensive Written Exam to be taken after finals of Spring Semester</b>		

#### Fall Semester – Year Two

Course	Title	Cr
PubH 7450	Survival Analysis	3
Varies	Biostatistics Elective**	2-4
Varies	Biostatistics Elective**	2-4

#### Spring Semester – Year Two

PubH 7420	Clinical Trials	3
PubH 7494	Master's Project: Biostatistics	3
Varies	Biostatistics Elective**	2-4

\* CHOOSING BETWEEN STAT 5101-5102 AND STAT 8101-8102: Student may take either the theory sequence Stat 5101-5102 or the theory sequence Stat 8101-8102. Students should consider taking Stat 8101-8102 if they have a strong background in mathematics and especially if they are considering going on for a PhD in Biostatistics.

\*\* Biostatistics Electives: Students are required to complete 3 Biostatistics elective courses (at least 8 credits). There are several opportunities in the standard MS curriculum for students to register for these courses.

## Accelerated (1.5 year) MS-Plan B Course Schedule

For highly motivated students, the existing Biostatistics MS program can be completed in 1.5 years. If a student selects this option, the student should discuss their curriculum plan with their academic advisor and program coordinator.

### Fall Semester – Year One

Course	Title	Credits
PubH 7405	Regression	4
Stat 5101 or Stat 8101	Theory of Statistics I (5101)* Theory of Statistics I (8101)*	4 3
PubH 6250	Foundations of Public Health	2
Varies	Biostatistics Elective**	1-4

### Spring Semester – Year One

PubH 7406	Advanced Regression and Design	4
Stat 5102 or Stat 8102	Theory of Statistics II (5102)* Theory of Statistics II (8102)*	4 3
PubH 7420	Clinical Trials	3
Varies	Biostatistics Elective**	2-4
<b><i>Comprehensive Written Exam to be taken after finals of Spring Semester</i></b>		

### Summer between Years 1 and 2 (optional registration opportunity)

Varies	Health Science Elective***	3-4
PubH 7494	Master's Project: Biostatistics****	3

### Fall Semester – Year Two

Course	Title	Cr
PubH 7450	Survival Analysis	3
PubH 7494	Master's Project (if not registered during the summer)	3
Varies	Biostatistics Elective**	2-4
Varies	Biostatistics Elective**	2-4

\* CHOOSING BETWEEN STAT 5101-5102 AND STAT 8101-8102: Student may take either the theory sequence Stat 5101-5102 or the theory sequence Stat 8101-8102. Students should consider taking Stat 8101-8102 if they have a strong background in mathematics and especially if they are considering going on for a PhD in Biostatistics.

\*\* Biostatistics Electives: Students are required to complete 3 Biostatistics elective courses (at least 8 credits). There are several opportunities in the standard MS curriculum for students to register for these courses.

\*\*\* PubH 6250 (Foundations in Public Health) could be taken online during the summer.

\*\*\*\* The Plan B could be started during the summer.

## Biostatistics Electives

Students need three biostatistics elective courses (at least 8 credits) chosen from the list below. The courses are grouped into topics, but students may choose any three courses. To use a course not listed below for a biostatistics elective, a student will need approval from their advisor and the Program Director/Director of Graduate Studies before registering for the course.

## Biostatistical Methods

Course	Title	Credits
PubH 7430	Statistical Methods for Correlated Data	3
PubH 7440	Introduction to Bayesian Data Analysis	3
PubH 7445/8445	Statistics in Genetics and Molecular Biology	3
PubH 7460	Advanced Statistical Computing	3
PubH 7461	Exploring and Visualizing Data in R	2
PubH 7462	Advanced Programming and Analysis in R	2
PubH 7465	Biostatistics Consulting	3
PubH 7470	Study Designs in Biomedical Research	3
PubH 7475/8475	Statistical Learning and Data Mining	3
PubH 7485/8485	Methods for Causal Inference	3
PubH 8422	Modern Non-parametrics ( <i>requires PhD level prerequisites</i> )	3
PubH 8472	Spatial Biostatistics ( <i>requires PhD level prerequisites</i> )	3
Stat 5401	Applied Multivariate Methods	3
Stat 5601	Nonparametric Methods	3

## Preparation for the Biostatistics PhD Program [see section 8.4]

Math 5615H	Honors: Introduction to Analysis I	4
Math 5616H	Honors: Introduction to Analysis II	4

## Related Software

GIS 5571	Introduction to Arc/Info	3
Geog 5561	Principles of Geographic Information Science	4

## Technical Writing in English for Non-native Speakers

Writ 5051	Research Writing Practice for Non-native Speakers	3
Writ 5052	Research Presentations and Conference Writing for Non-native Speakers of English	3

## Health Science Course Requirement

All Biostatistics MS students are required to complete PubH 6250 (Foundations in Public Health). The 2-credit course is offered as an online course.

## Minor Field

A minor field is optional, with extra requirements. Students must complete 6 or more credits in a single field outside biostatistics and need approval from the Program Director/Director of Graduate Studies in the minor field.

## Transferring Credits

Coursework from other institutions or programs may be transferred to the Biostatistics MS program with approval from the student's advisor and the Program Director/Director of Graduate Studies. Rules for transferring courses are given in the online Graduate Education Catalog at <https://policy.umn.edu/education/gradcreditdegree>. Students should NOT use the transfer credit function in GPAS. All students who have approved transfer coursework should contact the Program Coordinator to complete the transfer process.

## Registration Requirement and Student Status

MS students must register for at least six credits each semester to be certified by the Office of the Registrar as a full time Graduate School student. Full-time status is required to hold a graduate assistantship.

Students should maintain active student status from the beginning of their program until they graduate. To maintain active student status, a student must register every fall and spring semester. Students who have completed all required courses may register for Grad 0999, which is free, zero-credit, non-graded and fulfills the registration requirement. See <https://onestop.umn.edu/academics/special-registration-categories-graduate-and-professional-students>

Students who do not register for one semester lose their student status with the Graduate School. To regain student status, they must reapply; see <http://www.sph.umn.edu/site/docs/isph/Change-of-Status-Request.pdf> for details.

## 8.3 WRITTEN EXAMINATION

The written examination is given in May (the Thursday, 1 week after spring semester final exams). The written exam covers material from the two methods courses, (PubH 7405-7406) and the two statistical theory courses (Stat 5101-5102, for which Stat 8101-8102 is also more than adequate). Students are expected to take the exam the first time it is given after the student completes these courses. Students who are expected to take the exam but do not, will be officially recorded as failing the written exam. Exemptions can only be granted by the academic advisor and the Program Director/Director of Graduate Studies, in consultation with the Division Head. To help students prepare, previous years' written exams and answer keys are available for review and photocopying in the Division office.

The written exam is a three-hour, closed book exam. Students are issued hand calculators for the exam and may not use their own calculator. Students are assigned individual code letters when the test is given, and only this code appears on the student's test. Each test is scored independently by two faculty. Faculty meet within two weeks after the exam to decide the passing score, which takes into account the difficulty of the exam relative to previous years' exams. Only after the passing score is set are the faculty unblind to which student had which code letter. Academic advisors inform students whether or not they passed the exam. Faculty do not reveal scores or score rankings to the students. The exam's answers are made available to students after the passing score is set. Students may request additional information on their exam performance from their academic advisor.

Students have two chances to pass the exam. If they do not pass the first time, they must take the exam one year later. A student who fails on the second try or does not take the exam will not be allowed to continue in the MS program.

## 8.4 SATISFACTORY PROGRESS IN THE MS PROGRAM

Students are expected to advance steadily towards graduation, which is called making "satisfactory progress." To make satisfactory progress in the MS program, students should:

Register for courses every fall and spring semester until course requirements are completed. Students with graduate assistantships must register for at least 6 credits to maintain their full-time status, or lose their assistantship.

Maintain a GPA of at least 3.0 in the MS core courses and the MS required elective courses, and make up all grades of I (incomplete) within one year.

Take the written exam the first time it is given after the student completes PubH 7405-7406 and Stat 5101-5102 (or Stat 8101-8102). Students who are expected to take the exam but do not will be officially recorded as failing the written exam. Exemptions can only be granted by the academic advisor and the Program Director/Director of Graduate Studies, in consultation with the Division Head.

Submit Graduate Planning & Audit System (GPAS) planner 1 semester before intended graduation; see *section 8.7*.

Complete Plan B project/Integrative Learning Experience (ILE)/Integrative Learning Experience and pass the final oral examination within one semester of completing all required coursework.

In June, current students receive a letter from their academic advisor assessing their progress, and explaining any unfulfilled requirements for satisfactory progress.

If a student needs an exemption from these requirements, they must make a written request to both their academic advisor and the Program Director/Director of Graduate Studies. The request must include a written plan for finishing the MS program.

Students who fail to make satisfactory progress will be asked to meet with their academic advisor and the Program Director/DGS, to discuss the requirements for continuing in the program. These requirements and the time limit for fulfilling them will be given to the student in writing. If the requirements are not met within the deadline, the graduate faculty will vote to decide whether to dismiss the student from the program.

## 8.5 APPLYING TO THE PHD PROGRAM

Students who are enrolled in the MS program and who wish to continue to the PhD program must apply through the SOPHAS application process. Students should refer to the School of Public Health admissions website for the most up to date application process (<https://www.sph.umn.edu/prospective/application-process/>):

1. Discuss plans with their academic advisor and the Program Director/Director of Graduate Studies during their first year or after the Masters written examination.
2. Take the prerequisite, Math 5615H Real Analysis I (or MATH 4603 for those students who have had no exposure to Real Analysis) during fall semester of year two.
3. Submit a completed SOPHAS application by December 1. Applicants are encouraged to submit a recommendation letter from the Math 5615/Math 4603 instructor and at least one from a Biostatistics faculty member
4. If a student's PhD application states that they plan to finish their MS degree, it is important that they do so before the first semester after admission to the PhD program. This includes specifically finishing the Plan B project/Integrative Learning Experience (ILE) before the start of the fall semester of the PhD study. If the student does not complete the MS program by that time, they may forfeit chances of having a graduate assistantship until completion of all MS requirements.

If students have additional questions, they are encouraged to talk with the Biostatistics Program Coordinator.

## 8.6 PLAN B PROJECT/INTEGRATIVE LEARNING EXPERIENCE (ILE) AND GRADUATING

Plan B project/Integrative Learning Experience (ILE) should involve a combined total of approximately 120 hours (the equivalent of three full-time weeks) of work. Common topics for Plan B project/Integrative Learning Experience (ILE) include application and assessment of new methodology, a novel analysis of an interesting dataset, or a simulation study to compare statistical methods. As examples, written projects from previous students are in the Biostatistics Reading Room.

