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I) INTRODUCTION TO THE DEPARTMENT

The Department of Statistics and Data Science at Northwestern University offers three graduate degrees—the Doctor of Philosophy in Statistics and Data Science, the Master's in Statistics and Data Science, and the Ad Hoc Master's in Applied Statistics. The doctoral and master's programs in statistics and data science are designed to provide students with comprehensive training in statistical/data science theory, methodology, and the application of methods to problems in a wide range of fields. The programs are flexible and may be arranged to reflect students' interests and career goals. Cross-disciplinary study is encouraged. The PhD program prepares students for careers as university teachers and researchers and as researchers in industry, government and the non-profit sector. Students in the doctoral program may earn a Master's degree en route to the PhD. The Master's degree program is designed to prepare students for both professional work and for further PhD study in statistics, data science, or another quantitative field. In addition to the stand-alone MS program, the department has a combined Bachelor's/Master's program, that provides exceptionally strong, motivated Northwestern undergraduates with the opportunity to earn a BA or BS plus a MS in Statistics and Data Science in a continuous five years. Master's students may opt to write a thesis, but it is not required for the MS degree. The Ad Hoc Master's degree program in Applied Statistics is available only to students in doctoral programs in other departments at the University.

The department is distinguished by the faculty's strong interests in statistical theory and data science, and the application of these areas to diverse fields such as machine learning, public policy, law, medicine and life sciences, and social sciences. Interest in cross-disciplinary work has always been strong – when the department was formed in the 1980s, all of the founding members had appointments in other departments, which included management, engineering, mathematics, education and social policy, sociology, and psychology. The graduate programs offer substantial training in applications and methodology, as well as current advances in statistics/data science theory and computation. Additional information about the Department can be found on our website: http://www.statistics.northwestern.edu/.

II) REQUIREMENTS FOR THE PHD DEGREE

The Graduate School has general requirements for graduate students at NU, which can be found at http://www.tgs.northwestern.edu/academics/degree-requirements/index.html. All students are required to fulfill the Department requirements in addition to those specified by The Graduate School.

A. Coursework required for MS degree en route to the PhD degree

Students admitted to the PhD program can obtain an optional Master of Science (MS) degree en route. The MS degree requires 12 courses.

For students admitted in 2022 or later, required courses include STAT 350 (Regression Analysis), STAT 353 (Advanced Regression), STAT 415 (Introduction to Machine Learning), and STAT 420-1, STAT 420-2, STAT 420-3 (Introduction to Statistical Theory and Methodology I, II, III). The remaining courses should be chosen from other 300 and 400 graduate level courses in Statistics, excluding STAT 301, STAT 303, STAT 320, STAT 330, and STAT 357, and should include at least two 400 level courses. At most, only one of STAT 302, STAT 304, and STAT 305 can be used to fulfill this requirement.

For students admitted in 2021, required courses include STAT 350 (Regression Analysis), STAT 353 (Advanced Regression), STAT 420-1, STAT 420-2, STAT 420-3 (Introduction to Statistical Theory and Methodology I, II, III), and STAT 435 (Mathematical Foundations of Machine Learning). The remaining courses should be chosen from other 300 and 400 graduate level courses in Statistics, excluding STAT 301, STAT 303, STAT 320, STAT 330, and STAT 357, and should include at least two 400 level courses.

For students admitted prior to 2021, required courses include STAT 350 (Regression Analysis), STAT 351 (Design and Analysis of Experiments), STAT 420-1, STAT 420-2, STAT 420-3 (Introduction to Statistical Theory and Methodology I, II, III), and STAT 425 (Sampling Theory and Applications). The remaining courses should be chosen from other 300 and 400 graduate level courses in Statistics, excluding STAT 301, STAT 303, STAT 320, and STAT 330, and should include at least two 400 level courses.

Approved courses in other departments may also be taken; however, no more than 3 non-STAT courses may be used to fulfill the degree requirements. Independent Study registrations cannot be used to fulfill the coursework requirements. For particularly well-qualified students, the course requirements may be reduced by as many as 3 courses.

B. Additional coursework for PhD students

PhD students admitted in 2021 or later are required to take STAT 344 (Statistical Computing), STAT 457 (Applied Bayesian Inference), and two additional 400 level elective courses in Statistics. These can be used to satisfy the 12 course requirement for the MS described above. In addition to the 12 courses listed above, PhD students must take STAT 430-1, STAT 430-2 (Probability for Statistical Inference I, II), and STAT 440 (Applied Stochastic Processes for Statistics).

