Columbia University

Department of Statistics

PhD Student Handbook

[2025-2026]

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1. Introduction and Welcome

The Department of Statistics at Columbia University welcomes you as a new member in our PhD Programs in Statistics, as you embark on a journey in advanced learning and research training in Statistics, Probability, Machine Learning, and/or Data Science. Our program strives to prepare you for a future research career in academia or industry.

The Departmental faculty design and oversee every aspect of the PhD Program, in compliance with degree requirements and policies set by the Graduate School of Arts and Sciences, from curriculum, degree requirements, to timeline, and professional development. This Handbook provides a comprehensive collection of all relevant policies, processes, procedures, and practices that are in place to allow you to pursue a rigorous yet flexible learning path in our PhD program. The Handbook also lists a broad array of resources that are available to our doctoral students during their study, including an amazing team of administrators who are fully committed to your success in our program. *(See Appendix A: An Overview of the Department of Statistics and the University)*

1.1 Commitment to Our Shared Core Values

The Columbia University Department of Statistics values a broad and inclusive departmental learning experience, where all faculty, staff, and students embrace the following core values:

- Support and promote ***excellence*** in all research and scholarship with a steadfast commitment to prioritizing rigor and complexity over pace and haste;
- Recognize the power of ***grit*** as a predictor of success, and ***perseverance*** as an indicator of optimal performance outcomes and positive student functioning;
- ***Celebrate failures*** as fuel to drive inquiry and discovery, build tolerance for risk-taking, foster growth, and encourage vulnerability, humbleness, and connection;
- Act with ***integrity*** and show ***respect*** by practicing and advocating free expression, openness and fairness, and appreciation for one another at all times;
- Promote a ***share and growth mindset*** that results in overcoming obstacles, and shifting emphasis away from outcomes and toward effort and process.

Faculty, staff, and students' commitment to these shared values is essential to the dedication to developing and broadening enriched learning experiences for all members of the Columbia University Department of Statistics.

1.2 Departmental Key Contacts

The Department of Statistics has a dedicated Departmental Leadership Team and a team of Administrative Staff devoted to supporting our PhD Students. Below is a quick guide of some key departmental contacts, with their areas of leadership and support.

Key Contacts Quick Guide				
Title	**Acronym**	**Name**	**Email**	**Contact for PhD Student Questions**
Chair of the Department **(Dept Leadership)**	DC	Professor Bodhi Sen	bs2528@columbia.edu	academic life, department processes and policies, careers, faculty, course management, advancement of statistics education, department mission and goals, PhD student careers, research, academics
Vice Chair of the Department **(Dept Leadership)**	VC	Professor Samory Kpotufe	skk2175@columbia.edu	Supports Chair with academic life, department processes and policies, careers, faculty, course management, advancement of statistics education, department mission and goals, research, academics
Director of Graduate Research **(Dept Leadership)**	DGS	Professor Sumit Mukherjee	sm3949@columbia.edu	PhD Student advising, professional conference attendance and funding, PhD Program admissions, core course questions, program exceptions requests, careers for PhD Students, academic standing
Director for Academic Administration and Finance **(Dept Leadership)**	DAAF	Jack Tomaselli	jt3067@columbia.edu	Manages day-to-day operations of department, payroll, required employee documentation, employee citizenship documents for internationals, TA and Class Assistant hiring and payroll, PhD Student funding, financial aid, grants, awards, fellowships and scholarships, computer/laptop purchasing, conference travel reimbursements, department course scheduling, space planning, purchasing, administrative staff management, etc.
Associate Director for Academic Administration	ADAA	Cindy Meekins	cam2362@columbia.edu	PhD Program requirements, student meetings (at the discretion of the DGS and/or Chair of the Department), administrative support for PhD Program degree requirements and documents, admissions processing and PhD Visit Day, student life, social and departmental events, conference travel funds applications, departmental and University policies and compliance, qualifying exams registration and scheduling, TA and Class Assistant concerns, student spacing and office requests, student support resources, liaison for PhD Student questions, faculty and course scheduling, etc.

1.2.1 Departmental Key Contacts: Roles and Responsibilities

The Department of Statistics Leadership Team consists of three faculty members who manage tenure faculty teaching and research responsibilities while simultaneously providing leadership and oversight for the entire Department: the Chair of the Department, Vice Chair of the Department, and Director of Graduate Studies. The administrative member of the Departmental Leadership Team is the Director of Academic Administration and Finance, who provides broad oversight for the administration of the Department, and also manages the dedicated team of administrative staff and professionals, who are also available to assist with day-to-day essential functions.

The **Chair of the Department of Statistics, Professor Bodhi Sen**, provides strategic vision for the Statistics Department, and leads and promotes the well functioning of academic life for all faculty, students and staff in the Department of Statistics. Working closely with faculty, the Chair is responsible for the daily management of Department and University processes and policies, and the improvement and advancement of the quality of statistics education at Columbia University. The Chair supports shared governance of the Department, shapes the department mission, builds consensus around Departmental goals, plans long-range goals, and provides oversight of the daily administration of the entire Department of Statistics.

The **Vice Chair of the Department (VC), Professor Samory Kpotufe**, supports Chair of the Department in all areas: provides strategic vision for the Statistics Department, and leads and promotes the well functioning of academic life for all faculty, students and staff in the Department of Statistics. Working closely with faculty, the Chair is responsible for the daily management of Department and University processes and policies, and the improvement and advancement of the quality of statistics education at Columbia University. The Chair supports shared governance of the Department, shapes the department mission, builds consensus around Departmental goals, plans long-range goals, and provides oversight of the daily administration of the entire Department of Statistics.

The **Director of Graduate Studies (DGS), Professor Sumit Mukherjee**, serves as the administrative supervisor and coordinator of the academic affairs of the PhD Program in Statistics. The DGS functions as the primary liaison among faculty and students, and is responsible for fostering the academic strength of the PhD Program, and supporting the educational and professional success of the PhD Students. The responsibilities of the DGS are varied and broad, and include but are not limited to applications for admission to the PhD Program in Statistics, and student recruitment, success and planning, PhD Program administration, PhD Student advising, graduate outcomes, and managing and reporting program evaluation and assessment data.

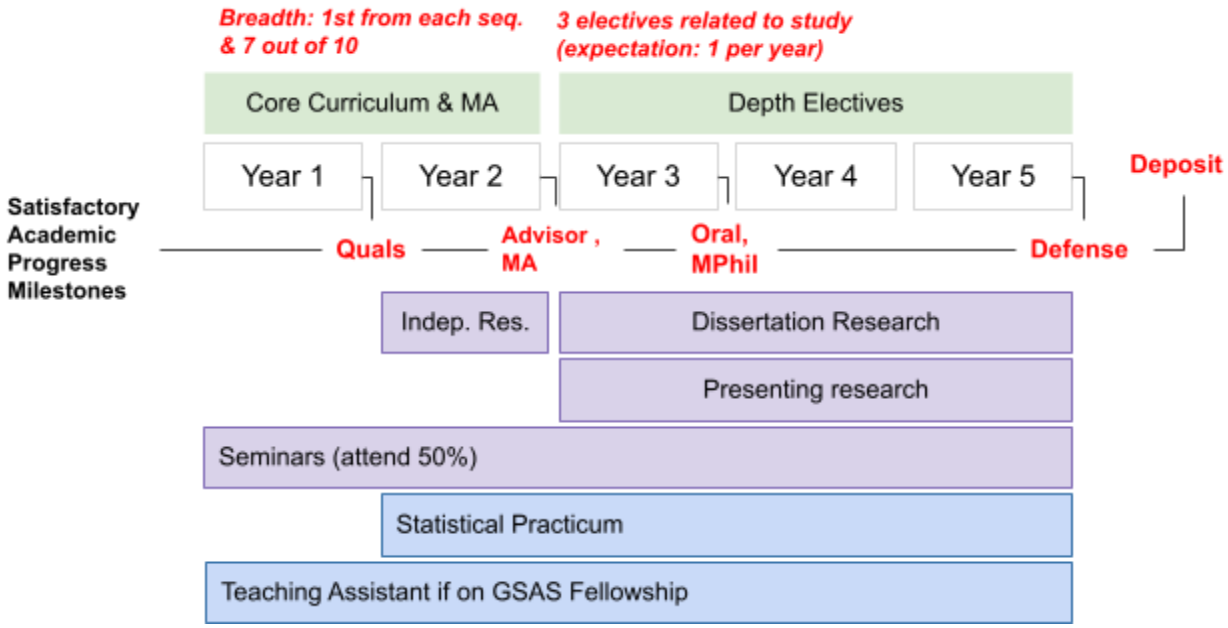
The **Director of Academic Administration and Finance (DAAF), Jack Tomaselli**, is the direct supervisor of all administrative staff in the Department of Statistics. The DAAF is responsible for managing the day-to-day administration of the department, the entire departmental budget, grant funding, and all budgetary reporting and reconciliation, payroll, hiring and onboarding of all faculty, staff and students, and TAs and Class Assistants, as well as part-time employees. The

DAAF also handles documentation and citizenship requirements for international employees and PhD Students, provides broad and daily oversight for the Department of Statistics operational administration. Additionally, the DAAF is responsible for construction, purchasing.

The **Associate Director for Academic Administration (ADAA), Cindy Meekins**, provides professional support to the DC, VCR, DGS, DAAF, faculty and PhD Students in the Department of Statistics. The ADAA handles broad PhD Student support with administration and documentation of University, School and Departmental policies and degree requirements. The ADAA also manages data and reporting on PhD Student progress, is responsible for policy questions and compliance, and serves as the faculty and student and academic services liaison, schedules one-on-one PhD student meetings per the DGS and/or the Chair of the Department, is the TA and Class Assistant ombudsperson, and is the Qualifying Exams coordinator, supports student space scheduling, academic conduct, student support resources liaison, and scheduling.

2. PhD Program in Statistics

2.1 Requirements at a Glance



Students are expected to register continuously until they distribute and successfully defend their dissertation. The core required and elective curricula in Statistics, Probability, and Machine Learning aim to provide doctoral students with advanced learning that is both broad and focused. We expect students to make ***Satisfactory Academic Progress*** in their advanced learning and research training by meeting the following program[1] through coursework, graduate independent research, and dissertation research;

[1] Here, each year is defined from September 1st to August 31st.

- By the end of year 1: passing the qualifying exams (2.3.2)
- By the end of year 2: fulfilling all course requirements for the MA Degree (2.3.1.1) and finding a dissertation advisor (see 2.3.4);
- By the end of year 3: passing the oral exam (dissertation prospectus) (2.3.5) and fulfilling all requirements for the MPhil Degree (2.3.5.1);
- By the end of year 5: distributing and defending the dissertation (2.3.6).

We believe in the ***Professional Development*** value of active participation in intellectual exchange and pedagogical practices for future statistical faculty and researchers. Students are required to serve as graduate teaching assistants, attend seminars, and present research during their training. Each student is also required to fulfill a *Statistical Practicum* requirement before graduation.

We provide in the following sections a comprehensive collection of the PhD Program requirements. Also included are policies that outline how these requirements will be enforced with ample flexibility. Questions on these requirements should be directed to Associate Director for Academic Administration, Cindy Meekins, cam2362@columbia.edu, and the Director for Graduate Studies, Professor John P. Cunningham, jpc2181@columbia.edu.

2.2 Continuous Enrollment

GSAS requires all PhD Students to maintain continuous enrollment, with the exception of those students who are on leave of absence. Depending on a student's academic progress, they should enroll in one of the following three Enrollment Categories: *Full-Time Residence Units*, *Full-Time Extended Residence*, and *Matriculation & Facilities* (M&F).

2.2.1 Enrollment Categories

- *Residence Units (RUs)* - Two Residence Units help students achieve the MA Degree; Four additional Residence Units lead to the conferral of the MPhil and PhD Degrees; Six Residence Units correspond to the first three years of the PhD Program.
- *Extended Residence (ER)* - PhD students who have successfully completed 6 Residence Units will switch from registering for RUs to registering for Extended Residence;
- *Matriculation & Facilities (M&F)* - To satisfy the continuous registration requirement and to make use of various university facilities, PhD students who have completed all six Residence Units and completed all PhD Program degree requirements may be eligible to register for Matriculation & Facilities.

These are not courses, do not have any expectations with regard to coursework, etc., and do not carry any credits or count as courses for your degree; however, all PhD Students are REQUIRED to register for one of the three Enrollment Categories every single semester to maintain full-time status, until they distribute their dissertation defense (see GSAS Registration for details), to be in compliance with this GSAS policy.

Extended Residence (ER) vs *Matriculation & Facilities (M&F)*

- Students on ER may register for courses and hold a teaching/research appointment;
- Students on M&F cannot take courses or serve as TA/RA;
- Students on ER and M&F may distribute and defend their dissertation;
- M&F has a lower tuition cost;
- Both allow students to maintain continuous enrollment through the distribution of their dissertation defense to their defense committee.
- Registering for M&F requires approval from the DGS/Chair.

Students are strongly encouraged to read the full descriptions of these enrollment categories and reach out to ADAA for clarification.

2.3 Satisfactory Academic Progress

The PhD Program is designed to provide students a broad exposure to and understanding of advanced knowledge in statistics and probability through core courses, and rigorous training in a focused direction with electives and research. Students are expected to meet key program-specific requirements and course requirements to ensure satisfactory academic progress in the PhD in Statistics Program. In exceptional circumstances, with a written rationale from the advisor and the approval of DGS, students may receive an extension to meet the degree requirements. *(See Appendix K: PhD Program Degree Requirements Checklist)*

The satisfactory progress of doctoral students is assessed bi-annually (twice a year) on the basis of academic performance, research progress, and professional development, including coursework, qualifying and oral exams, dissertation progress, and performance in any required teaching or professional development activities.

Any student who fails to maintain satisfactory academic progress will be advised of corrective steps to take. Per GSAS policy, a student who fails to maintain satisfactory progress by year three of their PhD Program, will receive academic warning or be placed on academic probation at first, or may have their candidacy terminated. In cases of evident failure to achieve progress by year three of their PhD Program, students will be dismissed from the degree program without a probationary period.

Please review carefully and regularly the list of requirements that fulfills *Satisfactory Academic Progress* in the PhD Program.

2.3.1 Core Course Requirements

The foremost feature of the PhD Program core course requirements is the inherent flexibility. The core requirements, which consist of 7 out of 10 course options, have been meticulously developed by faculty to promote a shared level of knowledge and experience for all students in the PhD Program, and have been thoughtfully refined and regularly updated to ensure that students master the full scope and acquire a solid foundation in the fundamental areas of statistical analysis. Simultaneous to providing an excellent framework, the core course

requirements afford students opportunities to be exposed to new fields and topics, and encourage students to explore, experience and research the diverse pathways of statistics specializations.

The core requirements are designed with the flexibility for students to select options from PhD-level courses in applied and theoretical statistics, and probability theory. The 3 leadoff courses, taken in the first semester, are foundational courses that are central in establishing a scholarly framework for the highest level of academic achievement in the discipline of statistics.

1. (Required) First course in each of the three core sequences in the first semester:
    - STAT GR6101
    - STAT GR6201
    - STAT GR6301

The 3 first-semester, leading core courses (listed above) are a catalyst for academic success in the 4 out of 7 advanced core course options in applied statistics, theoretical statistics, probability theory, and statistical computing. The advanced core requirements are complementary to, and build upon, the foundational leadoff courses by broadening opportunities for students to recognize and hone their individual research interests and skills.

2. (Required) Complete four out of seven courses from the following core curriculum during semesters 2-4)::
    - STAT GR6102-GR6103 (Applied Statistics II-III)
    - STAT GR6202-GR6203 (Theoretical Statistics II-III)
    - STAT GR6302-GR6303 (Probability Theory II-III)
    - STAT GR6104 (Statistical Computing)

It is through careful selection of the 4 advanced core courses, in association with 3 core topic electives (one per year) where students have ample agency to consider finite fields of focus in the disciplines that align with their dissertation defense objectives.

To fulfill the total core elective requirements, students have full flexibility to select from several options: choose one or more courses from a specialized advanced-level course list (STAT 6102-6104, 6202-6203, 6302-6303); choose one or more Statistics Topics Courses (any STAT 8xxx course); choose an approved course relevant to their research from any other discipline at the University.

3. (Topic Electives) Students who pass the Qualifying Exams are required to register for ONE topic elective per year (during years 2-5), up to THREE electives in total before graduation:
    - GR6103, GR6203, GR6303, if they have *NOT* counted toward the *four out of seven* requirements above;
    - Any of the 8xxx Topics Courses offered by the Statistics department;

- Up to ONE approved substitute advanced topics courses from outside the department. A written rationale from the mentor/advisor and the approval of DGS are required.

2.3.1.1 En Route Master of Arts (MA) Degree

Students admitted to the PhD Program earn their MA Degrees en route to their PhD. Students who successfully complete the core course requirements (seven courses in total) are awarded the MA degree. To receive the MA degree, students must complete the online Application for Degree available directly within SSOL, under the *Degree Application Status* tab. Students must click on the *Apply for Degree Certification* on the bottom of the *Degree Application Status* page, which allows students to submit their *Application for Degree* directly to the Office of the Registrar. Be sure to review and submit by the appropriate Application Deadline. Degrees are conferred in October, February, and May each year.

For information on the MA Convocation, review the GSAS Commencement Page, which is updated annually. Please note that you are not required to attend the graduation ceremonies to receive your degrees. Diplomas will be sent to students at their "Diploma (DP) Address" on file in SSOL. To verify your diploma details and for more information on graduation, please review the GSAS Graduation Checklist.