In Biostatistics, there are three requirements for Plan B project/Integrative Learning Experience (ILE):

1. A written report, with a review of the relevant biostatistical literature, technical explanation of the biostatistical method, and a clear exposition of the scientific background relevant to any data used. Computer code written for the project should be listed in an appendix, and carefully documented. The student should do all work on the project.
2. A 25-minute oral presentation of the project at a seminar, followed immediately by a final oral examination by the student's approved committee. The seminar is open to the public; the oral exam is not.
3. Students must register for PubH 7494 – Integrative Learning Experience: Biostatistics, for a total of 3 credits with the S/N grading option.

From start to finish (graduation), Plan B project/Integrative Learning Experience (ILE) requires at least six weeks, and many students take four or five months to complete their project. Below is a list of steps in carrying out a Plan B project/Integrative Learning Experience (ILE). If necessary, some steps can be finished quickly, but some cannot be rushed. A fixed deadline is that *students must give a complete final copy of their project, approved by their project advisor, to their oral examination committee two weeks before the seminar and final oral exam*. The student's Plan B project/Integrative Learning Experience (ILE) advisor decides when the written project is ready to give to the committee and this may take longer than many students expect. A student may find them self in a difficult situation if they accept a job with a fixed starting date before their advisor says they are ready to schedule their seminar and final oral exam. Here is a suggested timeline:

### During Fall Semester of Year Two:

Find a Plan B project/Integrative Learning Experience (ILE) advisor and a topic.

The Plan B project/Integrative Learning Experience (ILE) advisor is a member of the Biostatistics faculty with Graduate Education Responsibilities who is responsible for supervising the student's work, and approving the scope and content of the student's project. Students may choose their academic advisor as their project advisor, or they may choose another Biostatistics faculty member.

Another possibility is for the student to work on their project with a faculty member in a health science field outside Biostatistics, supervised by their Plan B project/Integrative Learning Experience (ILE) advisor in Biostatistics. This outside advisor would be a member of the final oral examination committee. In order to serve on this committee, the outside advisor must be listed as a Faculty member with Graduate Education Responsibilities with the Graduate School ([https://apps.asr.umn.edu/faculty\\_roles/](https://apps.asr.umn.edu/faculty_roles/)); please see the Program Coordinator to check on this. If they are not listed as a Faculty with Graduate Education Responsibilities, they will not be able to serve on a Biostatistics student's final oral examination committee.

### **During Spring Semester of Year Two, or about two months before graduation:**

MS students are required to submit numerous on-line forms to the Graduate School to report details about their degree coursework, examining committee members, and to obtain approvals at each step. It is important to initiate the required forms far enough in advance to allow time for automated routing for approvals and allow for delays. The Graduate Student Services and Progress office will not allow students to defend the master's project until all required forms have been submitted and approved.

1. In early January (or one semester prior to your degree completion) submit your Graduate Planning and Audit System (GPAS) planner. Student GPAS planner guide: <https://onestop.umn.edu/academics/how-use-gpas-planner>
2. Once a student's GPAS is approved by the Graduate School, a student can assign members to their master's final exam committee. This is submitted online at <https://onestop.umn.edu/academics/examination-committees#accord-5>. This step should be completed 8 weeks before a student plans to complete their Final Oral Exam.

The committee must have a minimum of 3 members; 2 members of the Biostatistics faculty including the student's academic advisor and 1 faculty member from outside Biostatistics. All committee members must be listed as a Faculty with Graduate Education Responsibilities with the Graduate School ([https://apps.asr.umn.edu/faculty\\_roles/](https://apps.asr.umn.edu/faculty_roles/)). Typically the committee is made up of the Plan B/Integrative Learning Experience advisor, the academic advisor (or some other Biostatistics faculty when the Plan B advisor is also the academic advisor), and a non-biostatistics faculty member whom the student had as a professor for a class or who has some relationship with the project.

For students declaring a minor, a faculty member from the minor department must be included and will fulfill the external member requirement.

3. Complete a first draft of the project and submit to the project advisor. For the format of the written project, please see recent students' projects in the Biostatistics Reading Room (Mayo A460). Students may need to revise this draft several times. Plan B project/Integrative Learning Experience (ILE) advisor decides when a student's written project is close enough to finished, and then gives the student permission to schedule the seminar and final oral examination.
4. Most students complete their projects and their final oral examination during spring semester of their second year or during the summer following this. If the project takes longer and the final oral examination will be scheduled during fall semester of the student's third year, then the student must register for fall semester to maintain active student status. Registering for Grad 0999, which is free, zero-credit, non-graded course, fulfills the registration requirement. If a student loses active student status they will not be able to graduate until they reapply and pay the application fee.
5. Download the Graduation Packet from the Graduate Student Services and Progress office (<https://apps.grad.umn.edu/secure/gradpacket/>). A student must have an approved GPAS and approved final exam committee on file before the Graduate Student Services and Progress office will release the Graduation Packet. The student should make sure that all the courses listed in GPAS and their final oral examination committee are correct. If the student has taken different courses than originally listed on their Graduate Planning and Audit System planner, then they should contact the Biostatistics Program coordinator.

The Graduation Packet contains all the forms and instructions a student will need to finish including: Graduation Instructions, the Final Examination Report request, and the Application for Degree.

### **The Final Oral Examination and Graduation**

The Graduate School awards degrees administratively every month. The earliest a student can graduate is at the end of the month of the student's seminar and final oral examination. Here are the final steps to finish:

1. Before the first day of the month in which a student wants to graduate: Complete the Application for Degree process via MyU (<https://onestop.umn.edu/academics/apply-graduate>).
2. When a student completes the Application for Degree process, the Graduate Student Services and Progress staff will check the student's GPAS. If the Graduate Student Services and Progress staff finds that the student has outstanding degree requirements, then the student will not be able to graduate until all requirements are met. All Graduate School requirements for the MS must be completed by the last working day of the month the student intends to graduate.
3. The student needs to choose a date and time for the final presentation with their committee. Inform Megan Schlick ([adam0489@umn.edu](mailto:adam0489@umn.edu)) of this date once confirmed with the committee. Megan will arrange a room for the presentation, as well as coordinate access to the online exit interview form. The exit interview is a way for graduating students to give comments on the Biostatistics program. Students may also schedule a meeting with the Division Head to discuss their experiences and provide feedback on the program, if desired.
4. Two weeks before the student's seminar and final oral examination: The student should give a complete final copy of their project, approved by their Plan B project/Integrative Learning Experience (ILE) advisor, and to each member of their oral examination committee.

5. At least 1 week before the student's seminar and final oral examination: The student should submit *Final Examination* form to the chair of their final exam committee. Students will have access to the *Final Exam* form in their graduation packet. Once the student completes the Final Exam form, the committee chair will receive an email with a link to the form.
6. After a student passes the final oral exam: Following the exam, the student's committee chair will electronically record the votes of each committee member listed on the form. Once the chair submits the form, the student is immediately notified of the committee's final decision.
7. The student will need to make all revisions in their written project that were required by their committee. When the student's Plan B project/Integrative Learning Experience (ILE) advisor accepts the revisions, the student should email the completed Plan B written project to Megan Schlick ([adam0489@umn.edu](mailto:adam0489@umn.edu)) in the Biostatistics office.
8. If a student wishes to attend a commencement ceremony, the School of Public Health holds commencement every May. (<https://www.sph.umn.edu/current/commencement/>)
9. Students are required to complete the School of Public Health Alumni/Career Survey at: [http://umn.qualtrics.com/jfe/form/SV\\_doRfMjgZueRCpNP](http://umn.qualtrics.com/jfe/form/SV_doRfMjgZueRCpNP)
10. Finally, the Biostatistics office will give all graduating student an Alumni Information form. Students are asked to fill out the contact information so we can keep in touch. Students should copy any files from their biostatistics network computer account, and return any Reading Room materials. Students must also return all University keys to the Biostatistics Division office.

## 9. BIostatISTICS MS PLAN A DEGREE PROGRAM

The Plan A Master's program requires that a student complete at least 20 credits with a GPA of 3.0, pass the MS written exam (see *section 8.2*), complete the thesis project and pass the final oral exam.

The required courses for the MS Degree Plan B do not prepare a student to write a thesis, that is, to do original research in biostatistics methodology. This is why nearly all students choose to do a written project (Plan B/Integrative Learning Experience) rather than a thesis. Only students with an advanced background in mathematics or theoretical statistics should consider Plan A.

Please consult <http://policy.umn.edu/education/masterscompletion> for detailed rules imposed by the Graduate School on the Plan A MS program. Here is a brief outline: Guided by the advisor and with the agreement of the Program Director/Director of Graduate Studies, the student selects at least 20 semester credits with at least 14 semester credits in biostatistics courses and at least 6 semester credits in a minor area or coordinated/related fields. All credits included in the official Graduate Planning and Audit System planner must be in graduate-level courses. A 3.00 minimum GPA must be maintained for all courses in the program. Students are expected to make satisfactory progress toward graduation; see *section 8.4*. Students who are not native-speakers of English must demonstrate proficiency in spoken English; see *section 7.7*.

The student must pass the MS written exam (see *section 8.3*) before starting the thesis under the guidance of the advisor. Students must also register for a minimum of 10 master's thesis credits (PubH 8777), but these cannot be used to meet course credit requirements. There is a final oral exam that consists of a defense of the thesis. A final copy of the thesis should be given to the Biostatistics office and the Graduate Student Services and Progress office.

## 10. BIOSTATISTICS MPH DEGREE PROGRAM

The Biostatistics MPH program require that students meet the Association of Schools of Public Health (ASPH) Core Competencies in seven core public health areas, including administration, behavioral science, biostatistics, environmental health, and epidemiology, ethics, and foundations. These competencies are met through the SPH core courses. *See Appendix A for a list of required competencies.*

The Master of Public Health (MPH) program has different course requirements than the MS plan B. In place of the 4 elective courses (PubH Foundations and 3 Biostatistics elective courses) which are required in the MS Plan B, the MPH requires six public health courses (1 taken from each public health core area listed below). The MPH program also requires students to complete an Applied Practice Experience (AP) (similar to an internship) in addition to a written master's project like the MS Plan B/Integrative Learning Experience (ILE) written project. Unlike the MS Plan B, the MPH does not have a comprehensive written exam requirement.