For students admitted prior to 2021, in addition to the 12 courses listed above, PhD students must take either MATH 450-1, 2 (Probability Theory and Stochastic Analysis I, II) or MATH 450-1 (Probability Theory and Stochastic Analysis I) and IE/MS 460-1, 2 (Stochastic Processes I, II).

All PhD students are also required to take STAT 519 (Responsible Conduct of Research Training), typically in their second year of the program. Students generally complete all required coursework in the first two years. Unless otherwise specified by the University or department, students should take all required courses for a letter grade (i.e., not Pass/Fail).

C. Language requirement

All new PhD students whose primary language is not English must fulfill The Graduate School's English proficiency requirement during their first year of study. Students who fail to meet this requirement by the end of their first year of study are not eligible to be teaching assistants, and thus **will not be financially supported by the Department starting in the second year of PhD study**. Details on fulfilling this requirement can be found at https://www.tgs.northwestern.edu/academic-policies-procedures/policies/teaching.html.

The English Language Programs provide language support for international students and scholars; see http://www.elp.northwestern.edu.

D. Full-time status

To be full-time, a student must register for no fewer than three courses (and no more than four) authorized for graduate credit per quarter. Students may register for STAT 590 (Research) to maintain full-time registration during summer quarter when they are not enrolled in graded coursework. Note that full-time status is required in order to receive financial support of any kind or to maintain a valid visa status (e.g. F-1, if it applies). Once a PhD student has passed the prospectus, they may opt to register for TGS 500 to maintain full-time status.

E. Course registration and summer

All students register for classes online through CAESAR. Registration dates are posted on the Office of the Registrar's Website for each quarter. New graduate student registration typically starts in the last week of summer before the new quarter starts. It is the student's responsibility to comply with all deadlines to complete registration each quarter. In the case that a student has difficulty registering, they may contact Student Services via e-mail. For courses that require permission, students should contact the department that offers the course to obtain a permission number.

Summer registration

It is Statistics and Data Science Department policy that a full-time PhD student must complete eight quarters of residency consecutively over the first two years, including summers. Summer registration is required for all PhD

Students in their first and second years of study, to meet this residency requirement. Students in their third year or beyond are required to register in the summer if they receive funding support from the University.

Approval of course registration

In addition to the required courses, the Department encourages students to take non-STAT courses that are related to their dissertation research. Students are required to consult with their academic advisor or dissertation advisor to obtain approval for course registration each quarter. The DGS also reviews student schedules and has the ultimate authority to approve or disapprove a proposed course schedule. Taking non-STAT courses without approval from the Department may result in termination of financial support. Additional rules are given in TGS guidelines.

F. New student orientation

Every September, The Graduate School hosts a New Student Orientation. All new Statistics and Data Science PhD students are strongly encouraged to participate. There is also a Department orientation, with information sessions on the Statistics and Data Science PhD program and statistics/data science review sessions to help the students prepare for the first-year courses. All new students are required to attend the Department orientation.

G. Advisor and thesis committee

Upon arrival at the Department, each new PhD student will be assigned a temporary academic advisor. The temporary advisor will provide the new student with advice on course registration and other issues **before the student selects their dissertation advisor.**

Students should begin to think about selection of their dissertation advisor starting in the later quarters of the first year. The dissertation advisor should be a faculty member or formally affiliated member of the Department of Statistics and Data Science. Students are encouraged to learn about the expertise of faculty members from the faculty members' personal webpages, from conversations with more senior students, by attending faculty talks, and by taking independent study courses (STAT 499). It is not uncommon for a student to take multiple independent study courses with different faculty members before they make a decision about whom to work with as an advisor for their dissertation. It is expected that each student will have selected a dissertation advisor by the end of the second year.

The thesis committee should consist of at least three faculty members. Of these three or more faculty members, at least two (including the chair) should be faculty members in Statistics and Data Science or formally affiliated with Statistics and Data Science. In addition to the primary advisor, one committee member could also serve as co-advisor. Students often find it beneficial to include committee member(s) from outside the Department, whose expertise is related to the dissertation research. The thesis committee must be formed before the prospectus examination.

H. Milestones and timeline

The Department has specific requirements for milestones and their timeline, some of which are different from the general guidelines provided by TGS for PhD students.

1. Qualifying exam (beginning of second year)

All PhD students must pass a comprehensive exam, also termed the qualifying exam, (at the PhD level) in the beginning of the second year of PhD study. The PhD qualifying exam contains two parts, an in-class exam based on STAT 420-1-2-3 and a take-home part, based on STAT 350, 353, and 415, that requires students to complete a data analysis project within a specified time frame and to make a presentation. Students who fail to pass the PhD qualifying exam at the beginning of their second year will be given the option to complete a qualifying paper, no later than the end of Spring quarter of the second year. For the qualifying paper, a student will need to find a graduate faculty mentor (change of mentor is allowed midway if the student desires) and work with them to write a

paper on one or more published statistics articles. The qualifying paper should demonstrate the student's ability to apply their knowledge of statistical theory and computation to a problem of statistical methodology. The Department will evaluate the qualifying paper and decide whether the student has passed the qualification. A student who passes the qualifying paper will proceed to PhD candidacy, otherwise they will be asked leave the PhD program.