2.3.2 Qualifying Exams: Core Competency & Qualifying Subject Exams

All PhD in Statistics students are expected to pass TWO qualifying exams before entering the SECOND year of study:

- One Core Competency Exam;
- One of three Qualifying Subject Exams:
  - Applied Statistics ("*Applied*")
  - Theoretical Statistics ("*Inference*")
  - Probability Theory ("*Probability*")

(*See Appendix B: Syllabus for Qualifying Exams*)

2.3.2.1 Core Competency Exam

The Core Competency Exam covers core skills in probability and statistics (including linear algebra) deemed as necessary skills for all PhD Students in Statistics, regardless of their area of research. As a practice, all incoming PhD Students are required to take the Core Competency Placement Exam upon arrival. Students who perform exceptionally well receive a pass for the Core Competency Exam. Most students take the Core Competency Exam again in May/June during their first year and have a third chance to pass the exam in August before entering their second year of study. The department will assign summer tutors for students to prepare for Exam retakes.

2.3.2.2 Qualifying Subject Exams

Students are expected to take and pass one of the three Qualifying Subject Exams listed above in late August at the end of their first year. The department will assign tutors to students who prepare for taking the qualifying exams during the summer. Students who fail to pass in their first year will have a second chance to pass the exam in their second year of study.

2.3.2.2.1 Qualifying Subject Exams & Core Course Waivers

In exceptional cases, students who had taken advanced courses prior to joining the program may take the Qualifying Subject Exams upon arrival. The exam committee will assess the student's performance on the exam and make recommendations on pass/fail, and issue relevant core course waiver(s) for approval by the tenured and tenure-track faculty. Students who received core course waivers are required to take appropriate substitute courses, in consultation with their faculty mentor/advisor, and subject to approval by the DGS.

2.3.2.3 Qualifying Exams Administration

Each Qualifying Exam is administered by a faculty Exam Committee. The committees make pass/fail recommendations based on each student's performance on the exam and in relevant courses. The recommendations are presented to the whole tenured and tenure-track faculty for approval.

2.3.2.4 Qualifying Exams Preparation Groups

The Department assigns senior PhD Students host Qualifying Exam Review Groups to support first-year students with preparation for the Qualifying Exams.

- Qualifying Exams dates are available about six weeks prior to the scheduled exams
- Students will be notified of Review Groups schedules six to eight weeks prior to exams
- There are four Exam Review Groups available for students to join every summer
    - Core Competency Exam Group (offered every spring and summer)
    - Applied Statistics Exam Group (summer only)
    - Inference Exam Group (summer only)
    - Probability Exam Group (summer only)
- Review Groups meet once or twice weekly until the date of the exam
- Review Groups use prior exams to focus the study, maximize study time, and help familiarize students with the exam process and problems

The faculty encourages students to take a positive approach in studying for Qualifying Exams, and views the exam preparation period as an opportunity to digest and assimilate the topics learned during the first year.

2.3.3 STAT GR8001 Graduate Independent Research

The Department of Statistics Faculty includes STAT 8001 *Graduate Independent Research* as part of the curriculum as a measure to support students in advancing towards dissertation progress. Graduate Independent Research aims to help students refine research interests and develop thesis topics with the **Department of Statistics faculty**. Registration for GR8001 is not a commitment on either the faculty or student side to a formal advisor/advisee relationship. *(See Appendix D: Instruction on Registering for GR8001 Graduate Independent Research)*

To acquire an STAT 8001 Graduate Independent Research Advisor, students are encouraged to meet with several Department of Statistics faculty to determine aligned research interests. Students must receive pre-approval to register for STAT 8001 with the Department of Statistics faculty member who accepts/approves to mentor the student. Students are not permitted to register for STAT 8001 without Department of Statistics faculty approval.

Of note, Department of Statistics faculty do not serve as proxies for STAT 8001 Graduate Independent Research. Students ***are not*** permitted to work with faculty outside of the Department of Statistics for STAT 8001. Additionally, no student is permitted to make arrangements to request that a Department of Statistics faculty member post grade(s) for STAT 8001 on behalf of a non-Department of Statistics faculty member.

All students in their second year of study and beyond are expected to register for a minimum of one and a maximum of three sections of GR8001 Graduate Independent Research each semester to work with a faculty research mentor from the Department of Statistics.

- **First year students** are *not required/expected* to register for GR8001, but are welcome to do so should they be interested, in consultation with their Department of Statistics first-year faculty mentor;
- **Second year students** are required to register for GR8001 with a faculty member from the Department of Statistics, and should consider this an opportunity to connect with potential Department of Statistics faculty mentors/advisors to begin to refine research interests that align with faculty to select faculty thesis advisors before the end of year two;
- **Third year students and beyond**, who are already involved in dissertation research with a designated Department of Statistics faculty thesis advisor, are required to register for the GR8001 section that aligns with their thesis advisor's name.

2.3.4 Faculty Mentors, Faculty Research Mentors, and Faculty Thesis Advisors

As a PhD student in the Department of Statistics, you will be involved in three types of formal faculty relationships.

- **Department of Statistics First Year Faculty Mentors**
- **Department of Statistics Faculty Research Mentors (for STAT 8001 Graduate Independent Research)**
- **Department of Statistics Faculty Thesis Advisors**

Each of the three types of faculty relationships are defined below. Please check with ADAA, Cindy Meekins, if you have any questions about these roles.

2.3.4.1 First Year Department of Statistics Faculty Mentors

While some PhD Programs assign advisors to PhD students upon admission, the Department of Statistics PhD students offers the flexibility of encouraging every incoming student to choose a Department of Statistics *first-year faculty mentor*. The first-year mentor will remain in that role until the student has made mutually agreeable arrangements with a faculty member to serve as their dissertation advisor. PhD students have the option to spend up to two full academic years to carefully select a dissertation defense advisor from the Department of Statistics faculty.

PhD program students begin their academic journey with a Department of Statistics faculty mentor of their choosing, and ultimately transition to selecting a faculty dissertation advisor. During the summer prior to the start of the academic year, new incoming PhD students will receive a survey inviting them to choose their *first year mentor* from a designated list of *available Departmental faculty members*[2]. From those survey responses, students will be assigned one faculty member as their first year faculty mentor. Students are encouraged to connect with their faculty mentor approximately twice per semester to check on progress and ask questions. The faculty mentor can provide broad advising on academics and research, general information on qualifying exams, details about PhD program requirements, and offer primary foundational support throughout the new student experience.

2.3.4.2 Department of Statistics STAT 8001 Faculty Research Mentors

Students in years 2-4 will work with ***Department of Statistics faculty*** who will provide direct oversight of mentored research for the STAT 8001 Graduate Independent Research requirement. Departmental faculty research mentors provide research mentorship, and are not responsible for any mentorship beyond the scope of the research they are providing direct oversight for. The STAT 8001 Graduate Independent Research mentors are not designated 1st year faculty mentors, and they are not faculty advisors. The Research Mentor is a separate role designated specifically for the STAT GR8001 research experience. The relationship between research mentors and PhD students is limited to direct research oversight, not to academic advising, thesis development, etc.

2.3.4.3 Department of Statistics Faculty Doctoral Dissertation Advisors

The selection of a faculty member or members(s) who will supervise the dissertation work required to fulfill degree requirements is one of the most critical decisions PhD students will make. PhD students will spend several years working very closely with their dissertation advisor(s) of choice, and those advisors are typically catalysts for the direction of student careers. Choosing dissertation advisor(s), therefore, is an extremely important decision for PhD students.

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[2] *Available Department faculty members* refers to faculty who are available during the semester of the incoming class. Thus, faculty on sabbatical, traveling, or out on personal leave (such as paternity or parental care, etc.) will not be considered available to serve as mentors for incoming PhD students.

A PhD student undertaking dissertation work needs an advisor whose area(s) of expertise and research align with the student's particular area(s) of interest. Students are recommended to select a dissertation advisor with whom they can connect and communicate effectively, as their advisor(s) can offer important opportunities to make key connections in their chosen fields. Students should seek out dissertation advisors who will stimulate thought, who have interests in the students' chosen topics sufficient to jointly produce new insights, and who will challenge students to think in a novel manner about their research.

2.3.4.4 Proposed External Doctoral Dissertation Advisor Policy

All Statistics Department PhD Program students are required to have a *Department of Statistics faculty doctoral dissertation advisor* by the end of their second year in the PhD Program. With permission from their approved Department of Statistics doctoral dissertation advisor, students may also work with faculty from other Columbia University departments for their dissertation defense only. ***(Students are not permitted to work with non-Department of Statistics faculty for STAT 8001 Graduate Independent Research.)*** Students who fail to have a Department of Statistics faculty advisor by the end of their second year in the program will be, by default, placed on academic probation for the fall semester of year 3 of their PhD Program. Students who fail to have a Department of Statistics faculty advisor by the end of their third year may be terminated from the PhD Program in Statistics.

2.3.4.4.1 Choosing the Doctoral Dissertation Advisor(s)

PhD students should familiarize themselves with GSAS rules about who can supervise dissertation research and writing and serve on a dissertation committee, and carefully select their dissertation advisor from the list of ***GSAS-Approved Department of Statistics Faculty Dissertation Advisors***. Several resources and strategies can help students identify an appropriate faculty advisor, such as reviewing faculty profiles, interacting with faculty through Departmental events and courses and/or TAing for faculty, and requesting one-on-one meetings with faculty members.

Students in the PhD Program in Statistics must have at least one Columbia University Department of Statistics GSAS-approved doctoral dissertation advisor (students may have more than one advisor). The Department of Statistics Faculty Directory is a valuable source of information on potential advisors. There you will find links to faculty-created profiles for most faculty members, which generally include their areas of research, recent publications, and other academic activities. Literature searches can provide further information on the publications and preferred journals of particular faculty members.

Students can also get to know potential advisors by taking their course(s), serving as their teaching assistant(s), participating in research with faculty, and/or attending seminars and other presentations by Departmental faculty members. Additionally, students are encouraged to request one-on-one appointments to meet with at least three potential dissertation advisors.

2.3.4.4.2 Choosing an External Doctoral Dissertation Advisor

For questions and final approval of any exceptions related to the dissertation advisor, students MUST consult the Director of Graduate Studies (DGS). It is the responsibility of the students to understand and comply with policies on dissertations and defenses set forth by the Graduate School of Arts and Sciences (GSAS). Non-compliance with these policies may lead to delays in dissertation progress. The ADAA for the department, Cindy Meekins, provides administrative support to both students and faculty in terms of seeking clarification from GSAS, as needed.

According to GSAS Policy on Faculty Advising of the Dissertation | GSAS

> *"Faculty may supervise dissertations in their own department and in any other department in which they have been designated as approved dissertation advisors."*

Consistent with GSAS policy, in addition to their departmental doctoral dissertation advisor (required), Department of Statistics students may elect to choose a co-advisor (optional) from another Columbia University Department. The co-advisor must be approved by the student's Department of Statistics dissertation advisor, and the DGS for Statistics. Statistics PhD students commonly collaborate with faculty in the School of Engineering, the Department of Computer Science, other engineering departments, the Data Science Institute, and programs such as Biostatistics, Mathematics, and Business.

2.3.4.4.3 Department Policies (Adopted Spring 2023)

In Spring 2023, the Statistics Department Tenured and Tenure-Track faculty of the department voted to PASS the following Policy on Doctoral Dissertation Advisors.

- All Tenure and Tenure-Track Faculty in the Department of Statistics are approved dissertation advisors and are eligible to sponsor statistics doctoral students.
- The department's Affiliated Faculty (listed on the department's faculty page) are eligible to co-sponsor statistics doctoral dissertations with a Statistics Tenure and Tenure-Track Faculty member, who must approve the co-sponsor arrangement.
- A vote of approval by the Tenure and Tenure-Track Faculty is REQUIRED for a non-affiliate Columbia faculty member to co-sponsor a Statistics dissertation. Such requests must be submitted by the Statistics Tenure and Tenure-Track Faculty co-sponsor to the Director for Graduate Studies, and then be voted on by the Tenure and Tenure-Track Faculty.

2.3.4.4.4 Department Policies on Co-Advisor Funding (Adopted Fall 2023)

As of Fall 2023, it is strongly encouraged that external dissertation co-sponsors provide funding support for Department of Statistics advisees. *(See Appendix E: Guidance on External Dissertation Advisor)*

2.3.4.4.5 Policy on Doctoral Dissertation Advisors (Adopted Fall 2025)

In Fall 2025, the Statistics Department Tenure and Tenure-Track faculty voted to PASS the following Policy on Dissertation Sponsors.

- All PhD students MUST have a Tenure or Tenure-Track Faculty member in the Columbia University Department of Statistics to supervise their doctoral dissertations.
- Students may also elect to have a co-advisor within the Statistics Department and/or from another Columbia University department, provided that the co-advisor is a GSAS-approved Columbia doctoral dissertation advisor.
- If a co-advisor is external to the Statistics Department (and is not an affiliated faculty member), a Tenure or Tenure-Track Faculty member in Statistics MUST confirm in writing (via email) that they will serve as the student's primary doctoral dissertation advisor. This structure ensures continuity of mentorship and clear academic guidance throughout the doctoral program.

In situations where an external co-advisor is functioning as the primary doctoral dissertation advisor, the external advisor is responsible for funding one semester per year of the student's tuition, stipend, and associated costs. During that semester, the student will be exempt from TA responsibilities to focus on research. External advisors who are unable to provide this support may not serve as the primary dissertation supervisor; in such instances, the student will work exclusively with a Statistics Department advisor.

2.3.5 Dissertation Prospectus (Oral Exam)

PhD Students in the Statistics department are required to pass their oral exam, also known as Dissertation Prospectus, ***by the end of their 3rd year***, to maintain satisfactory academic progress. (See GSAS website for a detailed explanation of GSAS policy on this exam.) Students who have questions/concerns should discuss them with their Department of Statistics faculty thesis advisor, the DGS and/or the ADAA.

The purpose of the Dissertation Prospectus is to test the student's mastery of the literature in the chosen topic area. The main component of the orals is the student's presentation of their research progress and goals to the orals committee. The topic of the oral exam need not be the eventual dissertation topic. The oral exam requires a committee consisting of the faculty dissertation advisor and two faculty members from the Statistics Department.

There are three *administrative* steps to completing the Dissertation Prospectus process:

1. In consultation with their faculty dissertation advisor, students select the three-member Dissertation Prospectus Committee from the List of Approved Doctoral Dissertation Advisors.
2. Complete the Report of the Dissertation Prospectus Committee Form, and **two weeks prior to the exam**, submit an unsigned copy to the ADAA, Cindy Meekins at cam2362@columbia.edu.
    a. Fill out the entire top portion, and the committee member names, UNIs and email addresses (phone numbers are not necessary)
3. Schedule a mutually agreeable date and time with your committee, and see ADAA, Cindy Meekins to reserve a room for your oral exam.

2.3.5.1 En Route Master of Philosophy (MPhil) Degree

After earning their MA Degrees, and post Dissertation Prospectus, students admitted to the PhD Program are eligible to receive their Master of Philosophy (MPhil) Degrees en route to their PhD. The MPhil is conferred upon students who have fulfilled all PhD Program degree requirements except the dissertation (also known as All But Dissertation or ABD). Students in the Statistics Department will want to complete the following to meet MPhil Degree eligibility:

- Received an MA Degree
- Completed all PhD Student required courses (10 courses)
- Completed 6 Residence Units
- Passed Dissertation Prospectus (Oral Exam)
- Students will be asked to rectify Incomplete (IN), Credit Pending (CP), or missing grades before receiving the MPhil, regardless of whether or not the course is a requirement for the Degree

Once all requirements for the MPhil have been completed, (typically directly after the oral exam is complete), the ADAA, Cindy Meekins, will submit an MPhil Application on behalf of the student to the GSAS Dissertation Office by the deadline that corresponds to the intended degree conferral date. MPhil Degrees are awarded three times a year—in October, February, and May.

2.3.6 Proposed Sixth-Year Funding Model

Consistent with the program's expectation of five-year completion, sixth-year funding is provided in accordance with the structure described below.

2.3.6.1 Standard Support (25% Advisor Contribution; With Teaching)

- The student's advisor (or collaborating faculty member) is expected to provide 25% of the student's annual cost of support (tuition, stipend, and fees).
- The student will teach one course during the academic year (either fall or spring semester).
- The department will cover the remaining balance of the student's annual support.

2.3.6.2 Enhanced Advisor Support (50% Advisor Contribution; No Teaching)

- The student secures 50% of their annual support from their advisor or collaborating faculty.
- There is no teaching requirement for the academic year, and may instead be appointed as a Research Assistant (RA) for one semester.

2.3.6.3 Limited Departmental Support (No Advisor Funding Available)

- In the absence of advisor funding, the department may extend support for one semester during the sixth year.
- In this case, the student will teach one course in the fall semester and will receive stipend and enrollment support for that semester only.
- Full-year funding is subject to School and Program policies and funding availability.

2.3.7 Distribution, Defense, and Deposit of the Dissertation

Students are expected to finish their dissertation research within five years of study. The dissertation defense should be carefully planned at least 4-6 weeks in advance of the anticipated defense date.

2.3.7.1 Dissertation Defense Quick Guide

Dissertation Defense Quick Guide	
Student Responsibilities	**ADAA, Cindy Meekins/GSAS Support**
Review defense toolkit, meet with ADAA	Support defense administrative processes
Select defense committee with advisor	Answer questions on committee eligibility
Schedule defense, reserve space with ADAA	Reserve a room in the School of Social Work
Complete the DA, email to ADAA	Acquire signatures, submit the DA to GSAS
Distribute copies of dissertation to committee	Confirm candidate is registered correctly in SSOL
Defend dissertation	Acquire committee signatures on VS for GSAS
Complete any required revisions (6 months)	Contact candidate as date approaches
Email signed AC to ADAA	Submit DGS-signed AC to GSAS
Deposit dissertation with GSAS	Candidate works with GSAS Dissertation Office
Register to participate in graduation	Candidate works with GSAS Dissertation Office

2.3.7.2 Dissertation Defense Application (DA)

When entering their final year of study, students should discuss with their dissertation advisor a plan to finish their dissertation and an approximate timeline for the defense. The Application for the Dissertation Defense should be submitted to the ADAA, Cindy Meekins at cam2362@columbia.edu, once the five proposed dissertation defense committee members have been firmly established, and the date and time of the dissertation defense have been finalized. The ADAA will review it for accuracy, and submit it to GSAS for their review and approval before the defense may take place. The ADAA is expected to submit the DA to GSAS ideally four—but no fewer than two—weeks before a defense takes place. Any DAs received within two weeks of a defense will be rejected, and the defense will have to be rescheduled. When a student is ready to schedule their dissertation and defense, they are encouraged to work with the ADAA for support with the GSAS policies and procedures.