### 10.1 BIOSTATISTICS MPH COMPETENCY STATEMENT

Biostatisticians are key collaborators in scientific research, providing expert advice on and direct involvement in study design, implementation, analysis, and communication. The Biostatistics program balances education in applied and theoretical biostatistics, mathematical statistics, and computing, all within the context of public health, medicine, and clinical translational research. Employers' requirements are periodically assessed by surveys of and informal discussions with alumni and their employers, and the curriculum is often modified as a result of that feedback. No biostatistics or statistics professional organizations have developed competency sets for graduate programs. Thus, the Biostatistics programs' competencies reflect the views of the faculty and alumni on the critical knowledge and skills needed by biostatisticians, as well as review of peer programs' curricula.

<b>Biostatistics MPH Program Competencies</b>	PUBH 6020 Fundamentals of Social and Behavioral Science	PUBH 6102 Issues in Environmental and Occupational Health	PUBH 6250 Foundations of Public Health	PUBH 6320 Fundamentals of Epidemiology	PUBH 6341 Epi Methods I	PUBH 6741 Ethics in Public Health: Professional Practice and Policy	PUBH 6751 Management in Health Organizations	PUBH 7405 Biostat Regression	PUBH 7406 Advanced Regression and Design	PUBH 7420 Clinical Trials: Design, Implementation, and Analysis	PUBH 7450 Survival Analysis	PUBH 7494 Applied Practice Experience (AP) (i.e. field experience)	PUBH 7496 Integrative Learning Experience (ILE) (i.e. Plan B)	STAT 5101 Theory of Statistics I	STAT 5102 Theory of Statistics II
Use a general understanding of public health research, practice, and ethics to inform biostatistical practice.	X	X	X	X	X	X	X			X	X				
Collaborate in the design of research studies of human health and disease.				X	X			X	X	X	X				
Implement tabular and graphical displays of quantitative information in ways that are clear to non-statistical scientists.								X	X			X	X		
Draw inferences from quantitative data and communicates those inferences and their interpretation to non-statistical scientists.								X	X	X	X	X	X	X	X
Write programs in two or more statistical packages.								X	X		X				

<b>Biostatistics MPH Program Competencies</b>	PUBH 6020 Fundamentals of Social and Behavioral Science	PUBH 6102 Issues in Environmental and Occupational Health	PUBH 6250 Foundations of Public Health	PUBH 6320 Fundamentals of Epidemiology	PUBH 6341 Epi Methods I	PUBH 6741 Ethics in Public Health: Professional Practice and Policy	PUBH 6751 Management in Health Organizations	PUBH 7405 Biostat Regression	PUBH 7406 Advanced Regression and Design	PUBH 7420 Clinical Trials: Design, Implementation, and Analysis	PUBH 7450 Survival Analysis	PUBH 7494 Applied Practice Experience (AP) (i.e. field experience)	PUBH 7496 Integrative Learning Experience (ILE) (i.e. Plan B)	STAT 5101 Theory of Statistics I	STAT 5102 Theory of Statistics II
Address a public health or research question with statistical analysis and/or simulation study.				X	X				X	X			X		

## 10.2 REQUIREMENTS

MPH students must complete a minimum of 42 credits, including the required courses shown below. Additional credits needed to total 42 may be taken from any of the following: graduate-level courses related to biostatistics, statistics, or public health (including University of Minnesota minor degrees), PubH 7494 (ILE), and PubH 7496 (AP).

Six core biostatistics courses (22 credits): Regression (PubH 7405), Advanced Regression and Design (PubH 7406), Theory of Statistics I and II (Stat 5101, 5102), Survival Analysis (PubH 7450), and Clinical Trials, (PubH 7420).

Six public health core courses (12 credits): Administration (PubH 6751), Behavioral Science (PubH 6020), Environmental Health (PubH 6102), Epidemiology (PubH 6320 or 6341), Ethics (PubH 6741), Foundations (PubH 6250).

Complete a formal, supervised Applied Practice Experience (AP) consisting of at least 90 hours and register for PubH 7496.

Complete a written Integrative Learning Experience (ILE) consisting of approximately 120 hours and register for PubH 7494.

Pass the final oral exam.

Students who are not native speakers of English must show proficiency in spoken English; see section 7.7.

### Suggested MPH Course Schedule

#### Fall Semester – Year One

Course	Title	Credits
PubH 7405	Regression	4
Stat 5101	Theory of Statistics I	4
Varies	SPH Core Course(s)	1-3

#### Spring Semester – Year One

PubH 7406	Advanced Regression and Design	4
Stat 5102	Theory of Statistics II	4
Varies	SPH Core Course(s)	1-3

#### Fall Semester – Year Two

Course	Title	Cr
PubH 7450	Survival Analysis	3
PubH 7496	Applied Practice Experience (AP)	1-3
Varies	SPH Core Course(s)	1-3

#### Spring Semester – Year Two

PubH 7420	Clinical Trials	3
PubH 7494	Integrative Learning Experience (ILE)	1-3
Varies	SPH Core Course(s)	1-3
Varies	Remaining coursework to fulfill the 42 credit requirement	1-3

### Public Health Core Courses [12 credit hours]

Administration [one course]		
PubH 6751	Management in Health Services Organizations	2
Behavioral Science [one course]		
PubH 6020	Fundamentals of Social and Behavioral Science	2
Environmental Health [one course]		
PubH 6102	Issues in Environmental and Occupational Health	2
Epidemiology [one course]		
PubH 6320 or PubH 6341	Fundamentals of Epidemiology Epidemiological Methods I	3 3
Ethics [one course]		
PubH 6741	Ethics in Public Health: Professional Practice and Policy	1
Foundations of Public Health [one course]		
PubH 6250	Foundations of Public Health	2

## 10.3 OTHER MPH DEGREE REQUIREMENTS

### Public Health Core Area Requirements

Students working towards an MPH degree must satisfy competency requirements in the seven core areas of public health – administration, behavioral science, biostatistics, environmental health, epidemiology, ethics, and a foundation course. This is accomplished by satisfactorily passing (with a grade of B- or better) the public health core courses. *Students can also refer to section 3.5 for other options.*

### Applied Practice Experience (AP)

All students matriculating in an MPH program must complete a formal, supervised Applied Practice Experience consisting of at least 90 hours in order to graduate. The Applied Practice Experience (AP) is a hands-on opportunity to implement your public health knowledge and skills in a real-world setting. The goal of the AP is to demonstrate the application or practice of at least five public health competencies, as established by the Council on Education for Public Health (CEPH). At least three of the competencies must be foundational. The other two competencies may be specific to Biostatistics. Foundational competencies are available online: <https://drive.google.com/file/d/19H18bxdk6z9VIJS8Xulq8GghrACUUAUOO/view>. Neither prior professional degrees nor prior work experience in a field not closely related to the MPH degree program are sufficient grounds for waiving the Applied Practice Experience requirement.

Each program has established requirements for completion of AP. These requirements include criteria for type of experience, site selection, and preceptor; how students should initiate and arrange the AP; role of faculty supervisor; method of evaluation; and credit and course enrollment. Fieldwork requirements can take whatever form is deemed appropriate to the program, including internships, master's projects completed in a practice setting, or coursework with significant field or community work done under the guidance of a community preceptor. Guidelines for Biostatistics are found at [http://sph.umn.edu/site/docs/biostats/Biostats-MPH\\_Practicum.pdf](http://sph.umn.edu/site/docs/biostats/Biostats-MPH_Practicum.pdf).

All students must complete an AP module prior to beginning the experience. The online agreement provides streamlined, comprehensive for the student, their preceptors, and faculty advisor. Please refer to the current student Web site for this and other resources related to the AP <https://www.sph.umn.edu/current/field-experience/>. Similarly, an evaluation of the AP by both the preceptor and the student must be completed prior to receiving a satisfactory grade.

### Graduate Planning and Audit System (GPAS)

Students are required to submit their GPAS to their Program Coordinator at least one semester prior to their anticipated completion of coursework. *For more information refer to section 3.3.*

### Integrative Learning Experience (ILE)

Students must complete an Integrative Learning Experience (ILE), demonstrating synthesis of foundational and concentration competencies. Students in consultation with their faculty advisor select foundational and concentration-specific competencies appropriate to the student's education and professional goals. The ILE should involve a combined total of approximately 120 hours (the equivalent of three full-time weeks) of work. *See section 8.6 for a description of the project as it is the same as the MS Plan B project/Integrative Learning Experience (ILE).*

## **Satisfactory Progress**

Students are expected to advance steadily towards graduation, which is called making "satisfactory progress." To make satisfactory progress in the MPH program, students should:

Register for courses every fall and spring semester until course requirements are completed. Students with graduate assistantships must register for at least 6 credits, or lose their assistantship.

Maintain a GPA of at least 3.0 in the Biostatistics core courses, the MPH core courses, and additional courses to reach the 42-credit minimum, and makeup all incompletes within one year.

Complete the AP and ILE and pass the final oral examination within one semester of completing all required coursework.

In June, current students receive a letter from their academic advisor assessing their progress, and explaining any unfulfilled requirements for satisfactory progress.

If you need an exemption from these requirements, you must make a written request to both your academic advisor and the MPH Program Director. Your request must include a written plan for finishing the MPH program.

Students who fail to make satisfactory progress will be asked to meet with their academic advisor and the MPH Program Director, to discuss the requirements for continuing in the program. These requirements and the time limit for fulfilling them will be given to the student in writing. If the requirements are not met within the deadline, the graduate faculty will vote to decide whether to dismiss the student from the program.

## **Time Frame**

The maximum time allowed by the School of Public Health for completion of an MPH degree is five years. The five-year period begins with the first term of enrollment after admission to a degree program within the School.

## **Course Substitutions and Waivers**

All student requests that deviate from the degree curriculum requirements outlined in this Guidebook must be jointly approved by the Program Director and the Associate Dean of Education. For more information refer to section 3.4.

## **Application for Degree**

MPH students are required to complete the Application for Degree form online. There are strict deadline dates before a student can be cleared for graduation. You must submit the form by the end of the first business day of the month in which you want for degree conferred. The Application for Degree for professional degree programs is available online at:

<https://onestop.umn.edu/node/2111/attachment> Or at: [www.myu.umn.edu](http://www.myu.umn.edu): ACADEMICS> DEGREE PROGRESS> APPLY TO GRADUATE.