2. Prospectus (by the end of third year)

The prospectus is the dissertation proposal, which should include a detailed literature review, preliminary results, and a well-thought-out research plan. The prospectus must be approved by a faculty committee comprised of a committee chair and a minimum of 2 other faculty members. The student should submit a written proposal at least two weeks before the exam. For the exam, the student should give a presentation and answer questions from the committee. In addition, the student should submit the PhD Prospectus form via the *TGS Forms* tab in GSTS. The DGS must approve this form online before The Graduate School enters final approval. Students are notified via email by The Graduate School of approval of the prospectus.

The Department requires that students complete their Prospectus before the end of year 3, which is earlier than The Graduate School deadline of the end of year 4 (see http://www.tgs.northwestern.edu/about/policies/phd-degree-requirements.html). And **students who begin the PhD program already having passed the PhD qualifying exam are required to complete the prospectus before the end of their second year in the PhD program**. Students may apply for extension of prospectus; however an extension is only granted to students who cannot complete it before the deadline but have demonstrated good progress towards the prospectus. In all circumstances, the prospectus must be completed by the end of the fourth year. **Failure to comply with this deadline will result in exclusion from the PhD program**. Students are responsible for notifying the DGS when they pass their prospectus.

3. PhD Dissertation (typically year 5)

The dissertation must demonstrate an original contribution to a chosen area of specialization. A final examination Thesis Defense is given based on the dissertation. Department faculty and graduate students should be invited to the Thesis Defense presentation, which typically lasts around 50 minutes. The student should work with department administrators to reserve a room for the presentation and ensure faculty and other students are invited to it (via email) at least one week in advance. Directly following the public presentation, about 15-30 minutes should be given for questions from the committee and committee discussion. The student should submit the PhD Final Exam form via the *TGS Forms* tab in GSTS. Each PhD Final Exam committee member must approve the form after the final exam (defense) date. Committee members can render their approval by clicking a link in an email that is automatically generated by GSTS once the exam date passes. Once the dissertation is approved by the thesis committee and all edits and revisions are complete, the student should submit it online for archiving via ProQuest.

4. Graduation

The PhD degree is awarded in December, March, June, and August. Students should refer to the TGS PhD Degree Completion pages for information on filing requirements and deadlines.

5. Degree deadline

Students have 9 years from matriculation to complete the PhD degree. Only very rarely under extreme extenuating circumstances will students be granted permission to continue beyond 9 years.

III) REQUIREMENTS FOR THE MS DEGREE IN STATISTICS AND DATA SCIENCE

The Graduate School has general requirements for graduate students at NU, which can be found at http://www.tgs.northwestern.edu/academics/degree-requirements/index.html. All students are required to fulfill the Department requirements in addition to those specified by The Graduate School.

A. MS in Statistics and Data Science program requirements

The MS in Statistics and Data Science offers two tracks:

1). Coursework of 12 units;
2). Coursework of 12 units + MS thesis.

MS students are required to take the following 6 classes: STAT 350 (Regression Analysis), STAT 353 (Advanced Regression), STAT 415 (Introduction to Machine Learning), and STAT 420-1, STAT 420-2, STAT 420-3 (Introduction to Statistical Theory and Methodology I, II, III), and the remaining 6 required course credits are to be satisfied with electives. No more than 10 electives can be taken. Elective courses should be chosen from other 300 and 400 graduate level courses in Statistics, excluding STAT 301, STAT 303, STAT 320, and STAT 330, and should include at least two 400 level courses. Approved courses in other departments may also be taken; however, no more than 3 non-STAT courses may be used to fulfill the degree requirements. Unless otherwise specified by the University or Department, students should take all required courses for a letter grade (i.e., not Pass/Fail). Independent Study registrations cannot be used to fulfill the coursework requirements.

Optional Qualifying Exam at the PhD level. This comprehensive examination covers the required course work in the first year and is typically taken in beginning of fall quarter of the second year. MS students have the option to take the qualifying Exam at the PhD level. However, passing the exam at the PhD level does not mean that an MS student will be admitted to the PhD program.