2.3.7.3 Dissertation Defense Administrative Steps

- With your thesis faculty advisor, select the five-member dissertation defense committee;
    - Three of the members are the Dissertation Defense Moderator, Dissertation Advisor, and Third Examiner, who will be departmental examiners from this List of Approved Doctoral Dissertation Advisors;
    - At least one (but preferably two) of the five must be an outside examiner;

- Schedule a defense date/time with the defense committee
- Reserve a room in the Department of Statistics (your home department) for the in-person[3] defense exam with ADAA, Cindy Meekins at cam2362@columbia.edu
- Complete the Application for the Dissertation Defense form, which includes acquiring your faculty advisor's signature.
    - Submit the DA (with your defense advisor's signature) to ADAA Cindy Meekins at cam2362@columbia.edu four weeks but no later than two weeks prior to the defense date.
    - The ADAA will acquire the signature of the DGS, and send the DA to GSAS.

2.3.7.4 Dissertation Defense Distribution

The next administrative steps are to distribute (the Distribution) final copies of your dissertation to your five-member dissertation defense committee at least two weeks before the scheduled defense. The defense must take place within two months (60 days) after distribution. Register for the semester in which distribution takes place (unless scheduled in the summer);

2.3.7.5 Dissertation Defense Voting Sheet (VS)

The dissertation defense is a milestone ideally reached with all five members of a student's dissertation committee present. When a committee member can only participate from afar, an accommodation may be made by employing audio or video conferencing during the defense. A ***maximum of two members of the dissertation defense committee may participate remotely***, but the dissertation defense moderator and the advisor must be present at the defense.

Once the two-hour dissertation and defense is complete, the committee makes its decision on the defense and votes on the outcome. The dissertation defense moderator will inform the candidate of the committee's determination, and provide further instructions.

After the vote has been recorded on the Voting Sheet, the dissertation defense moderator will need to save the Voting Sheet as a PDF and email it to the ADAA, Cindy Meekins, who will immediately email the Voting Sheet to GSAS as soon as possible. The department is responsible for emailing the Voting Sheet to the GSAS Dissertation Office on the same day as the defense, or in the case of a late-afternoon defense, no later than the following business day. Under no circumstance should the voting sheet be given to the student.

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[3] Per GSAS policy, a maximum of two members of the dissertation defense committee may participate remotely, but the dissertation defense moderator and the advisor must be present at the defense.

The dissertation defense moderator will register the need for remote participation on the GSAS Application for the dissertation defense, and will sign the voting sheet on the absent member's behalf after the defense. Committee members who must participate remotely are requested to submit comments, questions, and a provisional vote in advance so that the defense exercise may proceed in the event technical difficulties are encountered during the proceedings.

2.3.7.6 Dissertation Approval Card (AC)

Approval to deposit is done using the GSAS AC, which will be given to you upon passing your defense. After your revisions are approved, the card must be signed by your advisor, and emailed to ADAA Cindy Meekins at cam2362@columbia.edu, who will acquire the signature of the DGS for you, and send it to GSAS. The AC is the final step before depositing your dissertation.

2.3.7.7 Dissertation Deposit

Upon a successful defense of the dissertation, students will be given by GSAS a fixed amount of time to finalize their dissertation for deposit. The amount of time for this final stage of dissertation revision depends on how much revision was recommended by the defense committee.

Once a student finishes all the recommended revision, they should obtain approval to deposit their dissertation from their dissertation advisor. The completed Approval Card allows the student to deposit their dissertation with GSAS. This is the final step to earning the PhD degree. More detailed information regarding the deposit is available through the Deposit Gateway. Students are strongly encouraged to review the FAQs about the electronic deposit system.

2.3.7.8 Doctoral Graduation Ceremonies

The GSAS PhD Convocation and University Commencement ceremonies, held every May, recognize graduates from the October, February, and May degree conferrals. The Department of Statistics hosts an annual PhD Graduating Student Reception every May, as well (no registration is necessary). We look forward to celebrating your accomplishment with you, but please note that you are not required to attend the departmental reception or the graduation ceremonies to receive your degree.

2.4 Seminar Requirements

2.4.1 Department Seminars

Students are required to register for and attend one of the Departmental Seminar courses every semester. The seminar requirement allows students the flexibility to choose from four seminar options:

- Statistics Seminar Series (GR9201)
- Seminar in Probability Theory (GR9301)
- Seminar in Applied Probability and Risk (GR9302)
- Seminar in Mathematical Finance (GR9303)

Please also review information on the Seminars in Quantitative Research at Columbia.

Students should refrain from using their laptops during the seminar. To get the most out of the seminar experience, students are advised to read about the speaker's research before each seminar and sign up to meet or have lunch with the speaker. The weekly coffee breaks before the seminar and receptions after the seminars also offer opportunities for interacting with the speakers and other seminar attendants.

Students are expected to attend at least 50% of the seminar talks during the semester they are registered, and students who passed their Qualifying Exams are required to present once each year, in either the student seminar or the Minghui Conference. Those students who do not meet this requirement will have lower priority in receiving conference travel funding.

Details for locations/speakers/times/etc are available on the Departmental calendar. There are also several other seminars on quantitative research at Columbia that may be of interest.

2.4.2 Student Seminars and Presentation Requirement

In addition to the above department seminars, students should look forward to actively participating and organizing their own seminar series as a way to build a stimulating research culture and a platform for sharpening presentation skills. Third year students and beyond **are required** to present a talk for the Minghui Conference and/or in the student seminar.

The student seminar provides an opportunity for students to meet and discuss their own research ideas and developments. The free exchange of ideas often generates other new ideas and suggestions to the presenting students. Sometimes, professors and visitors are invited to talk about their research interests and challenge students with open problems. Such exchanges can be helpful in deciding on a research topic and advisor. The schedule of speakers, which is organized solely by the students, is circulated to the PhD Students via email. Lunch is provided for all student seminar meetings, as they are typically scheduled at noon.

2.5 Professional Development Opportunities

2.5.1 Statistical Practicum Options

To gain practical and applied research skills, as an experience to broaden their statistical research training, students are required to participate in **at least one semester** of practical experiences. Students can choose from several options to fulfill this requirement:

- Enroll in the Statistical Consulting course GR6105. In this course, you will receive hands-on consulting experience with scientists around Columbia.
- Completing a summer internship, approved by the DGS as appropriate for the *Practicum* requirement.
- Take the class GR8307 (Statistical Communication & Graphics) for credit.
- Do a research immersion in a Columbia research group/lab outside the department and distinct from the student's intended dissertation topic, approved by the DGS as appropriate for the *Practicum* requirement.

- During the research immersion, the student is expected to participate in the research activities of the host group/lab, develop a small research project in discussion with the group/lab's PI, and prepare a research report or publication draft at the end of the immersion.
- It is anticipated that research collaboration, when mutually desired, shall continue after the research immersion and could ideally become part of the student's dissertation work.
- Interested students are encouraged to do such a research immersion in their second year. The discussion of potential research immersion could take place during the summer before the second year. While the students are more than welcome to reach out to the research group/lab for a potential match, the department will maintain a list of research groups/labs that are willing to host doctoral students.

2.5.2 Summer Opportunities

The academic year begins in early September and runs to the middle of May. PhD Students are free from formal responsibilities in summer; however, summer is an excellent time to work on research, study for the Qualifying Exams, and participate in an internship. Additionally, each June, the Department invites two renowned researchers in statistics and probability to deliver intensive summer courses. The courses run across approximately two weeks. (See Summer Topics Courses for more information on previous summer course offerings.)

2.5.2.1 Summer Opportunities Funding

Departmental summer funding is intended to encourage students to participate in summer research and coursework. For academic year 2025-2026, with a combination of GSAS and Departmental funds, there is up to $12,730 available in summer funding for each PhD Student. Below is the breakdown of of eligibility for summer funds:

- $6,365 provided unconditionally by GSAS
- $2,365 offered by the Department
  - Goes to students who attend and successfully complete at least one of the two summer courses
- $4,000 offered by the Department
  - Goes to students who participate in summer research and/or Qualifying Exam preparation

TA and teaching opportunities are also available for Departmental summer session courses. For more information about summer teaching opportunities, please contact the DAAF, Dood Kalicharan at dk@stat.columbia.edu.

2.5.3 Summer Internship Opportunities

PhD Students may elect to participate in [4]paid summer internship opportunities. Internships are a form of experiential learning that integrates academic knowledge and theory from the classroom with practical applications and skills development in professional environments. Internships provide resources, equipment, facilities, and access to work closely with experienced and esteemed researchers, though exceptions can be discussed with the DGS. Internships should offer well-defined learning objectives, professional supervision, and opportunities for reflection. There is a great deal of flexibility inherently built into internship considerations. We encourage students to communicate their internship interests, and to welcome faculty feedback in selecting optimal opportunities.

Requirements
The internship or practicum is a degree requirement for all students in the Statistics PhD Program. The internship is required for an elective course that counts toward fulfilling your degree requirements. The elective course must be designed specifically for a practical training experience. It must earn credit commensurate with other elective courses that count toward the degree. Per GSAS, in the Department of Statistics, CPT has been established as an elective course that counts toward the degree requirement.

Of note, per the Department of Statistics and the GSAS Committee on Instruction, Statistics PhD students are eligible to complete ***no more than 2 total summer internships***. PhD students in years one through three must request approval from the Department Chair and/or the DGS to participate in summer internships.

2.5.3.1 Summer Curricular Practical Training (CPT)

The International Student and Scholars Office (ISSO) supports CPT authorization for currently-enrolled, full-time international students to participate in off-campus employment within the United States. These employment/internship experiences are considered an integral part of the PhD Program in Statistics.

Students interested in summer internships are encouraged to seek out faculty advisor approval for an internship prior to applying for CPT. International students approved for summer internships must register for STAT GR8292 Statistics Internship for summer semester. PhD students in the Department of Statistics are permitted to participate in up to 2 summer internships.

Because CPT involves visa status, we ask that all international PhD Students contact the ADAA, Cindy Meekins and ISSO for detailed support for their CPT Applications.

[4] Students who participate in paid summer internships will typically forgo Departmental summer funding, though exceptions can be discussed with the DGS.

2.6 Graduate Recitation Leaders (RLs) and Teaching Assistants (TAs)

2.6.1 Departmental Instructional Requirements for Doctoral Students

Each semester, Statistics Program PhD students serve as an RL or TA for one course. PhD Students are selected to provide teaching support to designated faculty for specific courses, unless on an external fellowship or RAship. To be fully exempted from RL or TA responsibilities, external funding must cover more than 80% of the stipend and the full tuition. *(See Appendix F: Roles and Responsibilities of Recitation Leaders, Teaching Assistants and Class Assistants)*

2.6.2.1 RL and TA Onboarding and Orientation

RLs and TAs are onboarded through the Departmental DAAF, Dood Kalicharan. Doctoral students who are appointed as ***RLs and TAs are appointed from September 1 through May 31[5] of an academic year. Per the RL and TA position offer of employment letters, RLs and TAs must be available to support the course instructors during the duration of this appointment.*** Some RLs and TAs must attend a mandatory RL and TA Onboarding and Orientation Session before the position start date.

2.6.2.2 RLs, TAs and Class Assistants

RLs, TAs and Class Assistants under the direction of course instructors, to provide support for the course(s) they are assigned. Their primary responsibilities are to follow the lead of the course instructor in delivering the learning outcomes of the course, according to the vision and plan set by the course instructor, and to carry out the tasks the course instructor assigns to them.

Below, we list the general responsibilities of RLs and TAs. Specific courses may have responsibilities for RLs, TAs and/or Class Assistants that are slightly different from the lists below due to factors such as the nature of instruction, class sizes, forms of assignments, etc. RLs and TAs are strongly encouraged to clarify their responsibilities with the course instructor as early as possible at the very beginning of the semester and to keep regular communication with the course instructor, work professionally in response to the needs of the course, complete tasks before deadlines, and collaborate with everyone on the instructional team. ***Of note, the average weekly time commitments for RLs and TAs have been carefully reviewed to ensure the average weekly workload for both roles is equivalent, and is not in excess of 10 hours per week***.

[5] PhD student RL and TA appointments from September 1 through May 31 of each academic year means that RLs and TAs are expected to fulfill the responsibilities of their respective roles throughout the entirety of the academic year, regardless of typically recognized business and/or weekend hours, University breaks, personal and/or professional travel, etc. RLs and TAs who absent themselves from their responsibilities without course instructor and departmental approval may be placed on academic probation for failure to meet the GSAS-defined satisfactory academic progress, and the department-defined good standing in the PhD Program.

2.6.2.3 RL Roles (Appointment is September 1 through May 31)

RLs work together with Class Assistants to provide support for specific courses. (RLs are Statistics PhD Students, and may be some qualified master's students. Class Assistants are qualified undergraduate and masters students who have performed well in the course, or a similar course.) RLs provide operational and instructional support to designated faculty for specific courses, and are expected to take responsibility for their assigned course and related tasks.

2.6.2.3.1 RL Responsibilities

- Support RL-assigned course instructors from September 1 through May 31
    - Appointments include support during winter and spring breaks, as needed
    - Late arrivals, early departures, absences (for travel) and vacation days requested of RLs require ***early and prior approval*** from the course instructor(s) and from the Department
        - Please see ADAA, Cindy Meekins for more information
- Prepare and present weekly lesson lectures in support of the main course
- Provide managerial oversight of Class Assistants; includes providing grading guidance, solutions, grading rubrics
    - Serve as the primary conduit between the Class Assistants and the Instructor
- Prepare homework solutions, projects, and exams
- Host a ***minimum of 2 hours per week*** for office hours
    - Discuss Office Hours expectations, and best practices with course instructor
    - Per the University, all RL office hours are ***required to be in-person***
    - Per the Department, all office hours are ***required to be held on campus***
- Proctor exams, and ***grade midterms and final exams***
- Release assignment grades posted by Class Assistants in Canvas
    - Only RLs can change grades in Canvas
- Remain in regular contact with faculty regarding student issues/concerns
- Respond to faculty and student emails and requests within 24 hours
    - This includes emails and requests received on evenings and weekends
- Fill in on Class Assistant tasks when there is a high volume of work and high time pressure
- Support the courses by completing other tasks assigned by the instructor
- Report all suspected violations of academic integrity to the course instructor
- ***An average*** commitment of 10 hours per week, which will vary depending upon the week of the semester; will also vary each semester based on the course

2.6.2.4 TA Roles (Appointment is September 1 through May 31)

TAs work together with Class Assistants to provide support for specific courses. (TAs are Statistics PhD Students, and some qualified master's students. Class Assistants are qualified undergraduate and masters students who have performed well in the course, or a similar course.) TAs provide operational support to designated faculty for specific courses, and are expected to take responsibility for their assigned course and related tasks.

2.6.2.4.1 TA Responsibilities

- Support TA-assigned faculty instructors from September 1 through May 31
    - Appointments include support during winter and spring breaks, as needed
    - Late arrivals, early departures, absences (for travel) and vacation days requested of RLs require ***early and prior approval*** from the faculty instructor(s) and from the Department
        - Please see ADAA, Cindy Meekins for more information
- Provide managerial oversight of Class Assistants
    - Serve as the primary conduit between the Class Assistants and the Instructor
        - Oversee that Class Assistants grade in a timely fashion
        - Provide Class Assistants with grading guidance, solutions and grading rubrics
        - Require Class Assistants to grade homework assignments and any non-exam materials
            - Note that Class Assistants are not permitted to grade midterms or final exams
                - Exceptions may be made by Chair or DGS approval (for service-level courses with high enrollment)
        - Ensure that Class Assistants upload student assignment grades in Canvas
        - Remain in contact with Class Assistants on regular basis (e.g., weekly or biweekly)
        - Schedule Class Assistants to help proctor exams, as needed
        - Ensure that Class Assistants do not interact with students enrolled in the course without prior approval from the TA or Instructor (Class Assistant information, name and uni, should be anonymous from the grading process)
- Prepare homework solutions, projects and exams
- Host ***a minimum of 2 hours per week*** of office hours
    - Discuss office hours expectations, and how best to use office hours with Instructor
    - Per the University, all RL office hours are ***required to be in-person***
    - Per the Department, all office hours are ***required to be held on campus***
- Proctor exams, and grade midterms and final exams
- Release assignment grades posted in Canvas
    - Only TAs can change grades in Canvas
- Help with lectures, at times
- Remain in regular contact with faculty regarding student issues/concerns
- Respond to faculty and student emails and requests ***within 24 hours***
    - This includes emails and requests received on evenings and weekends
- Fill in on Class Assistant tasks when there is a high volume of work and high time pressure
- When assigned to TA for a course where the course material is new, keep abreast of material covered in class and textbook

- Report all suspected violations of academic integrity to the course instructor
- Complete other tasks assigned by the instructor
- ***An average*** commitment of 10 hours per week per semester, which will vary depending upon the week of the semester; will also vary each semester based on the course and Instructor

2.6.2.5 Department Guidelines on Academic Integrity

2.6.2.5.1 Course Instructors, Recitation Leaders and Teaching Assistants

The guidelines herein are intended for all courses in the Department of Statistics and are meant to be implemented by the course instructors[6]. Teaching Assistants should also be familiar with these guidelines and provide assistance as instructed by the course instructors. Teaching assistants are often the first to spot academic integrity issues, and must report these issues to the course instructors as soon as possible. The course instructors should report to the Department Chair and the relevant Program Director, seek assistance from ADAA, Cindy Meekins, and then report to the Center for Student Success and Intervention (CSSI) and the dean's office of the school(s) of the student(s) of concern. *(See Appendix G: Department Guidelines on Academic Integrity)*

2.6.2.5.2 The University on Academic Integrity

While the Columbia University Board of Trustees holds decisive authority on student discipline, the Deans of the schools and their designee(s) establish standards of behavior for their students, and define procedures by which discipline will be administered. Ultimately, the University's CSSI is responsible for defining violations of academic integrity, and reviewing and managing the adjudication process for all academic integrity violation referrals.