# 11. BIostatISTICS PHD DEGREE PROGRAM

## 11.1 BIostatISTICS PHD COMPETENCY STATEMENT

Biostatisticians are key collaborators in scientific research, providing expert advice on and direct involvement in study design, implementation, analysis, inference and communication. The Biostatistics program balances education in applied and theoretical biostatistics, mathematical statistics, and computing, all within the context of public health, medicine, and clinical translational research. Our PhD program is designed to prepare students for careers involving university or college teaching and research, independent biostatistical consulting, work for government agencies such as the National Institutes of Health, Food and Drug Administration, or the Centers for Disease Control and Prevention, or work for pharmaceutical or other companies that do research related to drug or device development for treatment of human illness. The objectives of the degree program are to prepare students for these career paths, with an emphasis on preparation to do research in statistical methods and applications to human studies.

<b>Biostatistics PhD Competencies</b>	Math 5615 Introduction to Analysis	PUBH 6250 Foundations in Public Health	PUBH 7450 Survival Analysis	PUBH 8401 Linear Models	PUBH 8403 Biostat Research Mentoring	PUBH 8412 Advanced Inference	PUBH 8432 Probability Models	PUBH 8442 Bayesian Decision Theory	PUBH 8888 Thesis Credit: Doctoral	STAT 8101 Theory of Statistics I	STAT 8102 Theory of Statistics II
Learn the fundamentals of statistical theory and methods	X		X	X		X	X	X		X	X
Work independently as a practicing biostatistician, on an equal basis as a collaborator with public health and medical researchers in designing, carrying out, and analyzing clinical trials, case control studies, and other experimental and observational studies.					X				X		
Conduct and publish original research, solely or collaboratively, on the theory and methodology of biostatistics.					X				X		
Develop a biological and public health perspective in research.		X									

## 11.2 REQUIREMENTS

### Coursework

The PhD program requires 7 core courses and 3 electives, a preliminary written examination, a preliminary oral examination, writing the dissertation, and defending the dissertation in a final oral examination.

Seven core biostatistics courses:

- PubH 8401 (Linear Models)
- PubH 8403 (Biostat Research Mentoring)
- PubH 8412 (Advanced Statistical Inference)
- PubH 8432 (Probability Models)
- PubH 8442 (Bayesian Decision Theory)
- STAT 8101-8102 (Theory of Statistics I and II)

9 credits of Biostatistics elective courses chosen from the following:

- PubH 7420 (Clinical Trials)
- PubH 7465 (Biostat Consulting)
- PubH 8422 (Modern Nonparametrics)
- PubH 8435 (Latent Variable Models)
- PubH 8445 (Statistics for Human Genetics)
- PubH 8446 (Advanced Statistical Genetics and Genomics)
- PubH 8452 (Advanced Longitudinal Data Analysis)
- PubH 8462 (Advanced Survival Analysis)
- PubH 8472 (Spatial Biostatistics)
- PubH 8475 (Statistical Learning and Data Mining)
- PubH 8482 (Sequential and Adaptive Methods for Clinical Trials)
- PubH 8485 (Methods for Causal Inference)
- PubH 8492 (Hierarchical and Richly Parameterized Linear Models)
- Other 8000 level biostatistics topics courses that is not included in the Core Curriculum
- 8000 level courses offered by the School of Statistics that is not included in the Core Curriculum

3 credits of a health science elective are required.

PubH 6250 (Foundations of Public Health) is required. 1 additional health science elective credit must be selected from PubH 6xxx, 7xxx, 8xxx, level courses offered by other divisions in the SPH or other Health Sciences programs. It is advised to select the health science elective in consultation with an RA or thesis advisor. To use a course outside of PubH or the Health Sciences, students must get approval from their advisor and the Director of Graduate Studies before registering for the course.

Survival Analysis (PubH 7450).

At least 24 thesis credits (PubH 8888) while writing the doctoral thesis. Students must pass their preliminary oral examination before they can begin registering for thesis credits, so this examination should be scheduled as early as possible. Students who delay their preliminary oral examination may be forced to delay their graduation by a semester to have time to fulfill the thesis credit requirement.

Students who are not native-speakers of English must demonstrate proficiency in spoken English, as described in section 7.7. It is best to complete this during the first semester.

All PhD program courses must be taken with the A/F grading option, except for courses only offered pass/fail (S/N).

## Sample Biostatistics PhD Course Schedules

Below are two sample Biostatistics PhD course schedules. The schedule a student takes will vary depending on their background when admitted to the Biostatistics PhD program. Students are encouraged to consult with their academic advisor and Program Director/Director of Graduate Studies to determine the most appropriate schedule.

**Schedule 1:** Students admitted to the University of Minnesota with an MS in Statistics or Biostatistics and who have taken courses in Survival Analysis and graduate level mathematical statistics (at the level of STAT 8101-8102) will typically follow the Biostatistics PhD course schedule outlined below.

### Fall Semester – Year One

Course	Title	Credits
PubH 8401	Linear Models	4
PubH 8403	Biostat Research Mentoring	1
PubH 8432	Probability Models	3

### Spring Semester – Year One

PubH 8412	Advanced Statistical Inference	3
PubH 8442	Bayesian Decision Theory	3
<b>Preliminary Written Exam to be taken in August. **</b>		

\*\* The written exam covers materials from the 4 Biostatistics courses (PubH 8401, 8412, 8432, 8442)

Additional courses satisfying the 3 biostatistics elective requirements, PubH 7450 and the Health Science electives are typically taken during the second or third year.

**Schedule 2** Students entering the PhD program without a master's degree in Statistics or Biostatistics typically take two years of courses before the PhD written exam. The standard course schedule for a student with this background is outlined below.

### Fall Semester – Year One

Course	Title	Credits
Math 5615H* or Math 4603*	Mathematical Analysis I	4
	Advanced Calculus I (strongly recommended for students without a previous course in Real Analysis)	3
PubH 7405	Biostatistics: Regression	4
Stat 8101	Theory of Statistics I	4

### Spring Semester – Year One for students entering the program with an undergraduate degree

PubH 7406	Advanced Regression and Design	4
Stat 8102	Theory of Statistics II	4
Varies	PubH (Health Sciences) elective	3

**Year 1 Masters Written Exam to be taken in May after Spring Semester finals\*\***

### Fall Semester – Year Two

Course	Title	Credits
PubH 8401	Linear Models	4
PubH 8403	Biostat Research Mentoring	1
PubH 8432	Probability Models	3

### Spring Semester – Year Two

PubH 8412	Advanced Statistical Inference	3
PubH 8442	Bayesian Decision Theory	3
Varies	Elective Course	1-4

**PhD Preliminary Written Exam to be taken in August. \*\*\***

### Fall Semester – Year Three

Course	Title	Credits
PubH 7450	Survival Analysis	
Varies	Elective Courses	1-4

### Spring Semester – Year Three

Varies	Elective Courses	1-4
Varies	Elective Courses	1-4

During Year 3 students typically complete the 3 biostatistics elective requirements.

\* Students that have not had a previous course in real analysis are required to take one semester of real analysis and are encouraged to take Math 4603 (Math 5615H would also be sufficient). Students that have had a previous course in real analysis are strongly encouraged to take Math 5615H but it is not required.

\*\* The year 1 written exam covers materials from the 4 Biostatistics masters level courses (PubH 7405, 7406, Stat 8101, 8102). Schedule 2 students are expected to take the exam at the end of their first year. Students who are expected to take the exam but do not, will be officially recorded as failing the written exam. Exemptions can only be granted by the academic advisor and the Program Director/Director of Graduate Studies, in consultation with the Division Head. To help students prepare, previous years' written exams and answer keys are available for review and photocopying in the Division office.

Students have two chances to pass the year 1 exam. If they do not pass the first time, they must take the exam one year later. A student who fails on the second try or does not take the exam will not be allowed to continue in the PhD program.

\*\*\* The PhD written exam covers materials from the four Biostatistics PhD courses (PubH 8401, 8412, 8432, 8442).

### Registration Requirement and Student Status

Full-time status is required to hold a graduate assistantship. PhD students must register for at least six credits each semester to be certified by the Office of the Registrar as a full time Graduate School student. PhD students may register for pre-thesis credits (PubH 8666) when they have completed all required courses but not yet passed their preliminary oral examination, and need to be registered as full-time students in the Graduate School.

Students should maintain active student status from the beginning of their program until they graduate. To maintain active student status, students must register every fall and spring semester. Students who have completed all required courses may register for Grad 0999, which is free, zero-credit, non-graded and fulfills the registration requirement.

Students who do not register for one semester lose their student status with the Graduate School. To regain student status, they must reapply (<http://www.sph.umn.edu/site/docs/isph/Change-of-Status-Request.pdf>).

## 11.3 TECHNICAL RESEARCH WRITING AND RESEARCH PRESENTATIONS

While not required within the Biostatistics PhD curriculum, PhD students are encouraged to consider taking a course or two in technical research writing and/or research presentations. Some course options include:

GRAD 8101	Teaching in Higher Education, 3 cr
Writ 5051	Research Writing Practice for Non-native Speakers, 3 cr
Writ 5052	Research Presentations and Conference Writing for Non-native speakers of English, 3 cr

In addition, the Preparing Future Faculty program may be of interest to students who are interested in an academic career. More information at <https://cei.umn.edu/preparing-future-faculty-program>.

## 11.4 MINOR FIELD

Minor field courses must be in a single field. The minor field must be declared before the student passes the preliminary oral examination and the Program Director/Director of Graduate Studies for the minor field must be consulted concerning the requirements early in the program of study and also must approve and sign the Graduate Planning and Audit System planner before it is submitted to the Graduate Student Services and Progress office. One committee member for the preliminary oral examination must be Graduate Faculty in the minor field.

## 11.5 PRELIMINARY WRITTEN PHD EXAMINATION

The preliminary written PhD examination is offered once each year in August. The exam covers these four core courses:

PubH 8401	Linear Models
PubH 8412	Advanced Statistical Inference
PubH 8432	Probability Models
PubH 8442	Bayesian Decision Theory

Students are expected to take the exam the first time it is given after the student completes these courses. Students who are expected to take the exam but do not, will be officially recorded as failing the written exam. Exemptions can only be granted by the academic advisor and the Program Director/Director of Graduate Studies, in consultation with the Division Head. To help students prepare, previous years' written exams and answer keys are available for photocopying from the Biostatistics office.