B. Optional Master's thesis

Doing a thesis is an option for students who desire to enhance their research experience by working with a thesis advisor on cutting-edge topics. Starting the second quarter of the first year of study, students who are interested in the thesis track are encouraged to approach graduate faculty in the department and identify one as a thesis advisor. The thesis advisor must be identified by the end of the student's first year in the program. Once the thesis advisor is chosen, a thesis committee will be formed for each student, consisting of the thesis advisor, and two other faculty members. In addition to the advisor, at least one other committee member must be a graduate faculty member. The thesis committee must be formed no later than the end of Fall quarter of the second year. The thesis advisor will guide the student in thesis research and course registration until completion. The student must submit a written thesis, which has been approved by their committee, and do a 30-minute public presentation on the work.

C. Optional internship program (STAT 595-0)

MS students can choose to participate in an optional internship program in the Summer after the first year of study. Students on an F-1 visa need to register for STAT 595-0 under the Curricular Practical Training (CPT).

MS students who are not on the thesis track may choose to participate in an optional internship program in the second year of study by registering for STAT 595-0 after they have completed the required coursework for the MS in Statistics and Data Science Program. The internship can be a paid job in a company, or a paid or unpaid research internship sponsored by a faculty member on campus. The student who plans to do an internship should obtain an offer letter from the sponsor in advance and the approval from the Director is required before registering for STAT 595-0. Students who register for STAT 595-0 will be able to maintain the full-time enrollment status for visa purposes and will not be charged for tuition. Students on an F-1 visa also need to apply for the CPT if they work off campus or work more than 20 hours per week on campus. The internship does NOT reduce the 36-month Optional Practical Training (OPT) Authorization.

D. Length of study

Both tracks require a minimum of 4 quarters of residency (not including summer), while students on thesis track may need 5-6 quarters or longer to complete their degree. The degree for both tracks must be completed within two years (i.e., Fall of Year 1 to Summer of Year 2).

E. Full-time status

To be full-time, a student must register for no fewer than three courses (and no more than four) authorized for graduate credit per quarter. Note that full-time status is required in order to receive financial support of any kind or to maintain a valid visa status (e.g. F-1, if it applies). Students who have completed their coursework but are working toward completing a thesis for the MS degree may register for TGS 512 to maintain the full-time student status. Students who have completed their coursework but are not on thesis track may choose to do an internship by registering STAT 595-0 to maintain the full-time student status.

F. Course registration

All students register for classes online through CAESAR. Registration dates are posted on the Office of the Registrar's Website for each quarter. New graduate student registration typically starts in the last week of summer before the new quarter starts. It is the student's responsibility to comply with all deadlines to complete registration each quarter. In the case that a student has difficulty registering, they may contact Student Services via e-mail. For courses that require permission, students should contact the department that offers the course to obtain a permission number.

Summer registration is not required for the MS Students.

G. New student orientation

Every September, The Graduate School hosts a New Student Orientation. There is also a Department orientation, with information sessions on the Statistics and Data Science MS program and statistics/data science review sessions to help students prepare for the first-year courses. All new MS students are strongly encouraged to participate in both The Graduate School and Department orientations.

H. Milestones and timeline

The Department has specific requirements for milestones and their timeline, some of which are different from the general guidelines provided by TGS for MS students.

- **Year 1 Fall:** 420-1 + 350 + one or two credits of electives
  International students whose native language is not English are strongly recommended (but not required) to participate in English Language Programs (ELP) to improve their spoken English during their first year.

- **Year 1 Winter**: 420-2 + 353 + One or two credits of electives
  Students are encouraged to start to approach faculty advisors to identify a suitable thesis project, if they are interested in writing a MS thesis.

- **Year 1 Spring:** 420-3 + 415 + one or two electives
  Students who are interested in writing a MS thesis should approach faculty advisors to identify a suitable thesis project.

- **Year 1 Summer:** Internship/summer research

Students are strongly encouraged to do a summer internship. Students on an F-1 visa need to register for STAT 595-0 under CPT. Alternatively, students may choose to do summer research if they are interested (registration is not required). Every student who chooses to write a thesis must have found a faculty advisor by the end of summer and, ideally, have found a suitable thesis project/topic.

- **Year 2 Fall:** Optional Qualifying Exam at the PhD level + electives + Thesis research or internship
  All students will have the option to take the qualifying exam at the PhD level at the beginning of Fall quarter. All students should have completed the minimum required credits of coursework (12 units) by the end of Fall quarter. For students who have completed the minimum required credits of coursework (12 units) before the beginning of Fall quarter, they can continue to take some electives according to their career goals (as long as no more than 16 credits total), or participate in the internship program by registering for STAT 595-0 (See Part III C for details) if they are not on thesis track, or do thesis research full-time by registering for TGS 512 if they are on thesis track. Students who do not pursue a MS thesis will be able to graduate provided their GPA meets TGS standard (>=3.0). Students on the thesis track should start research no later than the fall quarter.