2.6.2.5.3 The Department of Statistics on Academic Integrity

The Department fully supports the Faculty Statement on Academic Integrity. The Department recommends that faculty adhere to Best Practices for Faculty, prepared by an *Academic Integrity Working Group* that consists of Columbia faculty and administrative support units to help avoid incidents of academic misconduct by students.

2.6.2.5.4 Reporting and Handling Potential Academic Misconduct

It is Departmental policy, and in line with University directives, that responses to academic misconduct are determined by the University's CSSI. Here is the appropriate protocol to follow:

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[6] *Graduate students who are instructors on record for undergraduate courses are supervised by the department's Director of Undergraduate Studies. A training session with DUS is required before such instructor appointments can be processed. For first-time graduate student instructors, DUS should be added as a second instructor. DUS should review the syllabus before the start of the course and check in with graduate student instructors at least three times during the course, such as after the midterm, before the final exam, and before final grades are submitted. This ensures that the Department applies supervision and oversight over our graduate student instructors as expected by GSAS policies and the schools these courses serve.*

- **Teaching Assistants should report possible misconduct incidents to the course instructor.**
- **Course instructors should report possible incidents to the Department Chair.**

Responses to misconduct, including assessing penalties for cheating, should only be taken with guidance stemming from investigation and determination by the CSSI. If you need assistance with this process or expected protocols, please request assistance from ADAA, Cindy Meekins.

2.6.2.5.5 FAQs on the Academic Misconduct Process for Faculty

For more information on University policies and processes for violations of academic integrity, please see the CSSI website. More details for answers to the the FAQs below may be found on the CSSI Academic Misconduct Faculty FAQ[7] page.

- **What to report?**
  - *Well-founded suspicions of academic misconduct*
- **Why report?**
  - *Helps students to reason through ethical situations as part of the learning process, and promotes consistency and fairness, and identifies students who are repeat offenders.*
- **How to report?**
  - *Report alleged violations on the CSSI Academic Integrity Violation Referral Form*
- **How will reporting this incident impact the student?**
  - *Students found responsible for misconduct will be subject to appropriate sanctions, and will receive educational support on academic integrity.*
- **What if I don't want to report an incident or I am unsure if I should?**
  - *Contact CSSI to walk you through the Dean's Discipline process and possible outcomes*
- **Do I have to meet with the student if I am reporting them?**
  - *Faculty should meet with the alleged student to notify them that a referral will be made to CSSI prior to reporting the incident, and include the student response in the referral*
- **Do I have to attend the hearing?**
  - *Faculty members do not attend the hearing*
- **How is an outcome determined?**
  - *The standard of proof to determine if responsibility is a preponderance of the evidence.*
- **Will I be informed of the outcome?**
  - *CSSI will communicate with the faculty member once this process is concluded.*
- **What if the student is found not responsible?**
  - *This does not mean they did not violate, but rather, there was not enough proof.*
- **How do I grade the student?**
  - *Grading is determined by course instructors independent of decisions rendered by CSSI. Faculty are encouraged to consult with Program Directors.*

[7] Responses adapted from *CSSI Academic Misconduct Faculty FAQs.*

- **Who do I contact for questions?**
    - Phone: (212) 854-6872; Email: cssi@columbia.edu

2.6.2.5.6 Best Practices for Syllabi

The Department requests that all instructors include a statement on academic integrity on all course syllabi.

- **Sample Statements of Academic Conduct for Syllabi**
    - GSAS and the Columbia University Undergraduate Colleges offer Sample Statements on Academic Integrity for syllabi.
        - Barnard College, Columbia College/SEAS, and College of General Studies sample statements of academic integrity for undergraduate courses
        - GSAS Statement on Academic Integrity for MA/PhD courses
    - **[Example Statement]** Columbia's intellectual community relies on academic integrity and responsibility as the cornerstone of its work. Students are expected to exhibit the highest level of personal and academic honesty as they engage in this class. In practical terms, [note: edit the following statements according to your class] you must be responsible for the full and accurate attribution of the ideas of others in all of your research papers and projects; you must be honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet source. Failure to observe these rules of conduct will have serious academic consequences, up to and including dismissal from the university. If a faculty member suspects a breach of academic honesty, appropriate investigative and disciplinary action will be taken following Dean's Discipline procedures.
    - We encourage faculty to define and provide examples of what students are and are not permitted for quizzes, tests and exams, homeworks and course projects. For more details, see the Preventing Academic Dishonesty: Establishing Standards for Academic Honesty drop down for suggestions on the Best Practices for Faculty page.

2.6.2.5.7 Best Practices for Exams

- Include an ***explicit statement on exam conditions*** with every exam
- Reserve rooms with enough seats *with a writing space*[8] to space students apart (reservations can be requested through the department; contact ADAA, Cindy Meekins.)
    - Request exam rooms be booked next to each other, if possible
- Implement assigned seating for exams, and/or consider distributing different versions of the exam(s)
- Check student identification (as needed)
- Notify students in advance and at the start of the exam of ***test taking expectations and protocols***

[8] Some classrooms have chairs without a writing table. While these chairs are acceptable for lectures, they are problematic for exams. Instructors should reserve additional classrooms for exams.

    - Students should have only faculty-approved items on or around their desks. These items should be specified in the syllabus and on the front page of the exam paper as part of the *exam conditions*. For example,
        - Faculty will determine what students may keep on their desks, such as calculators, pencils, erasers, scratch paper/blue books distributed by the course instructor or exam proctors, (calculators on phones are NOT permitted)
        - All electronics, phones, headsets, earbuds, sunglasses, hats, watches, food, drinks, books, scratch paper, backpacks, extraneous or unworn clothing, and accessories should be stowed away from the desks.
        - Faculty may ask students to leave all belongings in the front of the classroom (with phones silenced).
        - Cheat/information sheets are not permitted unless arranged in advance with faculty approval.
        - Students are expected to keep their faces visible at all times (except for medical face masks)
            - No dark glasses, no hats, no hoodies, etc.
- Exams must remain stapled (no restapling)
- Students must be in their seats at the start of the exam
- No reentry after an exit; no breaks without ODS documentation
- Include the rules for exams in the syllabus, and repeat them to students prior to exams in lecture, in practice exam sessions, and by notices and/or emails
- Include an affirmation page, which must be signed by the student, stating that they read and understand the exam conditions, the work on the exam is theirs alone, and they will not provide assistance to, or share the information with, anyone who will take an exam for the same course.
- Review the Preventing Academic Dishonesty: Establishing Standards for Academic Honesty drop down for suggestions for Best Practices for Faculty, which includes strategies for writing exams.

2.6.2.5.8 Best Practices for Proctoring

- **Proctor suspicion of academic violation(s) must be reported to course instructor(s)**
- Instruct all proctors to walk around the classroom and keep eyes on students during the entirety of exam periods. (Recitation Leaders and Teaching Assistants are responsible for proctoring exams; Class Assistants can also support proctoring needs.)
- Before each exam, inform and/or remind Recitation Leaders (RLs) and Teaching Assistants (TAs) of how to handle suspected academic violations.
    - Quiet verbal warnings (during the exam) can be given to students who violate exam conditions.
    - Some faculty prefer that the RLs and TAs draft a brief note to the course instructor during the exam period.
    - When applicable and possible, students could be asked to move to different seats

- Provide accommodations determined by the Columbia Office of Disability Services (ODS) and the Barnard Center for Accessibility Resources and Disability Services (CARDS), as long as they do not undermine the academic integrity of the exam and/or course. When there are concerns about these accommodations, reach out to ADAA, Cindy Meekins for assistance.
    - Direct students who request accommodations to ODS or CARDS.
    - Plan ODS/CARDS accommodations in advance, as needed (such as for extra time, special testing locations, etc.)

2.6.2.5.9 Best Practices for Homework

- Expectations and policies regarding collaboration, and/or the use of AI and other resources, online or otherwise, should be included on syllabi and explained to students in lectures.
- Inform RLs and TAs about faculty expectations and policies regarding collaboration, etc., and how to administer faculty expectations and policies.
- Guide RLs and TAs on how to report concerns to the course instructor, and on uniform application of the expectations and policies.
- Clarify on syllabi and in class what are permitted collaborations for homework, projects, labs, etc, as suggested in the *Preventing Academic Dishonesty: Establishing Standards for Academic Honesty* drop down on the Best Practices for Faculty page.

2.6.3 RL, TA and Class Assistant Ombudsperson

Should RLs, TAs and/or Class Assistants have any concerns regarding their responsibilities, or reporting with regard to student concerns, and/or any confidential concerns, please reach out to the designated Class Assistant and Graduate Teaching Assistant Ombudsperson, Cindy Meekins at cam2362@columbia.edu. The designated Ombudsperson will provide support and serve as a resource and if need be, a liaison, on behalf of the RL, TA or Class Assistant.

2.7 International Students

2.7.1 Resources for International Students

The Columbia University International Student Services (ISSO) advisers are here to support all international students.

ISSO Contacts

- Call ISSO at 212-854-3587 to speak to someone urgently
- Email isso@columbia.edu to set up a same-day appointment
    - ISSO Hours
        - Saturday and Sunday 9 AM - 4 PM
        - Monday - Friday, 8 AM - 7PM
- For emergencies, call Public Safety, 24 hours a day at 212-854-5555

Columbia's Office of University Life has compiled a list of resources for the community where you can find information on doxing, international student support, legal assistance, and health and

counseling services. *(See Appendix H: Columbia Resources for International Student Awareness)*

2.7.2 American Language Program

Non-native English speakers admitted to the Graduate School of Arts and Sciences may be asked to take the ALP Essay Exam administered by the Columbia University American Language Program and may, depending on the results of this test, be required to take English language courses in addition to ordinary degree coursework.

Non-native English speakers who will be teaching fellows may also be asked to take the OWL/TOP test of spoken English, administered by the American Language Program, before beginning their teaching duties.

2.7.3 International Students and Employment: Optional Practical Training

The ISSO supports international PhD Students who are interested in pursuing part-time or full-time employment through Optional Practical Training (OPT) either during or after they have successfully completed their PhD Program requirements. There are two types of OPT:

- Those students pursuing OPT *during* their PhD Program must apply for Pre-Completion OPT
- Those students who are pursuing *after* their PhD Program (who are all-but-dissertation (ABD) or who have completed the PhD Program entirely) must apply for Post-Completion OPT

For those who wish to seek employment in the United States prior to or after graduation to gain practical experience and training, we suggest that you connect with the ISSO for more information and careful instructions on how to manage your visa status and the required documents for OPT.

3. PhD Program Student Resources

A doctoral program in the Arts and Sciences is an immersive, full-time enterprise, in which students participate fully in the academic and intellectual life on campus, taking courses, conducting research in labs and libraries, teaching, attending departmental and school events, and developing a professional network within and beyond their department.

3.1 PhD Courses

Spring 2026 Doctoral-Level Courses
For the most updated information on Statistics PhD courses, please go to Vergil.

Professor Yuqi Gu
GR6102 Applied Statistics II
Course Description

This is a first-year PhD course mainly on statistical machine learning. The topics covered include Linear and nonlinear dimension reduction, Data-driven and model-based classification methods, Data-driven and model-based clustering methods, Graphical models, Latent variable models, Bayesian computation, and Bayesian hierarchical modeling.

Professor Christopher Harshaw
GR6104 Computational Statistics
Course Description
This course is an introduction to computational statistics at the PhD level. Students will be introduced to a broad range of computational methods which are used in statistical research and practice. Topics include programming hygiene, scalable and parallel programming, numerical linear algebra, continuous optimization and discrete algorithms & data structures.

Professor Ashley Datta
GR6105 Statistical Consulting
Course Description
Prerequisites: STAT GR6102 or instructor permission. The Department's doctoral student consulting practicum. Students undertake pro bono consulting activities for Columbia community researchers under the tutelage of a faculty mentor.

Professor Zhiliang Ying
GR6202 Statistical Inference Theory II
Course Description
TBD

Professor Marcel Nutz
GR6302 Probability Theory II
Course Description
Prerequisites: STAT GR6301. Conditional distributions and expectations. Martingales; inequalities, convergence and closure properties, optimal stopping theorems, Burkholder-Gundy inequalities, Doob-Meyer decomposition, stochastic integration, Ito's rule. Brownian motion: construction, invariance principles and random walks, study of sample paths, martingale representation results Girsanov Theorem. The heat equation, Feynman-Kac formula. Dirichlet problem, connections with potential theory. Introduction to Markov processes: semigroups and infinitesimal generators, diffusions, stochastic differential equations.

Professor David Blei
GR8101 Seminar in Theoretical Statistics
Course Description
This seminar explores the principle of invariance and its role in causal reasoning. We will study algorithms that connect invariance to causality, how these ideas extend to representation learning, and examine applications across the sciences and social sciences. Some subjects will include invariant causal prediction, causal representation learning, robust learning from multiple environments, and empirical Bayes.

Professor Konstantinos Fokianos
GR8301 Topics in Probability Theory
Course Description
The objective of this course is to introduce some potential research topics in time series analysis. The major theme of this course will be on studying multivariate time series, some of which is high-dimensional. We will discuss useful tools for analyzing time series for which the data may have multiple measurements for which temporal and cross-sectional dependencies can be confounding. The goal is to identify a better understanding of the dynamic relationship between variables that can improve accuracy of prediction.

This course will go over standard analysis of low-dimensional time series data to provide some foundation. Topics include general concepts, fitting of VARMA models, multivariate count time series, principal components, factor analysis and classification/clustering. Based on this background we will discuss estimation for high-dimensional time series data. In doing so we will consider LASSO estimators and its variants. In addition, we will also explore modern machine learning techniques that can be used for time series analysis.

Professors Marco Avella Medina & Alberto Gonzalez Sanz
GR9201 Seminar in Theoretical Statistics
Course Description
Departmental colloquium in statistics.

Professor Ivan Corwin
GR9301 Seminar in Probability Theory
Course Description
Departmental colloquium in probability theory.

Professors Chenyang Zhong, Victor De la Pena, Graeme Baker
GR9302 Seminar in Applied Probability & Risk
Course Description
A colloquium in applied probability and risk.

Professors Marcel F Nutz and Steven Campbell
GR9303 Seminar in Mathematical Finance
Course Description
A colloquium on topics in mathematical finance.

3.2 Academic Research Activities

3.2.1 Minghui Yu Memorial Conference

Every April since 2009, our doctoral students organize the Minghui Yu Memorial Conference. The conference features talks by senior PhD Students (3rd, 4th and 5th year) and one keynote speaker. It is a great opportunity to practice presentation skills and learn about exciting ongoing research in the department.

3.2.2 Summer Topics Courses

Every summer, the department invites up to two eminent statisticians/probabilists to teach short special topics courses to PhD Students that usually run for one to two weeks. These short courses allow students to engage with eminent researchers to learn and discuss advanced topics. Participating students are required to register for one of the two courses in SSOL. Recent summer topics courses include:

- **Summer 2026**
  - Kato Kengo, Department of Statistics and Data Science, Cornell University
    GR8201 (001) - Topics in Theoretical Statistics
    "High-Dimensional Central Limit Theorems and Associated Bootstrap Methods"
- **Summer 2025**
  - Gabor Lugosi, Department of Economics, Pompeu Fabra University, Barcelona
    GR8201 (001) - Topics in Theoretical Statistics
    "Lectures in Combinatorial Statistics"
  - David Dunson, Department of Statistical Science, Duke University
    GR8201 (002) - Topics in Theoretical Statistics
    "Probabilistic Learning of Latent Structure"
- **Summer 2024**
  - Aaditya Ramdas, Department of Statistics, Carnegie Mellon University
    GR8201 (001) - Topics in Theoretical Statistics
    "Game-Theoretic Statistics and Safe Anytime-Valid Inference"
  - Rina Foygel Barber, Department of Statistics, University of Chicago
    GR8201 (002) - Topics in Theoretical Statistics
    "An Introduction to Conformal Prediction and Distribution-Free Inference"
- **Summer 2023**
  - Fan Li, Professor, Department of Statistical Science, Duke University
    GR8201 (001) – Topics in Theoretical Statistics
    "Causal Inference"
  - Arthur Gretton, Professor, University College London
    GR8201 (002) – Topics in Theoretical Statistics
    "Generative Models Using Kernel and Neural Divergence Measures"
- **Summer 2022**
  - Richard Samworth, Professor, University of Cambridge
    GR8201 – Topics in Theoretical Statistics
    "Nonparametric Inference Under Shape Constraints"

3.2.3 Annual Focus Series

The Department of Statistics features annual focused workshops or short courses featuring Columbia University Department of Statistics faculty, and research speakers from around the world. The annual Focus Series consists of events devoted to cutting-edge topics in modern

statistics. Below are the previous three academic years of the Annual Focus Series guest researchers and links to details regarding those workshops.