The exam is closed-book, four hours long, and consists of questions that may touch on several courses. Students are issued hand calculators for the exam and may not use their own calculator. Students' names are masked by assigning individual code letters when the test is given, and names remain masked when test papers are graded. The masking is removed when the faculty meets to discuss the test scores, and in addition to the exam results there is a broad assessment of the student's record and research potential. All these factors are weighed with the examination scores in deciding who passes the comprehensive written examination. Examination answers are available to students after the grading, but exam scores are not released.

When a student passes the exam, the Biostatistics division will record the Preliminary Written Examination results with the Graduate School.

Students have two chances to pass the exam. If they do not pass the first time, they must take the exam one year later. A student who fails on the second try or does not take the exam will not be allowed to continue in the PhD program.

## 11.6 SATISFACTORY PROGRESS IN THE PHD PROGRAM

The faculty expects that students will advance steadily towards graduation, which is called making "satisfactory progress." To make satisfactory progress in the PhD program, a student should:

- Register for program courses every fall and spring semester until course requirements are completed. Students with graduate assistantships must register for at least 6 credits to maintain their full-time status, or lose their assistantship. Students who have not passed their preliminary oral examination may register for Doctoral Pre-Thesis Credits (PubH 8666) for up to 2 semesters, if necessary, to fulfill this requirement.
- Maintain a GPA of at least 3.3 in the required PhD courses (listed on the Graduate Planning and Audit System planner), and make up all grades of I (incomplete) within one year.
- Perform at or above expectations (i.e. motivation/initiative, dependability, ability to work with others, quality of oral/written communication) in Graduate Assistantship/Fellowship appointments.
- Complete the required courses and the preliminary written examination according to the Schedule (1 or 2) under which the student was admitted.
  - For Schedule 1 students, this means completing the required preparatory coursework in the first year and taking the PhD written examination at the end of the first year. Students have two chances to pass the PhD written exam. If they do not pass the first time, they must take the exam the following year. A student who fails on the second try or does not take the exam will not be allowed to continue in the PhD program.
  - For Schedule 2 students, this means completing preparatory coursework during the first two years, taking the Masters/Year 1 written examination at the end of the first year, and taking the PhD written examination at the end of the second year. Students have two chances to pass each exam. If they do not pass an exam the first time, they must take it the following year. A student who fails either exam on the second try will not be allowed to continue in the PhD program.
- Take the preliminary oral examination within two years of completing the PhD written examination.
- After passing the preliminary oral examination, begin registering for thesis credits (PubH 8888) to fulfill the minimum of 24 credits.
- File a yearly Progress Report to be approved by the faculty. In the report, a student will indicate when they have taken or expect to take required courses and exams, and (once the written examination has been completed) their plans for starting/continuing/completing thesis or dissertation work, including expected graduation date. If a student has requested

and/or received any exemptions from any of the above requirements, these should also be recorded. Reports are due by May 31 each academic year. The faculty will review and discuss progress reports at the June faculty meeting. If a student progress report is not approved, the student will be asked to revise it in consultation with their academic advisor and the Program Director/Director of Graduate Studies. Students will receive a letter from their academic advisor assessing their progress, and explaining any unfulfilled requirements for satisfactory progress. Failure to file an approved progress report within 90 days of the progress report due date constitutes not making satisfactory progress.

A student failing to satisfy any of the above criteria could be deemed to not be making satisfactory progress in the PhD program.

If a student needs an exemption from these requirements, they must make a written request to both the student's academic advisor and the Program Director/DGS. The request must include a justification for requesting the exemption.

If the Division determines that a student is not making satisfactory progress, the faculty reserves the right to:

- Require the student to meet with their academic advisor and the Program Director/DGS, to discuss the requirements for continuing in the program.
- Revisit funding status for the coming school year.
- Vote to decide whether to dismiss student from the program.

## 11.7 GRADUATE PLANNING AND AUDIT SYSTEM (GPAS)

At the end of the second year of the PhD program, or at least 1 semester prior to their preliminary oral exam, students must submit their Graduate Planning and Audit System (GPAS) planner. This form collects all the required coursework for the PhD degree, both courses completed and those not yet taken.

## 11.8 PRELIMINARY ORAL EXAMINATION AND THE DISSERTATION

PhD students are expected to begin considering dissertation areas and advisors after passing the PhD preliminary written examination, and to have begun work on their dissertation in earnest by their third year. As the plan of the dissertation becomes definite, it forms the basis for the preliminary oral examination.

At least one month prior to the student's preliminary oral exam (and after the Graduate Planning and Audit System (GPAS) planner has been approved by the Graduate Student Services and Progress office), the student should notify the Graduate Student Services and Progress office of their committee members (<https://onestop.umn.edu/academics/examination-committees>). This online form collects committee member's names and their role on the committee. The preliminary oral examination committee consists of at least four faculty with graduate education responsibilities: three from Biostatistics (including the adviser), and one from outside Biostatistics. All committee members must be listed as a Faculty with Graduate Education Responsibilities with the Graduate School ([https://apps.asr.umn.edu/faculty\\_roles/](https://apps.asr.umn.edu/faculty_roles/)). The Preliminary Oral Exam Chair will be the student's dissertation advisor. This is in contrast to the Final Oral Examination Committee, where neither the advisor (nor co-advisor) can be the Chair.

For students declaring a minor, a faculty member from the minor department must be included on the committee. This person and will also fulfill the external member requirement.

Once the student obtains their thesis advisor's approval, they can schedule their preliminary oral exam. The preliminary oral examination is scheduled online with the Graduate Student Services and Progress as soon as the date is set, but no later than one week in advance (<https://onestop.umn.edu/academics/doctoral-oral-exam-scheduling>). Once the student has been cleared by the Office of the Registrar to take the exam, the student will receive an email with a link to initiate the Preliminary Oral Exam form workflow. Once completed, the committee chair will receive an email with a link to the final form. Upon passing the preliminary oral examination, the committee will sign the Preliminary Oral Examination Report form. This form must be submitted to the Graduate Student Services and Progress office no later than the working day after the exam to reflect doctoral candidacy.

Thesis proposal material should be submitted to committee members at least a week before the examination.

The format for the preliminary oral examination is usually an oral presentation of the student's thesis proposal to their examination committee. The presentation often summarizes completed work, work in preparation, and planned work: "what the student has already done, what they know they can do, and what they think they can do."

It is expected that a PhD thesis in Biostatistics will contain material of sufficient breadth, depth, and sophistication to yield at least two papers that are strong submissions to scholarly journals of quality comparable to the *Journal of the American Statistical Association*, *Biometrika*, *Journal of the Royal Statistical Society (Series B)*, *Biometrics*, *Statistics in Medicine*, *Bioinformatics*, *Genetic Epidemiology*, *Human Heredity*, *American Journal of Epidemiology*, *Journal of Clinical Epidemiology*, or *Statistical Science*. Thesis research often yields an additional submission to a journal in an area of substantive application.

Students wishing to see examples of completed dissertations can go to the following website:

<http://conservancy.umn.edu/handle/11299/45272>. The collection can be sorted by name, or one can browse the collection by dates, authors, titles, subjects and types. In addition, completed dissertations from previous students are in the Biostatistics Reading Room.

## Doctoral Dissertation Fellowship

There is a great advantage to scheduling the preliminary oral examination before January of a student's second or third year: students are eligible for a Graduate School Dissertation Fellowship, which provides support during one's final year to work on their thesis. Please see the Director of Graduate Studies for more information about this award or <https://grad.umn.edu/funding/current-students/apply-through-program/doctoral-dissertation-fellowship>.

## 11.9 FORMS, FINAL ORAL EXAMINATION, AND GRADUATING

The final oral examination is a 50-minute public seminar where the student presents their dissertation results, followed by a defense of the dissertation before the final oral exam committee.

There are several things that must be done after passing the preliminary oral examination, before a student can take the final oral examination and graduate. PhD students are required to submit numerous forms to the Graduate Student Services and Progress office to report details about their degree coursework, examining committee members, and to obtain approvals at each step. It is important to initiate the required forms far enough in advance to allow time for automated routing for approvals and allow for delays. The Graduate Student Services and Progress office will not allow students to defend the doctoral thesis until all required forms have been submitted and approved.

1. As stated above, upon passing the preliminary oral examination, the committee will sign the Preliminary Oral Examination Report form.
2. Begin registering for thesis credits (PubH 8888): 24 credits are required. Note that full financial support pays for only 14 credits per semester, so a student will need at least two semesters to get these credits unless the student pays for the credits over 14 out of pocket.
3. Another time constraint is that the final oral examination must be at least 15 weeks after the preliminary oral examination.
4. Register every spring and fall semester to maintain active student status while working on their thesis. If a student has completed all required credits including thesis credits (and does not hold a Graduate Assistantship), they may register for Grad 0999, which is free, zero-credit, non-graded and fulfills the registration requirement.
5. At least one semester prior to the student's final oral defense, the student must notify the Graduate Student Services and Progress office of their doctoral final exam committee members (<https://onestop.umn.edu/academics/examination-committees>). The final oral exam committee usually is the same as the preliminary oral exam committee. The student and advisor should discuss who should be the chair; the final oral exam chair cannot be the student's advisor or co-advisor. A minimum of four members are required: three from Biostatistics (including their adviser), and one from outside Biostatistics. All committee members must be listed as Faculty with Graduate Education Responsibilities with the Graduate School ([https://apps.asr.umn.edu/faculty\\_roles/](https://apps.asr.umn.edu/faculty_roles/)).
6. After notifying the Graduate Student Services and Progress office of the student's final oral defense committee, the graduation packet may be requested (<https://apps.grad.umn.edu/secure/gradpacket/>). The Graduation Packet contains all the forms and instructions needed to finish including: graduation instructions, the Thesis Reviewer's Report form link, and the process for completing the Application for Degree.
7. Once a date for the final oral examination has been arranged with the committee members, inform Megan Schlick ([adam0489@umn.edu](mailto:adam0489@umn.edu)) of the scheduled date and time. Megan will arrange a room for the presentation, as well as coordinate access to the online exit interview form. The exit interview is a way for graduating students to give comments on the Biostatistics program. Students may also schedule a meeting with the Division Head to discuss their experiences and provide feedback on the program, if desired.
8. Notify the Graduate Student Services and Progress office of the scheduled exam at least one week in advance via their online form (<https://onestop.umn.edu/academics/doctoral-oral-exam-scheduling>).
9. Finish thesis to their advisor's satisfaction.
10. The Graduate School awards degrees administratively every month. The earliest a doctoral student can graduate is at the end of the month of final oral examination. Before the first working day of the anticipated graduation month, complete the Application for Degree process via MyU (<https://onestop.umn.edu/academics/apply-graduate>).
11. Three or four weeks before the scheduled final oral examination, submit a copy of your thesis to the committee.
12. At least one week before the final oral defense student should initiate the Thesis Reviewer's Report via a link in their graduation packet. When the student submits the Reviewers' Report, each of their reviewers receives an email with a link to the form. All reviewers should respond to the form at least 3-4 days before the defense.
13. Once the Thesis Reviewer's Report is approved by the Graduate Student Services and Progress office, the student will be notified via email with a link to complete the Final Exam form workflow. Students should initiate the Final Exam form at least 1 day before their final defense.