- **Year 2 Winter:** Thesis research or internship (or + electives)
  Students on the thesis track will be on thesis research full-time by registering for TGS 512 or they may choose to take some electives while they are completing their thesis (as long as they will earn no more than 16 credits total). Students who are not on thesis track can continue to take some electives according to their career goals (as long as no more than 16 credits total), or participate in the internship program by registering for STAT 595-0 if they have completed the required coursework for the MS in Statistics and Data Science Program.

- **Year 2 Spring:** Thesis research or internship (or + electives)
  Students on the thesis track will continue to be on thesis research full-time by registering for TGS 512 or they may choose to take some electives while they are completing their thesis (as long as no more than 16 credits). Students who are not on thesis track can continue to take some electives according to their career goals (as long as no more than 16 credits total), or participate in the internship program by registering for STAT 595-0 if they have completed the required coursework for the MS in Statistics and Data Science Program.

- **Year 2 Summer:** Thesis research. All students must complete the degree by August 31st.

Completion of thesis work means completion of the research, written report, and a 30-minute public oral presentation of the thesis work.

I. Conference travel award

The Department strongly encourages all students to attend professional conferences. A master student is eligible for one-time travel award up to $3,000 if they present research work in a significant research conference. To apply for the Department travel award, the student must submit a Department Conference Travel Grant application to the Department **at least 14 days prior** to the first date of travel or the first date of the virtual conference.

J. Department seminars

The Department hosts a research seminar series and a professional development talk series. **All graduate students are strongly encouraged to attend all Department seminars.** For the professional development talk series, the invited speakers are usually Northwestern and Department alumni who share their working experience and give their advice to current students. Students should take advantage of opportunities to meet with seminar speakers and participate the networking reception after the professional development talks.

K. Professional development

The Department provides career mentoring for students and helps students seek appropriate resources in response to the professional development. In addition to the research seminars and professional development talks, the Department also

invites staff from Northwestern Career Advancement (NCA) to give workshops on resume writing and job and internship searching. NCA also provides career development, preparation, and professional opportunities for graduate students.

IV) REQUIREMENTS FOR THE AD HOC MS DEGREE IN APPLIED STATISTICS

The Department offers an Ad Hoc MS degree in Applied Statistics for doctoral students in other disciplines who wish to establish their qualifications in statistics and quantitative research methodology. Students are expected to submit their application for the MS in Applied Statistics program prior to or shortly after starting courses in the Statistics and Data Science Department. No more than two STAT classes should be taken prior to submitting the application. Accepted students will be expected to take a total of 9 courses in a program to be approved by the program director. Two of these courses (STAT 320-1, 2, Statistical Theory and Methods I, II) will ordinarily be required of all students, to provide a foundation in statistical theory. Students should complete 7 other courses selected with the advice and approval of the Applied MS Degree Program Director, at least 4 of which must be statistics courses taught in the Department. There is a list of approved course plans for this degree on the Department website. All Ad Hoc MS candidates are required to complete a culminating experience project using statistics. This project is typically work that will be included in the student's PhD thesis, but can also be a stand-alone project.

V) STUDENT AFFAIRS

A. Academic standing

Satisfactory Academic Standing: Every student must maintain a satisfactory academic standing by meeting the standards of the Department and The Graduate School. Please review the TGS general requirements for satisfactory academic progress. In addition to TGS criteria, the Department regards the student to have **unsatisfactory academic standing** if the student: 1) has an overall grade average below B (3.0 GPA) in any quarter; 2) fails the qualifying exam and does not complete a Department-approved qualifying paper; 3) fails to complete the prospectus exam by the end of third year or, if the student began the PhD program having passed the qualifying exam, fails to complete the prospectus by the end of the second year (without receiving approval from the Department for an extension); 4) fails to complete the prospectus exam by the end of fourth year if granted an extension; 5) does not make satisfactory progress in research; 6) violates Departmental or TGS rules (violations may include, but are not limited to: academic dishonesty, improper conduct, work on-/off-campus without Department and TGS permission, taking non-STAT courses without advisor's approval).

Evaluation: The Department conducts an annual review of each PhD student's academic progress in September via GSTS. Students may logon to GSTS to read their reviews. In addition, the Department conducts informal evaluations of each PhD/MS graduate student in each quarter. Students with unsatisfactory academic standing will be notified.