- **Academic Year 2024-2025**
  - Statistics and Optimal Transport Workshop
  - Optimization and Statistical Learning Workshop
- **Academic Year 2023-2024**
  - Robust Statistics and Privacy Workshop
  - Psychometrics Workshop
- **Academic Year 2022-2023**
  - Extremes and Time Series: A Workshop on the Occasion of Richard Davis' 70 Birthday
  - Statistical Foundations and Applications of Machine Learning and AI "Symposium to honor Professor Shaw-Hwa Lo's 70th birthday and his collaboration with Professor Herman Chernoff
- **Academic Year 2020-2021**
  - Pfizer/ASA/Columbia University Symposium on AI in Clinical Drug Development

3.2.4 Research Centers

Columbia University has a long and distinguished history in the discovery of knowledge. This work happens through fostering creative endeavors and promoting an environment that sustains the highest standards of scholarship and learning. Below you will find some of the rich research centers with which the Department of Statistics shares an affiliation.

- Applied Statistics Center
- Center for Applied Probability
- Columbia Population Research Center
- Data Science Institute
- Grossman Center for the Statistics of the Mind
- Herbert Irving Comprehensive Cancer Center
- Herbert and Florence Irving Institute for Cancer Dynamics
- Institute for Social and Economic Research Policy
- Learning the Earth with Artificial Intelligence and Physics (an NSF Science Technology Center)

3.3 Computing Resources

3.3.1 Departmental Resources

Faculty, PhD Students, postdocs, and sponsored visitors in the Department of Statistics have access to a variety of computing resources to aid in their research.

3.3.1.1 Purchasing New Laptops

Every new PhD Student is eligible for a one-time order for a new computer through the Department of Statistics. Students are allotted up to $2,000, and must email the DAAF, Dood Kalicharan at dk@stat.columbia.edu to place the order. Please note that students are eligible for a new laptop/desktop only once during their tenure in the PhD Program. Please notify the department if you do not expect to purchase a laptop in your first year.

3.3.1.2 Research Computing Resources

Please be sure to review the Department of Statistics Computing, Printing, and HPC FAQs for more information on Secure Shell Access, Mac/Linux Users, Cluster Access, and general resources, such as desktop support, printing, statistical software and Columbia University email/Lionmail. Please reach out to the Research Computing Services team for more information and assistance.

3.3.1.3 High-Performance Computing

All the affiliates of the Department of Statistics have access to the departmental allocation at the CUIT High-Performance Computing (HPC) shared clusters: Ginsburg & Terremoto.

3.3.1.3.1 Ginsburg

On the Ginsburg High-Performance Cluster (HPC), the Department of Statistics has dedicated resources including:

- All servers are equipped with Dual Intel Xeon Gold 6226R processors (2.9 GHz):
    - 15 Standard Nodes (192 GB)
    - 5 GPU Nodes with two Nvidia A100 GPU modules each
    - 20TB scratch space
    - 5 year lifetime
        - For access to the departmental allocation on the shared HPC clusters, Ginsburg & Terremoto, please send a request to the Research Computing Service (RCS) team at CUIT.

3.3.1.3.2 Terremoto

On the Terremoto High-Performance Cluster (HPC), the Department of Statistics has dedicated resources including:

- Dell C6420 nodes with dual Intel Xeon Gold 6126 Processor (2.6 GHz)
    - 7 Standard Nodes (192 GB)
    - 2 GPU Nodes with two Nvidia V100 GPU modules each
    - 6TB scratch space
    - 5 year lifetime (ending December 2024)

3.3.2 Columbia University Information Technology Resources (CUIT)

3.3.2.1 CUIT Academic Software

CUIT has many downloadable software resources available to help students in and outside of the classroom. Below you will find some of the software that will support your academic and TAing needs, such as Microsoft Office, Canvas Mobile, antimalware, and scientific software, as well as other other options can be downloaded from CUIT Student IT Resources page with a Columbia UNI. There you will find information on free downloadable software, printing, labs and classrooms, as well as an abundance of useful CUIT Services, such as Zoom, Turnitin, Listserv and Google Groups, Panopto and more.

3.3.2.2 CUIT Research Software

CUIT also makes available four types of downloadable software that may be useful in supporting some of your research needs. Students interested in acquiring software must make this request to the Statistics Department DAAF, Dood Kalicharan, (dk@stat.columbia.edu) who will provide next steps and assist with funding for these requests. In some instances, software requests may have to be covered by the student with some potential support from the faculty advisor.

3.3.2.3 CUIT Research Computing Training and Workshops

CUIT welcomes the sharing of knowledge and information with researchers at Columbia through workshops, trainings, webinars, bootcamps, and information sessions.The Research and Computing Training and Workshops web page includes a very helpful and regularly updated calendar of available upcoming research computing events around Columbia. Visit their website to learn more upcoming training events from Research Computing Services (RSC), research computing events around Columbia, a video library of previous events on various topics, industry webinars, and online tutorials using external resources.

3.3.2.4 CUIT Research Computing Services

Research Computing Services (RCS) is a team within CUIT's Research Services Department that is responsible for providing technology resources to support Columbia's researchers, and to support the University's mission to be a leading driver of research, innovation and the advancement of knowledge.

The Research Computing Services team hosts a number of workshops to help you get the most out of our high performance computing (HPC) clusters. Additionally, the HPC engineers hold an Open Lab the first Monday of every month for those who have unique questions. Review the RCS's service portfolio and workshop/training opportunities to learn more about available events and services. Additionally, the HPC and RCS teams offer a series of targeted training sessions to help Columbia researchers get the most out of the available research services resources.
The HPC and RCS teams offered a series of targeted training to help Columbia's researchers get the most out of their research services.

3.3.3 Research Computing and Columbia University Libraries

3.3.3.1 CU Libraries and Digital Scholarship Resources

The Digital Scholarship Department of the Columbia University Libraries system is here to provide support to PhD students at every stage of the research lifecycle. Digital Scholarship offers workshops on a very wide range of data and digital scholarship training opportunities, topics, such as scholarly publishing, copyright, and data and digital scholarship training, which includes chatbots and AI, data manipulation, deep learning with MATLAB, video modules on exceptional scholarship with research data, analysis of textual data, and data analysis with observable.

3.3.3.2 CU Libraries Research Consultations

Through the Libraries system, PhD students can schedule research consultations. These consultations are one-on-one appointments lasting up to 60 minutes, in which a librarian who is an expert in their subject will ask questions about your information needs and guide you to the best resources and methods available. Consultations are available remotely via Zoom or phone.

3.3.3.3 CU Libraries: Science and Engineering Library

The Columbia University Libraries also offer a Science and Engineering Library. The Science & Engineering Library focuses on research support for and collections in the fields of chemistry, biology, ecology/evolution/environmental biology, engineering, earth and environmental sciences, physics, astronomy, and psychology. It provides a collaborative environment supporting rapidly expanding interdisciplinary science and engineering research. The library features seating and study spaces for students and researchers.

3.3.3.4 CU Libraries: Foundations for Research Computing Resources

Foundations for Research Computing is an informal training program, designed in response to faculty surveys about what tools and methodologies graduate students should be familiar with, as well as graduate student surveys that asked what supplemental training they would like. This is a University-wide program, administered primarily through Columbia University Libraries, with strong support from CU Information Technology and the Office of the Executive Vice President for Research. The Foundations of Research Computing program provides informal training to Columbia University graduate students to develop fundamental skills for harnessing computation: core languages and libraries, software development tools, best practices, and computational problem-solving. Topics covered are from across the spectrum of beginner to advanced. Beyond training, the Foundations program creates a computational community at Columbia, bringing disparate researchers together with the common thread of computation.

3.3.3.4.1 Python User Group

Aligned with the Foundations for Research Computing program is the Python User Group, a twice-monthly meeting for those using Python in their research or who are curious about the Python programming language. The group presents a workshop or leads a discussion about a specific use case for Python. At the end of the meeting, there will typically be time for collaborative work, questions, or discussion with fellow researchers or practitioners.

3.3.4 GSAS Research Resources

- GSAS Research Toolkit
    - Academic Integrity and Responsible Conduct of Research
    - Human Subjects Research
    - Applying for External Fellowships
    - Internal Fellowships
    - Conducting Research Abroad

3.4 Travel Support Resources

3.4.1 Departmental Conference Travel Support

Attending professional workshops and conferences constitutes an important part of your professional development. The Department of Statistics is proud to support members of the department up to twice per academic year to attend conferences, with priority for students who are invited or sign up to present at top conferences in Statistics and Machine Learning.

The level of financial support available depends on the conference location. The Department supports conference travel for students at the following rates:

- **Each domestic conference up to $1500**
- **Each international conference to Europe, up to $2000**
- **Each international conference to the rest of the world, up to $2500**

3.4.1.1 Departmental Conference Travel: Reimbursable Expenses

- Conference registration fee
- Economy round-trip airfare
- Ground transportation
- Mid-level hotel accommodations
- Basic food and meal costs
    - $40 per day maximum

3.4.1.2 Departmental Conference Travel: Non-Reimbursable Expenses

- Alcohol and alcoholic beverages
- Fees charged by airlines for upgraded seats and/or services
- Excess or overweight baggage fees
- Priority boarding
- In-cabin internet and/or television access
- Self-directed tourism, etc.

If you are unsure as to whether something is reimbursable, please contact Financial Assistant, Anthony Cruz at ac1012@columbia.edu.

3.4.1.3 Departmental Conference Travel: Eligibility

- Student applicants must maintain satisfactory academic progress.
- **Applicants are required to present their research at the conference**
- The conference must be of an academic or professional nature
- The plan to attend the conference has been approved by their research advisor(s)

3.4.1.4 Departmental Conference Travel: Application

To request conference travel support funds, PhD Students can follow these instructions:

- Apply through the Departmental Conference Travel Support Funds Application at least ***30 days prior*** to the conference
- Acquire approval by the DGS ***prior** to* the conference
- **The default requirement is that students are required to present a paper or poster at the conference**
- Provide the application information
    - Name of the faculty advisor
    - Conference name and location and scheduled date(s)
    - Conference website link
    - Name of the title and abstract of your presentation
    - Statement explaining how the conference will contribute to your research
    - Detailed and itemized list of anticipated expenses
    - Students will submit documentation both before traveling to the conference and after returning within 10 days of travel

Students should also seek complementary funding from other sources, which can include the GSAS Conference Matching Travel Fund (available after you have passed your oral exam), and the conference host themselves, which usually has funds available to support student participation. Your advisor may also be a source of funding, although they should be used only to top-up the support provided by the Department.

3.4.2 GSAS Conference Matching Travel Funds

PhD Students who submit a Department of Statistics Conference Support Application, and who have passed the oral exam, are expected to apply to the GSAS Conference Matching Travel Funds, which offers the following support:

- Helps students present papers and/or posters at national and international conferences
- May be used to defray the cost of registration, travel, and lodging
- Will match the funds provided by the Department, up to a maximum of $400

3.4.2.1 GSAS Conference Matching Travel Funds: Eligibility

Students are required to complete the GSAS Conference Matching Travel Funds Application to defray expenses. Below are the GSAS Application eligibility requirements:

- GSAS has a limit of one travel award per academic year (July 1 through June 30)
    - A maximum of two awards during a student's career at Columbia
- The award is not guaranteed
    - Requests are considered on a first-come, first-served basis
    - Students who have not received an award in previous years will have priority consideration
- Applicants must be making satisfactory academic progress, and in years two through seven from their date of first registration in GSAS
- Applicants are asked to present their research at the conference
- The conference should be be of an academic or professional nature

3.4.2.2 GSAS Conference Matching Travel Funds: Application

In order to receive GSAS Conference Matching Travel Funds, students will want to submit the application signed by the DGS indicating the amount of funds the department is providing. The completed form can then be emailed to gsas-studentaffairs@columbia.edu. GSAS application deadlines are as follows:

- July 3 — for conferences held May through August
- November 3 — for conferences held September through December
- March 3 — for conferences held January through April

3.4.3 University Global Travel

Students in the PhD in Statistics Program at Columbia will very likely travel internationally as part of their studies (such as for a conference). Global Travel is dedicated to supporting the health, safety, and security of University travelers engaged in Columbia Travel abroad. This Office assists with pre-departure preparations, including overseeing the requirements of the University's International Travel Planning Policy and working closely with the university's 24/7 emergency assistance provider, International SOS. For more information on international travel, please very carefully review the policies set forth by Columbia University Global Travel.

3.4.4 University International SOS (ISOS)

Columbia University has adopted International SOS (ISOS) as the 24/7 emergency assistance provider for individuals on Columbia Travel. Their worldwide helpdesks can assist with urgent medical issues, security and logistical questions, medical advice, or other concerns and situations that may arise. The University uses the ISOS Global Risk Ratings to fulfill the International Travel Planning Policy (ITPP) pre-departure travel requirements, such as pre-travel itinerary review and trip registration. For more information on International SOS, please very carefully review their services, policies, processes and requirements. Connecting with ISOS prior to global travel is a University requirement, not a University suggestion.

3.5 Teaching Resources

3.5.1 Fellowship Support for Teaching Assistants

All of the students admitted into the PhD Program are supported on a GSAS Fellowship that covers a nine-month period from September to May. There are Teaching Assistant (TA) obligations associated with this fellowship as described in the previous section. It is recommended for students on the fellowship to perform only the work related to their TA responsibilities during this period. The fellowship is renewable for up to five years, provided satisfactory progress is being made. There is no guarantee that the fellowship will be extended beyond a fifth year. (*See Appendix I: Academic Year 2023-2024 Fellowship Support for Doctoral Students in Statistics*)

3.5.2 Center for Teaching and Learning (CTL)

The Center for Teaching and Learning (CTL) supports the professional development of the PhD students with current and/or future teaching responsibilities. The CTL also offers an array of support to graduate students to help them reflect on, improve, and measure their teaching at Columbia. The CTL offers PhD students the opportunity to participate in their Graduate Student Programs and services, which develops a sense of pedagogical agency, interdisciplinary exchange, and peer-driven inquiry that helps prepare them for the future in a variety of academic and professional settings. They also help PhD students develop instructional practices that are learner-centered and inclusive.

Visit the CTL's Calendar of Events for information on upcoming opportunities to connect with CTL. They offer Consultations where PhD students can request in-person support for teaching and learning needs. Some of the training and topics available through CTL include a comprehensive Teaching Orientation, and an excellent Teaching Development Program, information on Mid-Course Reviews, and Teaching Observations. The CTL also offers On-Demand Resources, free online courses through the Online CIRTL Network Opportunities, and Workshops on topics related to teaching, learning and instructional technologies. There is also a CTL Teachers' Lounge and Learning Communities and Lounges both of which serve to introduce interdisciplinary and sequential conversations on teaching and learning topics. Graduate student instructors can also engage with the CTL programs, services, and other professional development opportunities through the Teaching Development Pathways.

We encourage PhD student students to apply for CTL paid fellowships that provide professional development opportunities, in which students are trained and supported by CTL to offer teaching support services to peers.

3.5.4 Textbooks for Teaching Assistants

Teaching Assistants are provided with the required textbooks for all of their TA assigned courses. TAs should see the Departmental Administrator (Janice) for more information on how to access the required textbook(s).The Departmental Administrator will receive the textbook(s) information from faculty, order the course textbook(s), and contact the TA once the Department receives the books. Please note that the TA has the responsibility of returning the textbook(s) at the end of the semester.

3.5.5 Instructional Technologies for Teaching Assistants

TAs can effectively integrate instructional technologies in their teaching practice. Faculty, graduate students, postdocs, and staff can get advice, training, and support to experiment with a rich portfolio of online platforms and digital and media tools to turn classrooms into active spaces for learning. Below are some examples of Instructional Technologies. For more information on resources and guides, please visit the CTL website.

Most commonly used technologies by members of the Statistics Department:

- CourseWorks
  - Columbia's learning management system.
- Ed Discussion
  - Communication, discussion, and Q&A platform integrated with CourseWorks
- Gradescope
  - Streamlines the grading of paper-based, digital, and coding assignments
- Panopto Media Service
  - Media platform for flipped classroom, lecture capture, and online programs
- Poll Everywhere
  - Learners respond to questions using their own web-enabled devices
- Zoom Video Conferencing
  - Video conferencing functionality, breakout rooms, and Canvas integration

4. Doctoral Student Life

4.1 Student Life for Inclusive Department Culture

Departmental events, programming and services are a culmination of shared focus on an inclusive department climate through the student experience for the entire lifecycle of the PhD Student, from orientation through defense. While coursework, research and teaching take up much of the PhD Students' time, student life programming is the catalyst for shared experiences, creating and reinforcing networks, and expanding interests. A positive student life experience is imperative to improving student wellness and outcomes for PhD Students.

4.2 PhD Student Governance

Every May, the PhD Students convene to select a new PhD Student Representative who serves as a critical liaison between faculty and PhD Students. The primary responsibilities of the PhD Representative are the following:

- Conveying student concerns and issues to the chair and DGS
- Keeping students informed about departmental issues and policies
- Communicating and transmitting student preferences on a range of issues
    - Issues include everything from faculty hiring to program and curriculum matters

Recently, the PhD Students and leadership agreed to expand the governance body to include PhD Seminar Organizers to establish, coordinate, communicate, and host Student Seminar Speaker Luncheons. (*See Appendix J: Department Student Governance*)

4.3 Student Life Social Events

Building a vibrant student community that provides PhD Students with enriching and exciting experiences is critical to the Department. Student leadership works closely with faculty and staff to create events and programs that most interest students.The Department offers different types of events programming in order to foster social, academic, and professional growth in students. In the past, we have hosted:

- On-campus Networking Events
- Off-campus Community Building Social Events
- Hiking Trips
- TGIF Community Lunches
- Celebrating Our Origins Events
- Game and Movie Nights
- Annual US and International Holiday Celebrations
- Small Group Trips
- Graduate Student Retreats

4.4 Annual PhD Student Retreat

Organized by the PhD Student Representative, students have the opportunity to attend the PhD Retreat, which takes place annually every fall semester. Attendees present and discuss their interests, recent work, and experiences to their peer student colleagues, and aim to bridge the gap between first-year PhD Students and more advanced, senior students in the Department. The PhD Student Representatives plan the itinerary, which generates talks on topics of general interest with plenty of time to socialize. Some topics discussed include, but are not limited to, research, finding an advisor, navigating the first year of the program, with built-in time for general peer colleague bonding experiences too.