14. After passing the final oral examination, the exam committee will electronically sign and submit the Final Oral Examination Report.
15. The dissertation must be submitted and approved by the Graduate Student Services and Progress office by the last working day of the anticipated month of completion. Consult Graduation Packet for formatting guidelines and procedure.
16. Submit an electronic copy of your thesis to the Biostatistics Reading Room.
17. Graduates are invited to attend a commencement ceremony; the School of Public Health holds commencement every May. (<https://www.sph.umn.edu/current/commencement/>)
18. Complete the required School of Public Health Career Survey at: [https://umn.qualtrics.com/jfe/form/SV\\_doRfMjgZueRCpNP](https://umn.qualtrics.com/jfe/form/SV_doRfMjgZueRCpNP).
19. Finally, the Biostatistics office will give all graduating student an Alumni Information form. Students are asked to fill out the contact information so we can keep in touch. Students should copy any files from their biostatistics network computer account, and return any Reading Room materials. Students must also return all University keys to the Biostatistics Division office.

For detailed explanations of the forms and requirements, please consult the steps toward graduation at ([https://assets.asr.umn.edu/files/gssp/otr204g\\_Doctoral\\_Philosophy\\_Education\\_GPAS.pdf](https://assets.asr.umn.edu/files/gssp/otr204g_Doctoral_Philosophy_Education_GPAS.pdf)).

## 12. BIOSTATISTICS MINOR DEGREE

### 12.1 BIOSTATISTICS MINOR DEGREE REQUIREMENTS

The Graduate Minor in Biostatistics is designed for students in non-biostatistics graduate degree programs at the University of Minnesota. The minor in Biostatistics is designed to familiarize students with the statistical tools necessary for analyzing health science data. By taking public health courses tailored specifically towards teaching fundamentals of statistical methodologies and programming techniques, students will develop an appreciation for tools that enable them to be involved in the design and analysis of quantitative studies as part of their future professional career or graduate study in an applied field.

All students completing a Biostatistics Minor must have a member of the Biostatistics faculty (<http://sph.umn.edu/faculty1/bio/>) on their final exam committee. Paperwork to complete the request for a minor can be found on the ONESTOP website at: (<https://onestop.umn.edu/add-or-remove-graduate-minor>). Even if a student is completing a degree that is not administered by the Graduate School, they still must complete the Graduate School form to request a minor.

A student requesting an exception to the minor degree requirements must contact the Biostatistics Director of Graduate Studies. If the DGS determines that graduate level coursework equivalent to one (or more) of the minor requirement(s) has been taken elsewhere, then the DGS may grant the student permission to substitute other (typically interpreted as more advanced) Biostatistics coursework in place of the coursework listed in the minor requirements. The student may not 'place out' of the Biostatistics coursework or transfer the equivalent coursework in from another institution. This policy holds for both the 'required' courses in the minor as well as the 'choose 2' (elective) courses in the minor, and for both the masters minor and the PhD minors.

**Questions?** Contact the Biostatistics Director of Graduate Studies ([bstdgs@umn.edu](mailto:bstdgs@umn.edu)).

### 12.2 COURSE OPTIONS

One course may be taken S/N and all other courses must be taken A/F.

#### Biostatistics Master's Degree Minor

##### Choose two courses from:

- PubH 7415, Introduction to Clinical Trials, 3 cr [PubH 6414 or PubH 6450 or one semester graduate-level introductory biostatistics or statistics]  
\*OR\*
- PubH 7420, Clinical Trials, 3 cr. [PubH 6451 or PubH 7406]
- PubH 7430, Statistical Methods for Correlated Data, 3 cr [PubH 6451 or PubH 7406 or STAT 5303 and SAS at the level of 6420]
- PubH 7435, Latent Variable Models, 3 cr [PubH 6451]
- PubH 7440, Introduction to Bayesian Data Analysis, 3 cr [STAT 5101-02 or PubH 7405-06]
- PubH 7445, Statistics in Genetics and Molecular Biology, 3cr [PubH 6451]
- PubH 7450, Survival Analysis, 3 cr [PubH 7406 and STAT 5102]
- PubH 7470, Statistics for Translational and Clinical Research, 3 cr [PubH 6450-51]
- PubH 7475, Statistical Learning and Data Mining, 3 cr [PubH 6451 or PubH 7406]
- PubH 7485, Methods for Causal Inference, 3 cr

## **Biostatistics PhD Minor, for non-statistics students**

### **Either these two courses:**

- PubH 7401, Fundamentals of Biostatistical Inference, 4 cr
- PubH 7402, Biostatistical Modeling and Methods, 4 cr [PubH 7401 (Fund. Biostat Inf.)]

### **Or these two courses:**

- PubH 7405, Biostatistics: Regression, 4 cr. [STAT 5101 or co-rec STAT 5101]
- PubH 7406, Advanced Regression and Design, 4 cr [PubH 7405 and STAT 5102 or co-rec STAT 5102]

### **Plus two courses from:**

- PubH 7415, Introduction to Clinical Trials, 3 cr [PubH 6414 or PubH 6450 or one semester graduate-level introductory biostatistics or statistics]  
\*OR\*  
PubH 7420, Clinical Trials, 3 cr. [PubH 6451 or PubH 7406]
- PubH 7430, Statistical Methods for Correlated Data, 3 cr [PubH 6451 or PubH 7406 or STAT 5303 and SAS at the level of 6420]
- PubH 7435, Latent Variable Models, 3 cr [PubH 6451]
- PubH 7440, Introduction to Bayesian Data Analysis, 3 cr [STAT 5101-02 or PubH 7405-06]
- PubH 7445, Statistics in Genetics and Molecular Biology, 3cr [PubH 6451]
- PubH 7450, Survival Analysis, 3 cr [PubH 7406 and STAT 5102 or STAT 8102]
- PubH 7470, Statistics for Translational and Clinical Research, 3 cr [PubH 6450-51]
- PubH 7475, Statistical Learning and Data Mining, 3 cr [PubH 6451 or PubH 7406]
- PubH 7485, Methods for Causal Inference, 3 cr

Students take the required set of two courses first, before taking their choice of two courses from the “Plus 2” list of eight.

## **For graduate students in statistics, the PhD minor requirements include:**

### **These two courses:**

- PubH 7420, Clinical Trials, 3 cr [PubH 6451 or PubH 7406]
- PubH 7450, Survival Analysis, 3 cr [PubH 7406 and STAT 5102]

### **Plus two courses from:**

- PubH 8422, Modern Non-parametrics, 3 cr [PubH 7406, STAT 5102]
- PubH 8442, Bayesian Decision Theory and Data Analysis, 3 cr [PubH 7460, STAT 5101, STAT 5102, STAT 8311]
- PubH 8452, Advanced Longitudinal Data Analysis, 3 cr [Stat 5101, STAT 8311 and SAS or R experience]
- PubH 8462, Advanced Survival Analysis, 3cr [PubH 7450, PubH 8432 and STAT 5102]
- PubH 8472, Spatial Biostatistics, 3 cr [STAT 5101, STAT 5102 and recommend Stat 8311, PubH 8442 or PubH 7440]
- PubH 8482, Sequential Clinical Trials, 3cr [PubH 7450, 8432, STAT 5102]
- PubH 8475, Statistical Learning and Data Mining, 3 cr [PubH 6451 or PubH 7406]
- PubH 8485, Methods for Causal Inference, 3 cr

# APPENDIX A

## MPH 22 Foundation Competencies Established and Required from the Council on Education for Public Health (CEPH) Effective Fall 2018

Note: The Foundations Competencies are met by completing the MPH core curriculum.

### **Evidence-based Approaches to Public Health**

1. Apply epidemiological methods to the breadth of settings and situations in public health practice
2. Select quantitative and qualitative data collection methods appropriate for a given public health context
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate
4. Interpret results of data analysis for public health research, policy or practice

### **Public Health & Health Care Systems**

5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels

### **Planning & Management to Promote Health**

7. Assess population needs, assets and capacities that affect communities' health
8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs
9. Design a population-based policy, program, project or intervention
10. Explain basic principles and tools of budget and resource management
11. Select methods to evaluate public health programs

### **Policy in Public Health**

12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes
14. Advocate for political, social or economic policies and programs that will improve health in diverse populations
15. Evaluate policies for their impact on public health and health equity

### **Leadership**

16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making
17. Apply negotiation and mediation skills to address organizational or community challenges

### **Communication**

18. Select communication strategies for different audiences and sectors
19. Communicate audience-appropriate public health content, both in writing and through oral presentation
20. Describe the importance of cultural competence in communicating public health content

### **Interprofessional Practice**

21. Perform effectively on interprofessional teams

### **Systems Thinking**

22. Apply systems thinking tools to a public health issue

## APPENDIX B

### Biostatistics Faculty with Graduate Education Responsibilities

The University of Minnesota faculty and researchers included in this section are eligible to serve as a biostatistics faculty member on master's and doctoral committees.

#### **Saonli Basu**

Professor of Biostatistics

M.S., 1998, Statistics, Indian Statistical Institute, Kolkata, India

Ph.D., 2005, Statistics, University of Washington

Saonli Basu's research interest includes statistical genetics, correlated data analysis and data mining. Currently Dr. Basu is working on modeling gene-environment interaction and analyzing high-dimensional genetic data to study association between genes and multiple traits in case-control or family studies. Her methodological research is supported by NIH/NIDA R21 and R01. She is a member of the Biostatistics and Bioinformatics Core of the Masonic Cancer Center. She is also involved in multiple research projects with the Division of Epidemiology & Community Health. Her collaborative work involves addressing statistical issues in family-based or cohort-based genome-wide association studies.