Probation: When the Department has determined that a student is in unsatisfactory academic standing (see reasons listed above), the student will be placed on probation. In particular, if a PhD student fails the qualifying exam and then does not complete a Department approved qualifying paper by the end of Spring quarter of their second year, they will be placed on probation for Summer quarter. If they do not have an approved qualifying paper by the end of Summer (of the second year), they will be asked to leave the PhD program. When the program places a student on probation, the student and TGS will be notified in writing. The Department may pull the funding of the student on probation based on a case-by-case evaluation.

Dismissal: A student who is on probation will be re-evaluated at the end of the probation period. If satisfactory progress is not made, the student will be dismissed from their graduate program. When a decision to dismiss a student is made by the program, both the student and TGS will be notified in writing within five business days of the decision. The

dismissal notification will include the effective date of the dismissal and a clear statement of the reason(s). University policies on academic and student conduct, and sanctions, are described in the University Student Handbook.

Appeal: A student can appeal the Department's dismissal decision to The Graduate School (TGS) within ten days of the date of the Department's written notice of dismissal. Students should submit a written request with supporting materials appealing the decision to the attention of the Director of Student Services. If the appeal is not filed within 10 days, the Department decision becomes final and not subject to appeal. (See the TGS satisfactory academic progress webpage.)

B. Academic integrity

Academic integrity is critical to any scholarly activity. Principles regarding academic integrity can be found on the Office of the Provost's website: http://www.northwestern.edu/provost/policies/academic-integrity/principles.html. Every student is required to read, understand, and behave in an academic manner that complies with Northwestern's Basic Standards of Academic Integrity.

Unacceptable behaviors include but are not limited to: cheating, plagiarism, fabrication, obtaining unfair advantage, aiding or abetting academic dishonesty, falsification of records and official documents, unauthorized access to computerized academic or administrative records. Violation of these rules may result in a range of sanctions, possibly including dismissal from the program.

The Department of Statistics and Data Science considers violations of academic integrity to be very serious. Suspected academic dishonesty will be reported to The Graduate School (TGS) and will be resolved using the process and procedures approved by the Graduate Faculty outlined here.

If a student has questions about academic integrity, they are strongly encouraged to speak with their graduate program director or advisor.

C. Improper conduct

Nondiscrimination Statement

Northwestern University does not discriminate or permit discrimination by any member of its community against any individual on the basis of race, color, religion, national origin, sex, pregnancy, sexual orientation, gender identity, gender expression, parental status, marital status, age, disability, citizenship status, veteran status, genetic information, reproductive health decision making, or any other classification protected by law in matters of admissions, employment, housing, or services or in the educational programs or activities it operates. Harassment, whether verbal, physical, or visual, that is based on any of these characteristics is a form of discrimination. Further prohibited by law is discrimination against any employee and/or job applicant who chooses to inquire about, discuss, or disclose their own compensation or the compensation of another employee or applicant.

Northwestern University complies with federal and state laws that prohibit discrimination based on the protected categories listed above, including Title IX of the Education Amendments of 1972. Title IX requires educational institutions, such as Northwestern, to prohibit discrimination based on sex (including sexual harassment) in the University's educational programs and activities, including in matters of employment and admissions. In addition, Northwestern provides reasonable accommodations to qualified applicants, students, and employees with disabilities and to individuals who are pregnant.

Any alleged violations of this policy or questions with respect to nondiscrimination or reasonable accommodations should be directed to Northwestern's Office of Civil Rights and Title IX Compliance, 1800 Sherman Avenue, Suite 4500, Evanston, Illinois 60208, 847-467- 6165, equity@northwestern.edu.

Questions specific to sex discrimination (including sexual misconduct and sexual harassment) should be directed to Northwestern's Title IX Coordinator in the Office of Civil Rights and Title IX Compliance, 1800 Sherman Avenue, Suite 4500, Evanston, Illinois 60208, 847-467- 6165, TitleIXCoordinator@northwestern.edu.

A person may also file a complaint with the Department of Education's Office for Civil Rights regarding an alleged violation of Title IX by visiting www2.ed.gov/about/offices/list/ocr/complaintintro.html or calling 800-421-3481. Inquiries about the application of Title IX to Northwestern may be referred to Northwestern's Title IX Coordinator, the United States Department of Education's Assistant Secretary for Civil Rights, or both.

Teaching Assistant Obligations

Students who are working as Department teaching assistants should familiarize themselves with Title IX policies, policies on discrimination, harassment, and sexual misconduct, and with their responsibilities for sexual misconduct disclosures which are outlined here: https://www.northwestern.edu/sexual-misconduct/faculty-staff-disclosures-handout.pdf.