4.5 Campus Resources

Throughout time spent as a PhD student, there may be instances that arise for which students may wish to or need to seek support. Please feel free to start at the Department level, as in contacting ADAA, Cindy Meekins at cam2362@columbia.edu.

5. Appendices

5.1 Appendix A: Overview of the Statistics Department and the University

(Version 2023.9.15)

Columbia University was founded in 1754 as the King's College by the Church of England. It was the first institution of higher learning in the State of New York and the fifth established in the Thirteen Colonies. Through the years, eighty-six Nobel Prize winners have been affiliated with Columbia, a record unmatched by any other academic institution. Numerous scientific discoveries and technological breakthroughs originated at Columbia. It was the birthplace of FM radio, the laser and modern genetics. The scientific research of the atom bomb at the Morningside Heights campus of Columbia grew into the Manhattan Project. Columbia has also had a long tradition in liberal arts. It is home to the Pulitzer Prize and was the first American university to offer historic preservation, anthropology and political science as academic disciplines. Columbians have also been active in the health sciences. The first M.D. degree was granted at Columbia and more than 30 pharmaceutical products were discovered and invented at the University. Each year, more than 100 new inventions are created at Columbia. Like New York City, the Columbia academic population of faculty, students and scholars is ethnically diverse with broad international representation.

Statistics, as a general methodology, as compared to statistics in particular fields, started with the appointment of Harold Hotelling in the Columbia Economics Department in 1931. Seven years later, Abraham Wald was added to the faculty and together they attracted students such as Abe Girshick, Bill Madow and Kenneth Arrow to study statistics at Columbia, although at that time the idea of a statistics department had not yet been envisioned. After the United States entered World War II in 1942, the Columbia Statistical Research Group (SRG) was formed mainly to deal with problems of the military including topics such as sampling inspection and quality control. Under the direction of Allen Wallis, the group included Jacob Wolfowitz, Lenoard Savage, Abe Girshick, Milton Friedman and George Stigler as staff members. In one of the SRG projects, a Navy captain asked Wallis the question of why test all the items in randomly selected samples after already meeting the number to reject the lot. Wallis sought the assistance of Wald to address this curious question. Wald was very impressed by the idea and came back a few days later with the notion of a sequential probability ratio test (SPRT), an important class of statistical procedures.

In 1946, the department of mathematical statistics was finally formed at Columbia, simultaneously with the statistics department at Chapel Hill and Raleigh, North Carolina, where Hotelling had moved. It was one of the first such departments in the United States. The original faculty included Wald as Chair of the Department, Jacob Wolfowitz as an associate professor and Theodore Anderson as an instructor. Back in the 1940s, statistics referred mainly to statistical inference, so education in theoretical statistics was highlighted in the department. It became a tradition at Columbia that a well-known researcher in theoretical statistics would teach

this course. Thus, Columbia had such illustrious statisticians as Neyman, Doob, Bose, Loeve and Pittman as visiting professors all teaching the inference course in the first two years of the department's existence. By 1948, Howard Levene, Henry Scheffe and Kai Lai Chung were added to the faculty of the department, completing the roster.

In the fall of 1950, the department suffered a major blow due to a plane crash that took the lives of Wald and his wife. Nevertheless, the department continued with success thanks to the efforts of both permanent faculty members (Ted Anderson, Henry Scheffe, Howard Levene, Howard Raiffa, Herbert Solomon, Herbert Robbins and Lajos Takas) and visitors (S.N. Roy, R.C. Bose, Donald Darling, Salem Khamis, Michele Loeve, Erich Lehman, etc.).

A number of basic texts in statistics originated from the teaching activities of the department, such as "Stochastic Processes" by Doob, "Testing Hypothesis" by Lehman, "An introduction to Multivariate Statistical Analysis" by Anderson and "Markov Chains" by Chung.

Although the department's original name was "Mathematical Statistics Department," pioneers of the department had interests in statistical applications. Wald had a considerable interest in Economics, Anderson worked on Statistical Problems in Economics, Psychology and Sociology, Scheffe was interested in problems in Industry and Consumer Research, and Levene provided a bridge between Statistics and the Biological Sciences. To address the increasing interest in applications of statistical methodologies, the department changed its name to Statistics Department in 1983. The location of the department has also changed over the course of this evolution, from Fayerweather Hall under political science, to the Mathematics Building and then to the present location in the School of Social Work Building.

Today, the department has evolved into a healthy size with 21 senior faculty members, 5 tenure-track junior faculty members, 7 lecturers in discipline, approximately 20 adjunct faculty, approximately 60 PhD Students and over 335 MA students. In addition to the PhD Program in Statistics, the department currently offers a new BA/MA in Statistics Option, an MA in Statistics, an MA in Statistics for GSAS PhD Students, an MA in Mathematical Finance, an MA in Quantitative Methods in the Social Sciences, as well as an MS in Actuarial Science, an MS in Data Science, and a Bridge to the PhD Program in STEM, designed to increase participation of students from underrepresented groups in PhD Program in STEM disciplines.

5.2 Appendix B: Qualifying Exams Syllabi for Core and All Subject Exams

(Version 2024.4.9)

1. Core Competency Exam Syllabus

1.1. References.

- Statistical Inference, George Casella & Roger Berger
- Linear Statistical Inference, C.R. Rao

1.2. Topics.

- Linear Algebra: eigenvalues and eigenvectors; rank, dimension, and subspaces; symmetric matrices; projection matrices; singular value decomposition.
- Probability Theory: axioms of probability; joint, conditional, and marginal distributions, probability mass functions, hazard functions, and densities; expectation, variance, covariance; law of the unconscious statistician; iterated expectations; conditional moments; Bayes' theorem; special distributions including joint normal, Gamma, Beta, Poisson, binomial, exponential; order statistics; characteristic function and moment generating function.
- Statistical Theory: statistical models and loss functions; sufficient statistics, complete sufficiency; ancillary statistics; exponential families.
- Estimation: maximum likelihood; method of moments; Bayes' estimators; confidence sets and credible regions; UMVUE tests; Rao-Blackwell theorem; Cramer-Rao bound and Fisher information.
- Testing: Null and alternative hypotheses, type I and type II error rates, power, test statistics; pivot statistics and relationship between tests and confidence procedures; Neyman-Pearson Lemma; monotone likelihood ratio; generalized likelihood ratio statistics, p-values.
- Asymptotics: stochastic convergence; law of large numbers; central limit theorem; delta-method, Chebyshev and Markov inequalities; asymptotic distribution of MLEs, Bayes' estimators; Fisher information.
- Linear Regression: Linear regression models; least squares and sums of squares (ANOVA decomposition); Gauss-Markov theorem; exact and asymptotic distribution of estimators.

2. Theoretical Statistics/Inference Syllabus

2.1. References.

- Theory of Point Estimation-E. L. Lehmann & George Casella
- Testing Statistical Hypothesis -E.L. Lehman & Joseph P. Romano
- Asymptotic Statistics-A.W. van der Vaart
- Theoretical Statistics-Robert Keener
- Mathematical Statistics-Jun Shao

2.2. Topics.

- Sufficiency, minimal sufficiency, Completeness, Ancillarity, Basu's theorem.

Loss function, Risk function, Rao-Blackwell theorem (for convex loss functions). , Unbiasedness, UMVUE, Cramer-Rao inequality, Information.

- Exponential families, mean and variance formulas.
- Bayesian estimation, prior and posterior distributions, posterior mean, types of priors (conjugate prior, hierarchical prior, empirical Bayes, non-informative / weakly informative / informative priors)
    - Minimax estimators, least favorable prior, least favorable sequence of priors, connection between Bayes and Minimax estimators, uniqueness of Bayes/Minimax estimators., Convergence in Probability and Distribution, Slutsky's Theorem, Delta Method, small op and large Op notations, Consistency and asymptotic normality of estimators, Study of MLE in finite dimensional settings (assuming smoothness), Hodges-Lehmann estimator. , M-estimation: consistency and asymptotic normality.
- Hypothesis testing: Generalized NP Lemma, MP and UMP tests, least favourable priors, MLR families (simple/composite null, simple/composite alternate), Likelihood ratio tests. , Local asymptotic analysis and Contiguity.
    - Local asymptotic analysis of MLE and its optimality
    - Asymptotic analysis of tests,and their optimality.
    - Asymptotic optimality of generalized likelihood ratio tests
- Projection, U-Statistics, and rank statistics

3. Probability Theory Syllabus

3.1. References.

- Probability Essentials-Jean Jacod & Philip Protter
- Probability and Measure-Patrick Billingsley
- Probability & Measure Theory-Robert B. Ash
- Probability Theory and Examples-Rick Durrett

3.2. Topics.

3.2.1. Part I.

- Basic measure theory (Lebesgue integrals, monotone class theorems, etc.) , Measurable functions and mappings (random variables)
- Interchanging limits and integration (MCT, Fatou, DCT, uniform integrability, etc) , Prob measures on Rk(Fubini), Independent rv's, Kolmogorov's existence theorem , Inequalities
- Modes of convergence (a.s., in prob, Lp), Kolmogorov 0-1 Law, tail sigma fields, SLLN, Kolmogorov's inequality, infinite sums of IID rvs, Kolmogorov's 3-series theorem, Convergence in distribution (tightness, Prohorov's theorem, Slutsky, Skorohod, etc)Characteristic functionsVarious CLTs. Conditional prob and expectation

3.2.2. Part II.

- Discrete-time Martingales

    - Sub/sup MGs, reversed MGS
    - Upcrossing inequalities, convergence theorems
    - CLT
    - Doob-Meyer Decomposition. U-statistics and convergence.
- Stopping times
    - Wald's equation
    - Optional sampling theorem.
- , Stochastic processes
    - Kolmogorov's existence theorem, finite-dimensional distributions, product spaces – Brownian motion: existence, continuity of paths, reflection principle, Skorokhod embedding, strong Markov property
    - Continuous-time Martingales.
- Ergodic theory and stationary processes.
- Weak convergence on function spaces
    - The spaces Cr0, 1s and Dr0, 1s, Skorohod metric.
    - Weak convergence on Cr0, 1s and Dr0, 1s
    - Applications of functional convergence (e.g., Donsker's theorem, arcsine law, Kolmogorov-Smirnov test)
- Stochastic integrals and stochastic differential equations
    - More on Brownian motion, continuous-time MGs
    - Doob-Meyer decomposition, stopping times
    - Integration with respect to a continuous MG
    - Girsanov's theorem

4. Applied Statistics Syllabus

4.1. References.

- Regression and Other Stories - Gelman, Hill, Vehtari
- Bayesian Data Analysis - Gelman et al.
- The Elements of Statistical Learning-Hastie, Tibshirani, Friedman.

4.2. Topics.

4.2.1. Part I. Statistical models: Linear model, logistic regression, non-parametric model, models with latent components including mixed-effect/multilevel models, factor models, etc. For these models, the following questions are to be answered:

- Model assumptions
- Estimation. Usually there are more than one way to estimate model parameters, each of which arises from their own context and requires different assumptions
- Inference questions: Frequentist distribution, confidence intervals, posterior-distribution based uncertainty measures, etc.
- Model diagnosis and refinement; robustness of estimation and inference to assumptions., Model selection/regularization and their computation

4.2.2. Part II. On Bayesian Data Analysis
Applied and computational Bayesian statistics; Bayesian Hierarchical Modeling; Fake-data

simulation to design an experiment; Modeling using splines/Gaussian processes; computational workflow.

On Statistical Machine Learning

- Linear and nonlinear dimensionality reduction;
- Data-driven and model-based classification methods;
- Data-driven and model-based clustering methods;
- Graphical models: Bayesian networks, Markov random fields;
- Latent variable models;
- Introduction to Deep Learning: Deep generative models, Approximate inference.

4.3. Computation.

- Gradient-based optimization methods
- Monte Carlo methods: sampling from univariate and multivariate distributions

5.3 Appendix C: PhD Program Requirements Checklists

(Version 2023.09.15)

5.3.1 PhD Program Checklist: Year 1

- ☐ Orientation Week
  - ☐ Attend the Departmental and GSAS Orientations
  - ☐ Take the Placement Core Competency (mandatory registration)
  - ☐ International Students: Take the American Language Program Placement Test
  - ☐ Order your laptop/desktop computer
- ☐ Fall
  - ☐ Register for the first courses of the three sequences: GR6101, GR6201, GR6301
  - ☐ Attend the mandatory TA Onboarding Session
  - ☐ Check in with your faculty mentor at least twice per semester
  - ☐ Student Seminar: Learn about research in the department
  - ☐ Departmental Seminar: required 50% attendance
  - ☐ Serve as a Teaching Assistant
- ☐ Spring
  - ☐ Register for 2-3 Core Courses
    - ☐ 1 _____
    - ☐ 2 _____
    - ☐ 3 _____
  - ☐ Check in with your faculty mentor at least twice per semester
  - ☐ Student Seminar: Learn about research in the department
  - ☐ Departmental Seminar: required 50% attendance
  - ☐ Serve as a Teaching Assistant
  - ☐ Attend the Minghui Conference
  - ☐ **Take and/or Pass the Core Competency Exam**
- ☐ Summer
  - ☐ Register for and attend the Summer Topics Courses
  - ☐ Undergo research and/or prepare for Qualifying Subject Exams
  - ☐ **Pass the Core Competency Exam before year 2**

Notes on Exception:

5.3.2 PhD Program Checklist: Year 2

- ☐ Register for Statistical Practicum Requirement (one unit must be completed before graduation)
  - ☐ Statistical Consulting Option
  - ☐ Communication Course Option
  - ☐ Summer Intern Option

- ☐ Fall
  - ☐ Register for 1-2 Core Courses
    - ☐ 1 _____
    - ☐ 2 _____
  - ☐ **Finish core course requirements**
  - ☐ **Apply for the MA degree**
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with Department of Statistics Faculty only
  - ☐ Talk to and meet with potential thesis advisors
  - ☐ Student Seminar: Learn about research in the department
  - ☐ Departmental Seminar: required 50% attendance
  - ☐ Serve as a Teaching Assistant
- ☐ Spring
  - ☐ Register for One Topic Course
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with Department of Statistics Faculty only
  - ☐ **Establish your dissertation defense advisor by the end of this semester**
  - ☐ Student Seminar: Learn about research in the department
  - ☐ Departmental Seminar: required 50% attendance
  - ☐ Attend and/or present at the Minghui Conference
  - ☐ Serve as a Teaching Assistant
- ☐ Summer
  - ☐ Register for and attend the Summer Topics Courses
  - ☐ Undergo research with a departmental faculty member or prepare for Qualifying Subject Exams
  - ☐ Present at a summer conference

Notes on Exception:

5.3.3 PhD Program Checklist: Year 3

- ☐ Register your first required topics course (three total are required)
- ☐ Register for Statistical Practicum Requirement **(if you have not previously completed this requirement)**
  - ☐ Statistical Consulting Option
  - ☐ Communication Course Option
  - ☐ Summer Intern Option

- ☐ Fall
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with Department of Statistics Faculty only
  - ☐ Attend and present in student seminar
  - ☐ Departmental Seminar: required 50% attendance
  - ☐ Serve as Teaching Assistant or Recitation Leader
- ☐ Spring
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with your Dissertation Advisor
  - ☐ Attend and present in student seminar
  - ☐ Attend and/or present at the Minghui Conference
  - ☐ Departmental Seminar: required 50% attendance
  - ☐ Serve as Teaching Assistant or Recitation Leader
- ☐ Summer
  - ☐ Register for and attend the Summer Topics Courses
  - ☐ Participate in summer research with your thesis advisor
  - ☐ Present at a summer conference
  - ☐ **Pass Oral exam by the end of Year 3**
  - ☐ **Apply for the MPhil Degree**

Notes on Exception:

5.3.4 PhD Program Checklist: Year 4

- ☐ Register for your second required topics course (three total are required)
- ☐ Register for Statistical Practicum Requirement **(if you have not previously completed this requirement)**
  - ☐ Statistical Consulting Option
  - ☐ Communication Course Option
  - ☐ Summer Intern Option

- ☐ Fall
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with your Dissertation Advisor
  - ☐ Attend and present in the student seminar
  - ☐ Departmental Seminar: 50% attendance
  - ☐ Serve as Teaching Assistant or Recitation Leader
- ☐ Spring
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with your Dissertation Advisor
  - ☐ Attend and present in the student seminar
  - ☐ Attend and present at the Minghui Conference
  - ☐ Departmental Seminar: 50% attendance
  - ☐ Serve as Teaching Assistant or Recitation Leader
- ☐ Summer
  - ☐ Register for and attend the Summer Topics Courses
  - ☐ Participate in research with your departmental thesis advisor
  - ☐ Present at a summer conference

Notes on Exception:

5.3.5 PhD Program Checklist: Year 5

- ☐ Register for your third topics course (three total are required)
- ☐ **Distribute and defend dissertation and defense before the end of Year 5**
- ☐ International Students should apply for Optional Practical Training (OPT) through the ISSO (see ADAA, Cindy Meekins)

- ☐ Fall
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with your Dissertation Advisor
  - ☐ Attend and present in the student seminar
  - ☐ Departmental Seminar: 50% attendance
  - ☐ Serve as Teaching Assistant or Recitation Leader

- ☐ Spring
  - ☐ Enroll in Graduate Independent Research (STAT GR8001) with your Dissertation Advisor
  - ☐ Attend and present in the student seminar
  - ☐ Attend and present at the Minghui Conference
  - ☐ Departmental Seminar: 50% attendance
  - ☐ Serve as Teaching Assistant or Recitation Leader

- ☐ Summer
  - ☐ Register for and attend the Summer Topics Courses
  - ☐ Participate in research with your departmental thesis advisor
  - ☐ Present at a summer conference

Notes on Exception:

5.4 Appendix D: Registering for GR8001 Graduate Independent Research

(Version 2023.9.11)

The Department of Statistics Faculty includes ***STAT 8001 Graduate Independent Research*** as part of the curriculum as a measure to support students in advancing towards dissertation progress. Graduate Independent Research aims to help students refine research interests and develop thesis topics with **Department of Statistics faculty**. Registration for GR8001 is not a commitment on either the faculty or student side to a formal thesis advisor/advisee relationship.