#### **Ann M. Brearley**

Assistant Professor of Biostatistics

MPH Program Director

Ph.D., 1986, Chemistry, University of Minnesota

M.S., 2008, Biostatistics, University of Minnesota

Ann Brearley divides her time between collaborative research and teaching. She is a member of the Biostatistical Design and Analysis Center (BDAC) of the Clinical and Translational Science Institute (CTSI) where her collaborative research interests include the design, monitoring and analysis of clinical trials, particularly medical research aimed at helping people in low and middle income countries (LMIC), evidence-based medicine, and meta-analysis. Ann develops and/or teaches in-person and online courses in introductory biostatistics, biostatistical literacy, clinical trials, and consulting. Her current teaching interests include biostatistical literacy, active learning, online learning, project-based learning, use of 'The Islands' in teaching, methods for teaching consulting skills, methods for training future teachers, collaborative teaching, and evaluation. She received the Charles N. Hewitt Creative Teaching Award from the University of Minnesota, School of Public Health in 2014.

#### **Haitao Chu**

Professor of Biostatistics

M.D., 1995, Preventive Medicine, West China University of Medical Sciences

M.S., 2002, Biostatistics, Emory University

Ph.D., 2003, Biostatistics, Emory University

Haitao Chu's research interests include: evidence-based medicine; meta-analysis; precision medicine; epidemiology methods; latent class models; statistical methods for mismeasured, missing, and correlated data; statistical methods for survival and longitudinal data; statistical methods for observational studies and randomized clinical trials; and applied Bayesian methods. His application research interests focus on infectious diseases, cancer, cardiovascular disease and injury prevention.

**John E. Connett**

Professor of Biostatistics

A.M., 1964, Mathematics, University of Missouri

Ph.D., 1969, Mathematics, University of Maryland

John Connett has research interests in clinical trials in lung disease, ophthalmology and cardiovascular disease, case-control studies, estimation of odds ratio, random effects and longitudinal models, coefficient-of-variation models for laboratory data, variance estimation, and statistical computing. He is currently PI for the Statistical and Data Coordinating Center for two ongoing multicenter clinical trials in lung disease and for a clinical trial of strategies to treat cardiac arrest patients, co-PI for two clinical trials of losartan as a treatment for COVID-19, and Director of the Biostatistics, Epidemiology and Research Design center in the Clinical and Translational Science Institute.

**Mariza de Andrade**

Adjunct Professor

Mayo Clinic Cancer Center

Professor of Biostatistics

Mayo Clinic College of Medicine

M.Sc., 1978, Statistics, Institute of Pure and Applied Mathematics, Rio de Janeiro, Brazil

M.Sc., 1988, Biostatistics, University of Washington, Seattle, WA

Ph.D., 1990, Biostatistics, University of Washington, Seattle, WA

Mariza de Andrade's research interests include admixture mapping, and methods for diagnostic, longitudinal and multivariate traits for linkage analysis of quantitative phenotypes using variance components approach, and extending these methods for association studies using family and population-based data. Mariza is also involved in a wide range of genome-wide association studies using family and case-control designs for complex disorders from various networks: Genes. Environment Association. Studies (GENEVA), Cohorts for Heart & Aging Research in Genomic Epidemiology (CHARGE), Electronic Medical Records & Genomics (eMERGE), Genetic Epidemiology Network of Atherosclerosis (GENOA), and Genetic Epidemiology of Lung Cancer Consortium (GELCC). She is an active collaborator with various investigators at Mayo Clinic, the Universities of Michigan and Cincinnati, MD Anderson Cancer Center in Houston, TX, and University of Sao Paulo, Sao Paulo, Brazil.

**Sue Duval**

Associate Professor of Medicine and Biostatistics

Ph.D., 1999, Biostatistics, University of Colorado Health Sciences Center

Sue Duval's research interests include: statistical methods in epidemiology, meta-analysis methods and their applications, publication bias, evidence-based healthcare, systematic review methods, resuscitation medicine, peripheral artery disease and cardiovascular disease epidemiology.

**Anne Eaton**

Assistant Professor of Biostatistics

M.S., 2010, Biostatistics, University of Minnesota

Ph.D., 2005, Biostatistics, University of Minnesota

Anne Eaton's research interests include survival analysis, multistate models, non-parametric methods, and estimation under complex censoring or observation processes. She is also interested in clinical trial design and analysis, dose-finding trials in oncology, and statistical methods for adaptive cancer screening and monitoring. She is a member of the Biostatistics Core of the Masonic Cancer Center.

**Lynn E. Eberly**

Professor of Biostatistics  
SPH Associate Dean for Faculty Affairs

M.S., 1994, Statistics, Cornell University  
Ph.D., 1997, Statistics, Cornell University

Lynn Eberly's current research interests involve methods and applications for multi-modal medical imaging data, such as MRI, diffusion MRI, functional MRI, and MR spectroscopy, any of which may involve clustered, longitudinal, and functional data. She has particular interest in the areas of neurology/neuroscience, psychiatry/psychology, and endocrinology. Lynn is a collaborator on many projects related to imaging in these areas. She teaches introductory clinical trials for students, professionals, and researchers in the allied health sciences and research skills for Biostatistics doctoral students. She was given the Leonard M. Schuman Award for Excellence in Teaching in the School of Public Health in 2002. She is a Fellow of the American Statistical Association and was the inaugural winner of the Biostatistician Mentor of the Year Award in 2016, given by the University's Clinical and Translational Science Institute. Lynn is a member of the inaugural team to be inducted into the University's Academy of Excellence in Team Science, in 2019, for the team's longstanding and impactful research in type I diabetes.

**Mark Fiecas**

Assistant Professor of Biostatistics

Ph.D., 2012, Biostatistics, Brown University

Mark's methodological research interests include time series analysis, spatio-temporal models, and estimating high-dimensional parameters. He is also interested in neuroimaging studies and imaging genetics.

**Birgit Grund**

Associate Professor of Statistics

M.S., 1982, Math/Statistics, Humboldt-Universität (Berlin)  
Ph.D., 1987, Math/Statistics, Humboldt-Universität (Berlin)

Birgit Grund has research interests in the design, conduct and analysis of clinical trials, with applications in AIDS research, Ebola vaccine trials, and COVID-19.

**Weihua Guan**

Associate Professor of Biostatistics

M.S., 2001, Statistics, Texas A&M University  
Ph.D., 2010, Biostatistics, University of Michigan

Weihua Guan has research interests in statistical genetics, and identification of genes involved in complex diseases and traits, with special interests on developing statistical and analytical methods for the genetic and epigenetic data using new high-throughput technologies.

**Tim Hanson**

Affiliate Professor of Biostatistics

M.A. Mathematics, 1996, University of New Mexico.  
Ph.D. Statistics, 2000, University of California, Davis.

Tim Hanson's methodological research includes covariate-dependent Bayesian nonparametric density estimation, spatiotemporal survival analysis, diagnostic screening without a gold standard & ROC models, dependence modeling via copulas, semiparametric mixed models, models incorporating moment constraints, and hierarchical mixture models. Tim is strongly motivated by real problems and data.

**Erika Helgeson**

Assistant Professor of Biostatistics

Ph.D., 2017, Biostatistics, University of North Carolina

Erika Helgeson's methodological research interests include statistical machine learning and nonparametric methods for complex, high-dimensional data. Her current work is in the development of novel methods to identify and validate clusters in high-dimensional low-sample size data sets. Her applied research interests include transplantation and chronic pain conditions, specifically temporomandibular disorders and canine osteoarthritis.

**James S. Hodges**

Professor of Biostatistics

M.A., 1986, Public Affairs, University of Minnesota

Ph.D., 1985, Statistics, University of Minnesota

Jim has collaborated with researchers in many areas of health care including endocrinology, dentistry, neurology, infectious diseases, cardiovascular diseases, psychology/psychiatry, cancer, rheumatology, nephrology, and gastroenterology as well as researchers in sociology, demography, marketing, wildlife management, ornithology, horticulture, combat analysis, military logistics, simulation models, and airport safety. His statistical research is in hierarchical and other richly-parameterized models.

**Jared Huling**

Assistant Professor of Biostatistics

Ph.D., 2017, Statistics, University of Wisconsin-Madison

Jared Huling's research interests focus on the development of precision medicine, causal inference, and statistical learning methodology for the analysis of complex observational studies. He is particularly interested in addressing various forms of population heterogeneity with the aim of improving patient health outcomes. His work in this area has involved applications in health system risk modeling and in personalizing health system intervention enrollment decisions through use of Electronic Medical Records.

**Katherine Huppler Hullsiek**

Senior Research Associate, Biostatistics

M.S., 1989, Mathematics, St. Cloud State University

M.S., 1996, Biostatistics, University of Minnesota

Ph.D., 1999, Biostatistics, University of Minnesota

Kathy Huppler Hullsiek has research interests in the design, conduct and analysis of clinical trials and cohort data related to co-infection with HIV and cryptococcal or TB meningitis. She is the statistician for several studies in Uganda, South Africa and Indonesia that evaluate treatment strategies for those with cryptococcal or TB meningitis and screening strategies for those at risk for cryptococcal meningitis.

**Joseph Koopmeiners**

Professor of Biostatistics

Division Head

M.S., 2004, Biostatistics, University of Minnesota

Ph.D., 2009, Biostatistics, University of Washington

Joe Koopmeiners's research interests include Bayesian adaptive methods for clinical trial, causal inference and the development of novel imaging biomarkers for cancer detection and prognosis. Dr. Koopmeiners is also a member of the Biostatistics and Bioinformatics Core of the University of Minnesota Masonic Cancer Center. Dr. Koopmeiners' statistical methods research is strongly motivated by his collaborative research in the cancer research, which are currently focused on the areas of tobacco regulatory science and the development of imaging technology as a diagnostic tool for prostate cancer.

**Chap T. Le**

Distinguished Professor of Biostatistics  
Director of Biostatistics Masonic Cancer Center - University of Minnesota

M.A., 1971, Mathematics, California State University - Fresno  
Ph.D., 1978, Statistics, University of New Mexico

Dr. Le teaches PubH 7405 (Biostatistics Regression) and PubH 7470 (Study Designs in Biomedical Research), both in the fall semesters and short course, PubH 6432 (Selected Topics in Clinical and Translational Research) in the summer. His collaboration has focused on analyses of survival and categorical data from clinical and translational research projects. His methodological research interests include epidemiological methods, crossover designs, survival analysis, logistic regression, correlated binary data, ordered alternatives, ROC curves, the design and analysis of in vitro experiments for studying cancer drugs (chemo combination therapies) and, recently, personalized medicine, ROC curve as applied to survival analysis, ROC curve as applied to propensity scores.