D. Conflict resolution

TGS recommendations for dealing with student-faculty conflicts are outlined here: https://www.tgs.northwestern.edu/services-support/dealing-with-student-faculty-conflicts/. Graduate students are also encouraged to read the Guidance for Positive Graduate Student and Faculty Adviser Relationships and Graduate Education Expectations Document to assist with understanding student-advisor relations.

VI) GRADUATE STUDENT LIFE

A. Department seminars

The Department hosts a research seminar series and a professional development series. **All graduate students are strongly encouraged to attend all Department seminars; the Statistics and Data Science PhD students are required to attend all research seminars.** Students should also take advantage of opportunities to meet with seminar speakers. In addition, students are encouraged to speak with their faculty advisor to see if there are seminars outside the Department that would be beneficial for the student to attend.

B. Department reading groups and events

Graduate students are encouraged to take part in department events and opportunities, such as the various reading groups and graduate presentations. If a student has an idea for a group or professional development opportunity, they are encouraged to speak with the Department's administrator or their program director.

C. Life on campus

WildCARD

Each student will be assigned a Student Identification Number and issued Northwestern's Official ID, a campus Wildcard. The Wildcard can be used to access University buildings, shuttles, purchase food through the University meal plan, and more. Wildcard Advantage Discounts also offer discounts on some products and services to Wildcard holders. The Wildcard is non-transferable and is the property of NU; the card must be surrendered upon request. If the card is lost

or stolen, the student must report it immediately to the Wildcard office (http://www.northwestern.edu/wildcard/get-a-card/replacing-your-card.html) and will be liable for the card replacement fee. The Wildcard office is located in the basement of Norris center: http://www.northwestern.edu/wildcard/index.html.

NetID

The NetID is a student's electronic identity at Northwestern. You will use your NetID to access important University systems including, but not limited to:

- University e-mail
- NU online directory
- NU Library online resources
- Grades and transcripts (CAESAR)
- Kronos Time System
- Campus wireless network
- Off-campus access to the NU Network (VPN)

Parking and transportation:

All vehicles parked on the Evanston campus must display a valid parking permit. Parking permits can be purchased at Evanston Campus Parking Services located at 1841 Sheridan Road, Evanston, IL 60201.

NU provides shuttle bus service on the Evanston and Chicago campuses, as well as an intercampus shuttle between the two campuses. All NU students have free access to the shuttle bus, obtained by showing a WildCARD. Other public transportation from Evanston to Chicago, as well as other destinations, include CTA and Metra. All full-time students enrolled in TGS are eligible for a U-Pass for CTA service, with the exception of those enrolled in TGS 512 (continuous registration).

Housing:

NU Residential Services provides convenient on-campus apartments for graduate students (Engelhart Hall and the Garrett Place Apartments). Information about off-campus housing can be found at http://www.northwestern.edu/offcampus/.

Immigration status:

International students are required to maintain a legal immigration status while they pursue graduate study in the United States. For all full-time international students (F-1/J-1 visa holders), **working off-campus must be approved by the International office before they start to work**. **Failure to comply with this may result in exclusion from the program and termination of F-1/J-1 visa status**. When working on-campus F-1/J-1 students are allowed to work up to 20 hours per week while school is in session, and 20 or more hours per week during school breaks and holidays. For information regarding employment please see http://www.northwestern.edu/international/living-working/student-employment/index.html.

Purchasing:

NU has free and discounted software licenses for graduate students. Preferred vendors and other purchase resources can be found at http://www.northwestern.edu/uservices/purchasing/.

Additional Useful Links:

- Legal Services for Graduate Students

- Health Services
- Student Health Insurance
- Counseling and Psychological Services (CAPS)
- Financial Aid Office
- NUHelp - NUhelp is your guide to navigating Northwestern's safety and wellness resources, whenever you may need them.
- AccessibleNU - AccessibleNU provides students with disabilities a learning environment that affords full participation, equal access, and reasonable accommodation.
- Women's Center
- Parental Accommodation Policy - covers accommodations available to graduate students who become new parents
- Child and Family Resources
- Graduate Student Association (GSA)
- Graduate Leadership and Advocacy Council (GLAC) - advocates on behalf of graduate students
- PhD and Postdoc Success - a career and professional development toolkit

VII) PHD STUDENT FUNDING AND DEVELOPMENT

A. Funding and Duties

Statistics and Data Science PhD students are typically supported through University fellowships, teaching assistantships, graduate assistantships, and research assistantships. PhD students are guaranteed funding for five academic years provided that the student maintains satisfactory academic standing.

As a general guideline, the Department strongly recommends that students focus on coursework during their first year of study, when they will typically be given entry-level teaching assistant responsibilities. Additional activities (such as research, projects) are not encouraged except for those who demonstrate exceptional mastery of the knowledge covered in the core courses.