To acquire an STAT 8001 Graduate Independent Research Mentor, students are encouraged to meet with several Department of Statistics faculty members to determine aligned research interests. Students must receive pre-approval to register for STAT 8001 with the Department of Statistics faculty member who accepts/approves to mentor the student. Students are not permitted to register for STAT 8001 without Department of Statistics faculty approval.

All students in their second year of study and beyond are expected to register for a minimum of one and a maximum of three sections of GR8001 Graduate Independent Research each semester to work with a faculty research mentor from the Department of Statistics.

- **First year students** are not required/expected to register for GR8001 with Department of Statistics faculty, but are welcome to do so should they be interested, in consultation with their Department of Statistics first-year faculty mentor;
- **Second year students** are required to register for GR8001, and should consider this an opportunity to connect with Department of Statistics faculty mentors/advisors to start research;
- **Third year students and beyond**, who are already involved in dissertation research with a designated Department of Statistics thesis advisor, are required to register for the GR8001 section that aligns with their thesis advisor's name.

How to Register?

Department of Statistics faculty members look forward to opportunities to discuss research and to connect with students interested in research that aligns with their areas of expertise.

- Send an email to the Department of Statistics faculty member you are interested in working with. They are expecting your requests, and look forward to hearing from you. Provide them with a brief paragraph about your research interests, perhaps attach a CV, and wait to hear back from them.
- Please meet with several Department of Statistics faculty members to determine a good fit for your research interests. (If you do not hear back from faculty within one-to-two weeks, please feel free to contact ADAA for support with the communications.)
- After faculty permission is granted, as part of the registration process SSOL will ask the following question during the registration process: *Do you have permission to register for this course?* Only if you have received prior approval from a Department of Statistics

faculty mentor, then you can respond to the affirmative, and carry on with the registration process.
- Any registration issues, concerns or obstacles, reach out to ADAA, Cindy Meekins at cam2362@columbia.edu for support.

STAT 8001 Graduate Independent Research Requirements

- PhD students ***are required*** to register for STAT 8001 Graduate Independent Research every semester of enrollment from the first semester of their second year in the PhD Program.
- PhD students ***are required*** to work exclusively with faculty from the Department of Statistics for STAT 8001 Graduate Independent Research.
- PhD students ***are not permitted*** at any time to work with faculty "outside" of the Department of Statistics for STAT 8001 Graduate Independent Research (ineligible mentors are faculty from other Columbia University departments; faculty from other universities; and/or any non-faculty from industry).
- PhD students ***are not permitted*** to request that Department of Statistics faculty members serve as proxies for non-Department of Statistics faculty members for STAT 8001 Graduate Independent Research.
    - PhD students ***are not permitted*** to request that a Department of Statistics faculty member post grade(s) on behalf of a non-Department of Statistics faculty member for STAT 8001 Graduate Independent Research.
- **PhD students who do not register for STAT 8001 with a faculty member from the Department of Statistics every semester of enrollment, from the first semester of their second year in the PhD Program through their final semester of registration, will be subject to academic probation.**

5.5 Appendix E: Guidance on External Dissertation Advisor

(Version: 2023.9.15)

For questions and final approval of any exceptions related to the dissertation advisor, students ***MUST*** consult the Director of Graduate Studies (DGS). It is the responsibility of the students to understand and comply with policies on dissertations and defenses set forth by the Graduate School of Arts and Sciences (GSAS). Non-compliance with these policies may lead to delays in dissertation progress. Cindy Meekins, the Associate Director of Academic Affairs (ADAA) of the department provides administrative support to both students and faculty in terms of seeking clarification from GSAS as needed.

- According to GSAS's Policy on Faculty Advising of the Dissertation | GSAS
  - "*Faculty may supervise dissertations in their own department and in any other department in which they have been designated as* ***approved dissertation advisors.***"
- Here is the current list of **approved dissertation advisors** for Statistics.
- Here is the Policy on Dissertation Sponsors:
  - All tenure and track faculty in the department are approved dissertation advisors and are eligible to sponsor statistics doctoral students.
  - The department's Affiliated Faculty (listed on the department's faculty page) are eligible to co-sponsor statistics doctoral dissertations with a Statistics tenure, tenure track faculty member, who must approve the co-sponsor arrangement.
  - **A vote of approval by the tenure and tenure track faculty is REQUIRED for a non-affiliate Columbia faculty member to co-sponsor a Statistics dissertation.** Such requests must be submitted by the Statistics tenure and tenure track faculty co-sponsor to the DGS. and then be voted on by the faculty.
  - As of Fall 2023, it is strongly encouraged that external dissertation co-sponsors provide funding support for advisees in the department.

5.6 Appendix F: Roles and Responsibilities for RLs, TAs and Class Assistants

Onboarding and Orientation for Recitation Leaders, Teaching Assistants and Class Assistants
First-time Recitation Leaders (RLs), Teaching Assistants (TAs) and Class Assistants are required to be onboarded through the Departmental DAAF and HR Coordinator. Doctoral TAs are appointed from the first day of the Fall Semester to the Last day of May in the Spring Semester. Other TAs and Class Assistants are appointed for one semester, and must attend a mandatory orientation session before their first appointment's start date.

Roles of RLs, TAs and Class Assistants
RLs, TAs and Class Assistants under the direction of course instructors, to provide support for the course(s) they are assigned. ***Per the RL and TA position offer of employment letters, RLs and TAs must be available to support the course instructors during the duration of their appointment. Doctoral student RL and TA appointment is from 9/1 to 5/31 each academic year.*** Other TAs and Class Assistants should refer to your appointment letter for the starting and ending dates of your appointments. Their primary responsibilities are to follow the lead of the course instructor in delivering the learning outcomes of the course, according to the vision and plan set by the course instructor, and to carry out the tasks the course instructor assigns to them.

Below, we list the general responsibilities of RLs, TAs and Class Assistants. Specific courses may have responsibilities for RLs, TAs and/or Class Assistants that are slightly different from the lists below due to factors such as the nature of instruction, class sizes, forms of assignments, etc. RLs, TAs and Class Assistants are strongly encouraged to clarify their responsibilities with the course instructor as early as possible at the very beginning of the semester. Responsibilities are subject to adjustment throughout the semester due to adjustments of instructional plans, emerging learning needs of students, and changes to the instructional team due to unforeseen circumstances. RLs, TAs and Class Assistants should keep regular communication with the course instructor, work professionally in response to the needs of the course, complete tasks before deadlines, and collaborate with everyone on the instructional team.

RL Responsibilities
- Prepare weekly lesson lectures in support of the main course
- Provide managerial oversight of Class Assistants; includes providing grading guidance, solutions, grading rubrics
    - Serve as the primary conduit between the Class Assistants and the Instructor
- Prepare homework solutions, projects, and exams
- Host a minimum of 2 hours per week for Office Hours.
    - Discuss Office Hours expectations, and best practices with Instructor
- Proctor exams, and ***grade midterms and final exams***
- Release assignment grades posted by Class Assistants in Canvas
    - Only RLs can change grades in Canvas
- Remain in regular contact with faculty regarding student issues/concerns
- Respond to faculty and student emails and requests within 24 hours
- Fill in on Class Assistant tasks when there is a high volume of work and high time pressure
- Support the courses by completing other tasks assigned by the instructor
- ***An average*** commitment of 10 hours per week, which will vary depending upon the week of the semester; will also vary each semester based on the course

TA Responsibilities
- Provide managerial oversight of Class Assistants; includes providing grading guidance, solutions, grading rubrics
    - Serve as the primary conduit between the Class Assistants and the Instructor
- Prepare homework solutions, projects, and exams
- Host a minimum of 2 hours per week for Office Hours
    - Discuss Office Hours expectations, and how best to use Office Hours with Instructor

- Proctor exams, and ***grade midterms and final exams***
- Release assignment grades posted by Class Assistants in Canvas
    - Only TAs can change grades in Canvas
- Help with lectures, at times
- Remain in regular contact with faculty regarding student issues/concerns
- Respond to faculty and student emails and requests within 24 hours
- Fill in on Class Assistant tasks when there is a high volume of work and high time pressure.
- Support the courses by completing other tasks assigned by the instructor.
- ***An average*** commitment of 10 hours per week, which will vary depending upon the week of the semester; will also vary each semester based on the course.
- May be requested to TA for courses where the course material is new to them
    - Keep abreast of material covered in class and in the textbook

Reader Responsibilities

- Grade homework assignments and any non-exam materials
    - Not permitted to grade midterms or final exams; exceptions may be made for service-level courses with high enrollment with Chair or DGS approval
    - Receive grading guidance, solutions and grading rubrics from TAs
    - Upload student assignment grades anonymously in Canvas
    - Direct all grading issues to the TAs/Instructor
- Remain in contact with the TAs on a regular basis (e.g., weekly or biweekly)
- **May be asked to help proctor exams**
- ***An average*** commitment of 10-20 hours per week; will vary based on the semester, course and Instructor

Key Points for RLS and TAs Regarding Class Assistants

- Class Assistants should not interact with students enrolled in the course without prior approval from the RL or TA or Instructor
- Class Assistant information (name and uni) should be anonymous from the grading process
- Class Assistants should ensure that the *Anonymous Grading* feature in Canvas is activated: go to Settings => Feature Options => Anonymous Grading => ON
- Homework assignments should be graded in a timely fashion. RLs and TAs oversee this process.

TA Guidelines for Promoting Academic Integrity

- **Best Practices for Exam Proctoring**
    - Before exams, familiarize yourself with University policies on academic integrity and misconduct by reviewing the Center for Student Success and Intervention (CSSI) website
    - Before exams, ask faculty instructor what their expectations are for proctors during exams (note that Class Assistants may serve as proctors too)
    - Exam proctors are expected to **walk around and keep eyes on students** during the entirety of exam period
        - Refrain from multitasking during exams
            - Avoid using phones, laptops, or grading papers, doing your homework, studying, etc.
    - **Report all suspicions of violations of academic integrity concerns directly to the faculty instructor only**
        - **Only faculty instructors are approved to report suspected violations of academic integrity to the University**
        - Before exams, ask the faculty instructor for their TA expectations for suspected academic violations
            - Ask the faculty instructor how they want to be informed about suspected violations of academic integrity (such as handling immediately, or discussing the concern after the exam, etc.)
    - Support accommodations determined by the Columbia University Office of Disability

Services (ODS) and the Barnard Center for Accessibility Resources and Disability Services (CARDS), as long as they do not undermine the academic integrity of the exam and/or course
        - Ask faculty for instructions on how to support accommodations from ODS and/or CARDS during exams (there may be special instructions that must be followed)
- **Best Practices for Homework Assignments**
    - Ask the faculty instructor expectations and policies regarding use of AI and other resources, online or otherwise
    - Ask the faculty instructor for their expectations and policies regarding collaboration, and how to administer those expectations and policies
    - **Report all suspicions of violations of academic integrity concerns directly to the faculty instructor**
        - **Only faculty instructors are approved to report suspected violations of academic integrity to the University**

Key Points for Faculty Regarding Class Assistants and TAs

- Class Assistant information (name and uni) should not be included on the course syllabus or in Canvas; the role is intended to be anonymous. Please reach out to Cindy Meekins for administrative support.
    - To have Class Assistants comment directly on homework assignments in Canvas, please contact Cindy Meekins at cam2362@columbia.edu an anonymous account.
- Provide clear language on the syllabus stating that all communication regarding homework assignments should be directed to the TA/Instructor.
- For courses with multiple TAs, use a task tracker with clear assignments, instructions and deadlines.
- Please check in with the Department Chair or DGS if you would like to request that Class Assistants review exams. ***Class Assistants typically do not and should not review exams.***
    - Lower-level courses may have master's students serving as TAs; they are permitted to grade midterms and exams.
- Please ensure that your TAs and Class Assistants meet semi-regularly to review the grading rubric and any other protocols, as needed.
- Report TA issues in a timely manner to Cindy Meekins at cam2362@columbia.edu.

Commitment to Our Shared Core Values

The Columbia University Department of Statistics values a broad and inclusive departmental learning experience, where all faculty, staff, and students embrace the following core values:

- Support and promote ***excellence*** in all research and scholarship with a steadfast commitment to prioritizing ***rigor*** and complexity over pace and haste;
- Recognize the power of ***grit*** as a predictor of success, and ***perseverance*** as an indicator of optimal performance outcomes and positive student functioning;
- ***Celebrate failures*** as fuel to drive inquiry and discovery, build tolerance for risk-taking, foster growth, and encourage vulnerability, humbleness, and connection;
- Act with ***integrity*** and show ***respect*** by practicing and advocating free expression, openness and fairness, and appreciation for one another at all times;
- Promote a ***share and growth mindset*** that results in overcoming obstacles, and shifting emphasis away from outcomes and toward effort and process.

Ombudsperson for RLs, TAs and Class Assistants

Should RLs, TAs or Class Assistants have any concerns regarding responsibilities, students, and/or confidential concerns, please reach out to the designated TA Ombudsperson, Cindy Meekins at cam2362@columbia.edu, who serves as a resource to TAs.

Contacts for RLs,TAs and Class Assistants

- ***RL, TA and Class Assistant Ombudsperson: Academic/Student/Position Issues & Concerns, General Questions, Canvas Accounts Support***
  Cindy Meekins, Associate Director for Academic Affairs | cam2362@columbia.edu
- ***Appointment Letters, Payroll/Stipends***
  Dood Kalicharan, Director of Administration and Finance | dk5@columbia.edu
- ***Human Resources, Departmental Onboarding***
  TBD, Human Resources Coordinator | TBD
- ***Textbooks, Blue Books, Photocopies, Supplies, Room Reservations***
  Janice Coston, Departmental Assistant | jc6215@columbia.edu
- ***Classroom Technologies Support***
  CUIT Technical Support | for classrooms emergency support 8:00 am to 8:00 pm call 212.854.3633
- ***Professional Development***
  Center for Teaching and Learning
  Mark Philipson, Director for Graduate Student Program & Services | mlp55@columbia.edu

Side-By-Side Quick Guide for RLs, TAs & Class Assistants

	RECITATION LEADERS	TEACHING ASSISTANTS	Class AssistantS
PhD Students	Yes	Yes	No
Qualified MA and Undergraduate Students	Maybe	Maybe	Yes
Average Weekly Workload	10 Hours	10 Hours	10-20 Hours
Mandatory Orientation Required	Yes	Yes	Yes
Provides Oversight To	Class Assistant(s); conduit between Class Assistants and Instructors	Class Assistant(s); conduit between Class Assistants and Instructors	None
Receives Oversight From	Faculty/Instructor	Faculty/Instructor	Faculty/TA
Communications	With Instructor Regularly	With Instructor Regularly	With TAs Regularly
Instructional Support	Supports Instructor	Supports Instructor	Supports TAs
Instructional Responsibilities	Prepares lectures based on main course content, leads recitation lectures	May lead course lectures on occasion (such as for exam preparation, etc.)	None
Report Student Issues/Concerns	To Instructor	To Instructor	To Instructor
Student-Facing Duties	Weekly Office Hours; Responds to Emails and Requests Within 24 Hours	Weekly Office Hours; Responds to Emails and Requests Within 24 Hours	None, Unless Explicitly Instructed by Instructor; Remains Anonymous to Students in the Course
Grading	Prepares Homework Solutions, Exam Questions and Grading Rubrics; Grades Exams	Prepares Homework Solutions, Exam Questions and Grading Rubrics; Grades Exams	Grades Homeworks and Any Non-Exam Materials
Upload Grades as Enhanced TA	Allowed; Instructor Must Set Up in Canvas	Allowed; Instructor Must Set Up in Canvas	Allowed; Instructor Must Set Up in Canvas
Proctor Exams	Required	Required	May be Required; Check with TA/Instructor

5.7 Appendix G: Department Guidelines on Academic Integrity

For Course Instructors, Recitation Leaders and Teaching Assistants

The guidelines herein are intended for all courses in the Department of Statistics and are meant to be implemented by the course instructors[9]. Teaching Assistants should also be familiar with these guidelines and provide assistance as instructed by the course instructors. Teaching assistants are often the first to spot academic integrity issues, and must report these issues to the course instructors as soon as possible. The course instructors should report to the Department Chair and the relevant Program Director, seek assistance from ADAA, Cindy Meekins, and then report to the Center for Student Success and Intervention (CSSI) and the dean's office of the school(s) of the student(s) of concern.

The University on Academic Integrity

While the Columbia University Board of Trustees holds decisive authority on student discipline, the Deans of the schools and their designee(s) establish standards of behavior for their students, and define procedures by which discipline will be administered. **Ultimately, the University's CSSI is responsible for defining violations of academic integrity, and reviewing and managing the adjudication process for all academic integrity violation referrals.**

The Department of Statistics on Academic Integrity

The Department fully supports the Faculty Statement on Academic Integrity. The Department recommends that faculty adhere to Best Practices for Faculty, prepared by an *Academic Integrity Working Group* that consists of Columbia faculty and administrative support units to help avoid incidents of academic misconduct by students.

Reporting and Handling Potential Academic Misconduct

It is Departmental policy, and in line with University directives, that responses to academic misconduct are determined by the University's CSSI. Here is the appropriate protocol to follow:

- **Teaching Assistants should report possible misconduct incidents to the course instructor.**
- **Course instructors should report possible incidents to the Department Chair.**

Responses to misconduct, including assessing penalties for cheating, should only be taken with guidance stemming from investigation and determination by the CSSI. If you need assistance with this process or expected protocols, please request assistance from ADAA, Cindy Meekins.