Dr. Le is the author of many research articles and several textbooks: Fundamentals of Biostatistical Inference (1992), Health and Numbers (1995, 2001, and 2010), Applied Survival Analysis (1997), Applied Categorical Data Analysis (1998), Introductory Biostatistics (2003, 2016 – Second Edition with Lynn Eberly), and Statistics Quick Reference Guide (2007), Categorical Data and Translational Research (2010).

**Eric Lock**

Associate Professor of Biostatistics

Ph.D., 2012, Statistics, University of North Carolina

Eric's research concerns the analysis of high-dimensional and complex data, with a focus on applications in genomics and molecular biology. His particular interests include the integration of multi-source data, tensor methods for multi-way data, exploratory factorization and clustering methods, and Bayesian nonparametric inference.

**Xianghua Luo**

Professor of Biostatistics

M.S., 2000, Quaternary Geology, Peking University  
Ph.D., 2005, Biostatistics, Johns Hopkins University

Xianghua Luo's research interests include methods and applications for recurrent event data, survival data, and longitudinal data; design and analysis of clinical trials. Collaborations include cancer research, blood and marrow transplantation (BMT), tobacco use and smoking cessation. Dr. Luo is a member of the Biostatistics Core of the Masonic Cancer Center.

**Theodore Lystig**

Adjunct Assistant Professor of Biostatistics  
Senior Director, Corporate Biostatistics, Medtronic

M.S., 1998, Biostatistics, University of Washington  
Ph.D., 2001, Biostatistics, University of Washington

Ted Lystig's research interests include design and analysis of clinical trials for medical devices, active surveillance, signal detection, evidence synthesis, multiple testing, statistical genetics, goodness of fit for longitudinal data, and hidden Markov models.

**Richard F. MacLehose**

Associate Professor of Epidemiology and Community Health

Ph.D., 2005, Epidemiology, University of North Carolina at Chapel Hill

Dr. MacLehose is an epidemiologic methodologist. He collaborates on a range of applied research ranging from cardiovascular to cancer epidemiology. His methodological research focuses uses Bayesian methods and focuses on development of methods for quantitative bias analysis in epidemiologic research.

**Sumithra Mandrekar**

Adjunct Professor  
Professor of Biostatistics - College of Medicine, Mayo Clinic

Ph.D., 2002, Interdisciplinary - Statistics, Psychology, Internal Medicine and Biomedical Engineering, The Ohio State University

Dr. Mandrekar is Professor of Biostatistics and Oncology at Mayo Clinic, Rochester MN; and is the Section Head for the Cancer Center Statistics at the Mayo Clinic and Group Statistician for the Alliance for Clinical Trials in Oncology. Her primary research interests include designs for predictive biomarker validation both in the initial and definitive setting, novel trial designs for dose-finding trials, and general clinical trial methodology related to identification of alternative Phase II cancer clinical trial endpoints. Her collaborative research areas include lung cancer and leukemia clinical trials, as well as early phase trials in cancer chemoprevention.

**Edward McFowland III**

Assistant Professor of Information and Decision Sciences – Carlson School of Management

Ph.D., 2015, Information Systems and Management, Carnegie Mellon University

Edward's interests include the development of computationally efficient algorithms for large-scale statistical machine learning and hypothesis testing. More specifically, his research seeks to structure and solve problems of causal inference, hypothesis generation, and model validation as the tasks of anomalous pattern detection and discovery. As a data and computational social scientist, Edward's broad research goal is bridging the gap between machine learning, statistics, and the social sciences, both through the application of statistical machine learning methods to social science problems and through the integration of statistical machine learning and econometric methodologies.

**Andy Mugglin**

Research Associate Professor of Biostatistics

Ph.D., 1999, Biostatistics, University of Minnesota

Andy Mugglin's research interests include clinical trials, Bayesian, adaptive, and other innovative clinical trial designs; Bayesian hierarchical modeling, spatio-temporal modeling, and computing. He also consults extensively in clinical study design for the medical device and pharmaceutical industries and serves on Data Monitoring Committees for various ongoing clinical trials.

**Thomas Murray**

Assistant Professor of Biostatistics

M.S., 2011, Biostatistics, University of Minnesota  
Ph.D., 2014, Biostatistics, University of Minnesota

Thomas Murray's methodological research primarily involves the design of Bayesian adaptive clinical trials with an emphasis on precision medicine and analysis methods for evaluating dynamic treatment regimes or sequentially adaptive individualized treatment rules. His applied areas of interest include cancer, cardiovascular disease, end-stage renal disease, neurological disorders, and child language disorders.

**James D. Neaton**

Professor of Biostatistics

M.S., 1970, Biometry, University of Minnesota  
Ph.D., 1984, Biometry, University of Minnesota

Jim Neaton's research interests are in the design and conduct of clinical trials. He currently is the leader of a large international clinical trials network called INSIGHT that is studying treatments for HIV and other infectious diseases. He is also actively involved in trials for the prevention and treatment of Ebola virus disease in West Africa. He serves on data monitoring committees for studies sponsored by the National Institutes of Health and the pharmaceutical and device industry. He is a past member of the Cardiovascular and Renal Advisory Committee and Endocrinologic and Metabolic Drugs Advisory Committee of the Food and Drug Administration. He is Fellow of the American Statistical Association and the Society for Clinical Trials. Dr. Neaton also is an Adjunct Professor of Medicine and holds the title Distinguished International Professor as a result of receiving the University of Minnesota Global Engagement Award. He is a member of the Academic Health Center Academy for Excellence in Health Research. He directs a T32 program for doctoral students who are interested in clinical trials in heart, lung, and blood disease.

**David Nelson**

Adjunct Assistant Professor  
Associate Professor of Medicine  
Senior Statistician, Center for Chronic Disease Outcomes Research  
Minneapolis VA Medical Center

M.S., 1994, Statistics, University of Minnesota  
Ph.D., 1998, Statistics, University of Minnesota

David Nelson is developing methods for inference in observational studies and model diagnostics using sufficiency and propensity theory. He also is interested in stepwise Bayes methods for finite population sampling and nonparametric statistical analysis.

**Wei Pan**

Professor of Biostatistics

M.S., 1995, Statistics, University of Wisconsin, Madison  
Ph.D., 1997, Statistics, University of Wisconsin, Madison

Wei Pan has research interests in statistical genomics and genetics, neuroimaging data analysis, machine learning and data mining. He has taught courses on survival analysis, categorical data analysis, linear models and generalized linear models, microarray data analysis, statistical learning and data mining.

**Ashley Petersen**

Assistant Professor of Biostatistics

Ph.D., 2016, Biostatistics, University of Washington

Ashley Petersen's research focuses on developing methods in the area of statistical learning. In particular, her interest is in building flexible and interpretable data-adaptive models that are useful in modern settings with large numbers of covariates. Additionally, she develops methods for the analysis of calcium imaging data. She is a member of the Biostatistics and Bioinformatics Core of the Masonic Cancer Center, where she collaborates with investigators on a range of applications, including research on tobacco use and health disparities.

**Cavan Reilly**

Professor of Biostatistics

M.A., 1995, Economics, New School for Social Research  
M.A., 1996, Statistics, Columbia University  
Ph.D., 2000, Statistics, Columbia University

Cavan Reilly has research interests in a variety of areas including clinical trials and in the clinical application of high dimensional biological assays. He primarily works on problems in infectious diseases including Ebola virus disease and HIV/AIDS.

**Kyle Rudser**

Associate Professor of Biostatistics

M.S., 2005, Biostatistics, University of Washington  
Ph.D., 2007, Biostatistics, University of Washington

Kyle Rudser's research interests include the design, monitoring, and analysis of clinical trials, survival analysis, longitudinal analysis, and nonparametric approaches. He is a member of the Biostatistical Design and Analysis Center (BDAC), a group that is part of the Clinical and Translational Science Institute (CTSI), which is involved in a wide variety of collaborative projects with investigators throughout the Schools of Medicine, Nursing, Dentistry, and Public Health and Colleges of Pharmacy and Veterinary Medicine. He also leads the scientific and data coordinating center for a research consortium regarding the prevention of lower urinary tract symptoms.

**Sandra Safo**

Assistant Professor of Biostatistics

Ph.D., 2014, Statistics, University of Georgia

Sandra Safo is interested in developing supervised and unsupervised statistical learning methods for data integration, classification, clustering, and prediction with applications to complications of HIV-infection and other complex diseases.

**David Vock**

Associate Professor of Biostatistics

McKnight Presidential Fellow

M.Stat., 2009, Statistics, North Carolina State University

Ph.D., 2012, Statistics, North Carolina State University

David develops methods for in causal inference — a set of statistical tools used to determine the effect of an intervention from observational data – and dynamic treatment regimes, which are used to evaluate and advance personalized treatment strategies. Much of his methodological work has been motivated by applications in organ transplantation, regulatory tobacco science, and oncology.

**Julian Wolfson**

Associate Professor of Biostatistics

Director of Graduate Studies

Ph.D., 2009, Biostatistics, University of Washington

Julian's research interests include causal inference and statistical machine learning for complex data. He applies causal inference methods to understand the biological pathways underlying treatment and discover surrogate endpoints. Julian develops statistical machine learning tools for making predictions from complex datasets, including large-scale electronic health record data and sensor data from mobile devices. Julian also a consulting statistician for several ongoing clinical trials.

**Baolin Wu**

Professor of Biostatistics

Ph.D., 2004, Biostatistics, Yale University

Baolin Wu's research is centered on developing novel statistical and computational tools to help solve scientific problems in biomedical research, with particular interest in computational biology and statistical genetics.

**Tianzhong Yang**

Assistant Professor of Biostatistics

M.P.H, 2012, Biostatistics and Epidemiology, Boston University

Ph.D., 2018, Biostatistics, University of Texas Health Science Center at Houston

Tianzhong's research interest lies in genetic epidemiology and statistical genetics. She has been working on methodology development related to gene-by-environment interaction analysis, high-dimensional mediation analysis, Mendelian Randomization, and integrative analysis of omics data. She is also a member of the Childhood Cancer Genomics Group, where she collaborates to study pediatric cancer etiology and outcome.

**Lin Zhang**

Assistant Professor of Biostatistics

M.S., 2007, Biology, Texas A&M University

Ph.D., 2012, Statistics, Texas A&M University

Lin's primary research interest is methodology development to solve important scientific problems involving complex correlated high-dimensional data using unified Bayesian models and sparsity priors. Her research broadly covers various statistical fields, including variable selection, Bayesian GWAS analysis, graphical modeling, spatial modeling, and functional data analysis with applications to genomics and imaging data.