PhD students in their second to fourth years will typically be placed on teaching, graduate, and research assistantships. Fifth year PhD students admitted prior to 2021 may be called on to TA during the academic year, if teaching assistants are needed by the Department, and will also generally be supported by a University fellowship during some of their fifth year (including summer). PhD students admitted in 2021 or later will be supported by teaching, graduate, and research assistantships in the fifth year with fellowship support during the summer. In some cases, a student may obtain financial support in the sixth year through a faculty member's research fund or from the Department if an assistantship position is available, provided that the student has been making satisfactory academic progress.

PhD students are strongly encouraged to apply for external grants during their doctoral careers. Receipt of external awards can have a significant impact on career development. In addition, students receiving external funding may get supplemental pay in addition to their University base salary (see the TGS policy on external funding at http://www.tgs.northwestern.edu/about/policies/financial-aid-policies.html). See https://www.statistics.northwestern.edu/graduate/current-phd-students/travel-grants-other-funding.html for information on funding resources. The Department requests that students inform the DGS when they submit applications for funding.

Responsible conduct of Research (RCR) training:

Effective January 4, 2010, The National Science Foundation (NSF) mandated that every graduate student supported fully or partially by NSF funding must complete the responsible conduct of research (RCR) training. This training includes two components: online CITI training and the student must complete STAT 519 (Responsible Conduct of Research

Training) organized by the Department at the first available opportunity after they complete the CITI course, if they have not already taken STAT 519.

Teaching/graduate assistantship and duties:

The Department will evaluate a teaching/graduate assistant's performance each quarter. Unsatisfactory performance in this work may result in disqualification of funding in future terms (see V, A – Academic Standing).

Summer fellowship:

Summer fellowship support for PhD students is contingent upon an approved proposal for summer study (in addition to satisfactory progress toward the PhD degree). Students who will be on a summer fellowship should submit a proposal for summer research before summer quarter starts. The student should consult with their academic advisor or a professor for a summer research topic. By the end of summer, the students should submit a report summarizing their summer research to the Director of Graduate Study.

Students in their third year or later of the PhD program may take a summer internship in industry. Summer fellowships are only awarded to students who work on research full time. Thus, students taking a summer internship should not register for STAT 590 or TGS 500 and are not eligible for summer fellowship. Students who plan to work on an internship in the summer are responsible for notifying the Department DGS and administrator as soon as they accept the internship, normally well in advance of the end of spring quarter. Failure to report this may be regarded as improper conduct. International Students will also need to receive authorization to work from the International Office (see VI, C: Immigration status).

B. Working on- or off-campus

TGS has rules regarding working paid jobs on- or off-campus in addition to the duties required by the graduate fellowship or graduate assistantship (http://www.tgs.northwestern.edu/about/policies/financial-aid-policies.html). Permission to do additional work is required and must be obtained from both the Department and TGS. The Permission to Work policies and the Graduate Student Permission to Work request form can be found at http://www.tgs.northwestern.edu/about/policies/financial-aid-policies.html. International Students will also need to receive authorization to work from the International Office if the employment is off campus (see VI, C: Immigration status).

C. Teaching skills

Teaching is an important element of graduate training. NU provides training to teaching assistants at the Academic Kickoff and graduate workshops. New teaching and graduate assistants are required by the Department to attend the Academic Kickoff. For advanced graduate students, NU provides a teaching certificate program through the Searle Center for Advancing Learning and Teaching. Advanced graduate students are strongly encouraged to participate in the teaching certificate program. PhD students who would like to teach their own introductory class should complete the teaching certificate program and let the Department Chair know about their interest in teaching during their third or fourth year in the program.

D. Conferences

The Department strongly encourages all students to attend professional conferences. A PhD student who is presenting their research work at a conference may apply for a TGS travel grant. Students are eligible for a maximum of **two grants** up to $800 per trip. Students must apply at least one week prior to the conference start date, but are encouraged to apply as soon as possible. See the TGS Conference Travel Grant (CTG) page for more information and the application.

For trips which cost more than $800, PhD students can apply to the Department of Statistics and Data Science for additional support for eligible expenses, up to $2,200 per trip. A typical condition for this travel grant award is that the student will present a research paper at a significant research conference in their field. To apply for a Department grant, the student must submit a Department Conference Travel Grant application to the DGS **at least 14 days prior** to the first date of travel or the first date of the virtual conference.

E. Professional development plan

The Department provides career mentoring for students. At the beginning of the PhD program, students are encouraged to work with their advisor to create a professional development plan. The plan should be reviewed regularly and updated as needed, at least once per year. Faculty will help students seek appropriate resources in response to the professional development plan.