FAQs on the Academic Misconduct Process for Faculty

For more information on University policies and processes for violations of academic integrity, please see the CSSI website. More details for answers to the the FAQs below may be found on the CSSI Academic Misconduct Faculty FAQ[10] page.

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[9] ***Graduate students who are instructors*** *on record for undergraduate courses are supervised by the department's Director of Undergraduate Studies. A training session with DUS is required before such instructor appointments can be processed. For first-time graduate student instructors, DUS should be added as a second instructor. DUS should review the syllabus before the start of the course and check in with graduate student instructors at least three times during the course, such as after the midterm, before the final exam, and before final grades are submitted. This ensures that the Department applies supervision and oversight over graduate student instructors as expected by GSAS policies and the schools these courses serve.*

[10] Responses adapted from CSSI Academic Misconduct Faculty FAQs.

- **What to report?**
  - *Well-founded suspicions of academic misconduct*
- **Why report?**
  - *Helps students to reason through ethical situations as part of the learning process, and promotes consistency and fairness, and identifies students who are repeat offenders.*
- **How to report?**
  - *Report alleged violations on the CSSI Academic Integrity Violation Referral Form*
- **How will reporting this incident impact the student?**
  - *Students found responsible for misconduct will be subject to appropriate sanctions, and will receive educational support on academic integrity.*
- **What if I don't want to report an incident or I am unsure if I should?**
  - *Contact CSSI to walk you through the Dean's Discipline process and possible outcomes*
- **Do I have to meet with the student if I am reporting them?**
  - *Faculty should meet with the alleged student to notify them that a referral will be made to CSSI prior to reporting the incident, and include the student response in the referral*
- **Do I have to attend the hearing?**
  - *Faculty members do not attend the hearing*
- **How is an outcome determined?**
  - *The standard of proof to determine if responsibility is a preponderance of the evidence.*
- **Will I be informed of the outcome?**
  - *CSSI will communicate with the faculty member once this process is concluded.*
- **What if the student is found not responsible?**
  - *This does not mean they did not violate, but rather, there was not enough proof.*
- **How do I grade the student?**
  - *Grading is determined by course instructors independent of decisions rendered by CSSI. Faculty are encouraged to consult with Program Directors.*
- **Who do I contact for questions?**
  - Phone: (212) 854-6872; Email: cssi@columbia.edu

Best Practices on Syllabi

The Department requests that all instructors include a statement on academic integrity on all course syllabi.

- **Sample Statements of Academic Conduct for Syllabi**
  - GSAS and the Columbia University Undergraduate Colleges offer Sample Statements on Academic Integrity for syllabi.
    - Barnard College, Columbia College/SEAS, and College of General Studies sample statements of academic integrity for undergraduate courses
    - GSAS Statement on Academic Integrity for MA/PhD courses
  - **[Example Statement]** Columbia's intellectual community relies on academic integrity and responsibility as the cornerstone of its work. Students are expected to exhibit the highest level of personal and academic honesty as they engage in this class. In practical terms, [note: edit the following statements according to your class] you must be responsible for the full and accurate attribution of the ideas of others in all of your research papers and projects; you must be honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet source. Failure to observe these rules of conduct will have serious academic consequences, up to and including dismissal from the university. If a faculty member suspects a breach of academic honesty, appropriate investigative and disciplinary action will be taken following Dean's Discipline procedures.

    - We encourage faculty to define and provide examples of what students are and are not permitted for quizzes, tests and exams, homeworks and course projects. For more details, see the Preventing Academic Dishonesty: Establishing Standards for Academic Honesty drop down for suggestions on the Best Practices for Faculty page.

Best Practices for Exams

- Include an explicit statement on ***exam conditions*** with every exam
- Reserve rooms with enough seats *with a writing space*[11] to space students apart (reservations can be requested through the department; contact ADAA, Cindy Meekins.)
    - Request exam rooms be booked next to each other, if possible
- Implement assigned seating for exams, and/or consider distributing different versions of the exam(s)
- Check student identification (as needed)
- Notify students in advance and at the start of the exam of *test taking expectations and protocols.*
    - Students should have only faculty-approved items on or around their desks. These items should be specified in the syllabus and on the front page of the exam paper as part of the *exam conditions*. For example,
        - Faculty will determine what students may keep on their desks, such as calculators, pencils, erasers, scratch paper/blue books distributed by the course instructor or exam proctors, (calculators on phones are NOT permitted)
        - All electronics, phones, headsets, earbuds, sunglasses, hats, watches, food, drinks, books, scratch paper, backpacks, extraneous or unworn clothing, and accessories should be stowed away from the desks.
        - Faculty may ask students to leave all belongings in the front of the classroom (with phones silenced).
        - Cheat/information sheets are not permitted unless arranged in advance with faculty approval.
        - Students are expected to keep their faces visible at all times (except for medical face masks)
            - No dark glasses, no hats, no hoodies, etc.
- Exams must remain stapled (no restapling)
- Students must be in their seats at the start of the exam
- No reentry after an exit; no breaks without ODS documentation
- Include the rules for exams in the syllabus, and repeat them to students prior to exams in lecture, in practice exam sessions, and by notices and/or emails
- Include an affirmation page, which must be signed by the student, stating that they read and understand the exam conditions, the work on the exam is theirs alone, and they will not provide assistance to, or share the information with, anyone who will take an exam for the same course.
- Review the Preventing Academic Dishonesty: Establishing Standards for Academic Honesty drop down for suggestions for Best Practices for Faculty, which includes strategies for writing exams.

Best Practices for Proctoring

- **Proctor's suspicions of academic violations must be reported to course instructors**

[11] Some classrooms have chairs without a writing table. While these chairs are acceptable for lectures, they are problematic for exams. Instructors should reserve additional classrooms for exams.

- Instruct all proctors to walk around the classroom and keep eyes on students during the entirety of exam periods. (Recitation Leaders and Teaching Assistants are responsible for proctoring exams; Class Assistants can also support proctoring needs.)
- Before each exam, inform and/or remind Recitation Leaders (RLs) and Teaching Assistants (TAs) of how to handle suspected academic violations.
    - Quiet verbal warnings (during the exam) can be given to students who violate exam conditions.
    - Some faculty prefer that the RLs and TAs draft a brief note to the course instructor during the exam period.
    - When applicable and possible, students could be asked to move to different seats
- Provide accommodations determined by the Columbia Office of Disability Services (ODS) and the Barnard Center for Accessibility Resources and Disability Services (CARDS), as long as they do not undermine the academic integrity of the exam and/or course. When there are concerns about these accommodations, reach out to ADAA, Cindy Meekins for assistance.
    - Direct students who request accommodations to ODS or CARDS.
    - Plan ODS/CARDS accommodations in advance, as needed (such as for extra time, special testing locations, etc.)

Best Practices for Homework

- Expectations and policies regarding collaboration, and/or the use of AI and other resources, online or otherwise, should be included on syllabi and explained to students in lectures.
- Inform RLs and TAs about faculty expectations and policies regarding collaboration, etc., and how to administer faculty expectations and policies.
- Guide RLs and TAs on how to report concerns to the course instructor, and on uniform application of the expectations and policies.
- Clarify on syllabi and in class what are permitted collaborations for homework, projects, labs, etc, as suggested in the *Preventing Academic Dishonesty: Establishing Standards for Academic Honesty* drop down on the Best Practices for Faculty page.

5.8 Appendix H: Columbia Resources for International Student Awareness

Online Targeting and Doxing Resources

- Resources to Assist After Online Targeting/Doxing
  https://universitylife.columbia.edu/doxing-resources
  - To learn more about the University's policy regarding anti-doxing and online harassment visit:
    https://universitypolicies.columbia.edu/content/anti-doxing-and-online-harassment-policy

Resources for International Students

- International Students and Scholars Office (ISSO) https://isso.columbia.edu ○ ISSO (Morningside/Manhattanville and at CUIMC) offers advising appointments (in person or Zoom (Book now) or phone (212-854-3587)) to international students. ISSO advisors are here to support you. The ISSO e-mail is continually monitored: email isso@columbia.edu with questions. If you have pressing concerns, our advisors will reach out to you to set up a same-day appointment.

Legal Resources

- Columbia Law School Immigrants' Rights Clinic Defense Initiative
  - The Columbia Law School Immigrants' Rights Clinic (https://www.law.columbia.edu/academics/experiential/clinics/immigrants-rights-clinic) provides free, confidential advice and representation to Columbia students and staff at risk of deportation in the United States who have DACA, who are otherwise undocumented (with or without pending immigration applications or cases), or who have immigration status but are at risk of deportation.
- Pro-Bono Legal Representation and Other Assistance
  - Students at Columbia University can work directly with a lawyer on immigration-related issues at no cost, thanks to arrangements the University has made for pro-bono legal consultation. If you would like more information about this service, please reach out to universitylife@columbia.edu.
- The President's Alliance on Higher Education and Immigration (https://www.presidentsalliance.org): An alliance of American college and university leaders dedicated to increasing public understanding of how

immigration policies and practices impact our students, campuses, and communities.

- Legal Help for the Public (https://www.nycbar.org): A comprehensive website with links to resources, including information on help on pro bono cases and printable brochures on how to handle different types of legal matters, provided by the Association of the Bar of the City of New York.
- Legal Aid Society (https://legalaidnyc.org): Non-profit legal aid provider in New York City, provides legal assistance and information.

Columbia Resources for Student, Faculty, and Staff Awareness

- Legal Referral Service (https://www.nycbar.org/get-legal-help): Sponsored by the Association of the Bar of the City of New York and the New York County Lawyers' Association, recommends attorneys with general experience or with expertise in particular areas.
- Many counties in New York provide lawyer referral services for individuals looking for an attorney. The New York State Bar Association (https://nysba.org) can guide you to these services.
- For additional information: https://ogc.columbia.edu/content/help-public

NOTE: Any links to non-Columbia University information are provided as a courtesy. These links are provided for reference and general informational purposes only. In no way does Columbia University, or the Office of General Counsel specifically, accept any responsibility for the content of the linked pages, or for any consequences of the use of said pages. Nor does the Office of General Counsel vouch for the validity of the information on said pages. In no way should the content of this page, or the linked pages, be construed as legal advice from Columbia University or any agent thereof.

Student Health and Counseling Resources

All visits and conversations with your student health providers are confidential, with limited exceptions. *Services are available in person and via secure telehealth.*

Morningside/Manhattanville students

- Make an individual counseling appointment via the Patient Portal (https://secure.health.columbia.edu) or by calling 212-854-2878.
- Urgent mental health support: call 212-854-2878 (available 24/7) or access in-person drop-in. (https://www.health.columbia.edu/content/same-day-service) Mondays - Thursdays from 5:30 - 8:00 p.m. (check-in closes at 7:30 p.m.) in Lerner 502

- For urgent medical concerns, call 212-854-7426, option 4.
- Free online resources for self-help and coping with crisis. (https://www.health.columbia.edu/content/self-help-and-crisis-resources)
- All full-time students, international students, and students on the Columbia Student Health Insurance Plan have healthcare coverage while traveling across the U.S. and around the world (https://www.health.columbia.edu/content/coverage-while-traveling).
    - Columbia Health Insurance Office: John Jay Hall, 3rd Floor, studentinsurance@columbia.edu, 212-854-3286

CUIMC students

- Schedule a counseling appointment, support session, or a Well-Being Strategy Session using the Student Health Portal (https://portal.studenthealth.cuimc.columbia.edu) or by calling 212-305-3400.
- For urgent mental health support, call 212-305-3400, after-hours press option 7, or access support via chat and phone through TELUS Health Student Support

Columbia Resources for Student, Faculty, and Staff Awareness

(https://www.studenthealth.cuimc.columbia.edu/cuimc-telus-health) (available 24/7, within the U.S. and around the world).

- Utilize on-campus and community resources. (https://www.studenthealth.cuimc.columbia.edu/resources-and-support) Student Health on Haven's services and resources are tailored to the needs of students learning, training, and working in the health professions
- Free online resources for coping with uncertainty (https://www.studenthealth.cuimc.columbia.edu/resources-and-support/covid-19-resources/cop ing-with-uncertainty-and-transition)

● For urgent medical concerns, call 212-305-3400, after-hours press option 8. ● All full-time students, international students, and students on the Columbia Student Health Insurance Plan have healthcare coverage while traveling across the U.S. and around the world (https://www.studenthealth.cuimc.columbia.edu/our-services/travel-medicine)

- Student Health on Haven, Insurance and Administration
- 100 Haven Avenue, Tower 2, 2nd floor
- shsinsurance@cumc.columbia.edu or call 212-305-3400

Additional resources for all students

- Public safety tips: https://publicsafety.columbia.edu/crimepreventiontips
- For spiritual support, you can connect with a Religious Life adviser. (https://religiouslife.columbia.edu/content/religious-life-advisers)
- The Ombuds Office (https://ombuds.columbia.edu) provides confidential support to discuss many concerns and issues.

Don't allow building access blindly.

Verify a visitor's identity over the intercom before letting them in. Keep an eye out for suspicious activity like loitering and "piggybacking." People may wait outside the building for someone to leave or enter, allowing them access to an open door. If you believe someone has entered the building on false pretenses, call Public Safety immediately.
(https://publicsafety.columbia.edu/crimepreventiontips)

Protocol for Potential Visits By U.S. Immigration and Customs Enforcement (ICE) Agents

https://publicsafety.columbia.edu/content/protocol-potential-visits-campus-us-immigration-and-custom s-enforcement-ice-agents

For the FAQ please visit:
https://publicsafety.columbia.edu/content/frequently-asked-questions-visits-campus-us-immigration-and customs-enforcement-ice

5.9 Appendix I: Fellowship Support for Doctoral Students in Statistics

(Version: 2023.9.15)

Please find below a detailed breakdown of the annual guaranteed fellowship support offered to doctoral students in Statistics for the 2024-2025 academic year.

- Academic Year Stipend* $35,353
- Summer Stipend $6,365
- Tuition** $55,184
- Health Fees/Ins Premium $6,343
- Univ Service & Support Fee $1,204
- International Student Fee $320 (if applicable)
- Total for Domestic Students $104, 449
- Total for Int'l Students $104,769

*Students appointed as student officers of instruction or research receive a salary of $36,060.

**Tuition for doctoral students registered for Residence Units. Tuition costs for students registered for Extended Residence and Matriculation and Facilities may be found on the Cost of Attendance page.

Other benefits include:

- Guaranteed Columbia housing for five academic years
- Full health insurance coverage on the student plan for eligible dependents
- Health insurance coverage while on an official medical leave
- Subsidy towards optional dental insurance plan
- Accommodation for Parental Responsibilities
- Child-care subsidy
- Funding to attend conferences
- GSAS International Travel Awards
- Coverage of Internet fee for students in university housing
- Printing quota upgrade when not on appointment
- Gym access during funding-eligible years

5.10 Appendix J: Department Student Governance

(Version: 2023.9.13)

Student officers are elected by their peers at the last student seminar of each academic year, which typically takes place in late April or early May. These representatives of their fellow Ph.D. students lead activities that contribute to the department's vigorous department community. The department leadership (both faculty and admin) is committed to supporting the work of the student officers through mentoring and guidance, financial resources, faculty engagement, and administrative support.

Responsibilities

- PhD Student Representative
  - Attend open faculty meetings to represent the Ph.D. students' perspective.
  - Working closely with DGS and ADAA, provide assistance in the TA assignment process.
  - Working closely with ADAA, provide assistance in the Ph.D. office assignment process and discussion with respect to student space updates.
  - Working closely with DGS and ADAA, help organize activities, and recruit student volunteers for the admitted Ph.D. visit day and the fall orientation.
  - Assist with communication between the department and the Ph.D. students.
  - Lead an organization committee for the annual Minghui Yu Conference.
    - Plan logistics of the conference under the annual budget (see below).
    - See below for the procedure for organizing an event, which applies to the organization of the Minghui conference.
  - Student rep receives a one-course reduction in TA duties.
- Student Seminar Organizers
  - Organize weekly *Student Seminars* to broaden students' exposure to topics not covered in other departmental seminars and to create more opportunities for discussions among students.
  - Plan lunches served for the *Student Seminars* under the annual budget (see below), working closely with the Financial Assistant (Anthony) and Administrative Assistant (Janice). This includes managing a clean-up schedule staffed by PhD Student volunteers.

Major activities during a typical academic year

	Student Rep	Seminar Organizers	Social Chairs
Summer	TA assignments; Orientation	Planning	
Fall		Seminar organization	Student Retreat
Winter	TA assignments	Planning	
Spring	Ph.D. visit day; Minghui Conference	Seminar organization	

Budgets

Student officers will be responsible for monitoring the spending of their budgets, working closely with the department's financial team[12]. They should consult with ADAA for guidance whenever possible, especially with respect to university policies and alignment with department missions. These budgets operate independently and can NOT be pooled. Misuse of funds may result in audit and suspension of activities.

Student officers and event organizers are expected to comply with university policies, such as those on alcohol, food, business expenses, etc. ADAA and the financial team will offer guidance, consultation, and administrative support.

Procedure for the organization of an event

- Discuss with the ADAA, Cindy Meekins, event ideas for feedback as early as possible.
- An event proposal is **required** for all events that would incur spending
- **At least four weeks** prior to the event, submit a brief Event Proposal Form (monitored by ADAA, Cindy Meekins), which contains the following basic information.
  - Date/Time of the event
  - Main contact/organizers
  - Purpose of the event
  - Targeted participants
  - Proposed venue
  - Will there be alcohol at the event
  - Estimated total cost
  - Complete the University-required online Alcohol Management Training
- ADAA, Cindy Meekins will determine if a prior approval (by department, school, and/or other entities) is needed for this event per university policies (e.g., according to university policy on alcohol, university-sponsored events for students that serve alcohol would require approval by the school).
- Once the event proposal is approved, event organizers will work closely with the Financial Assistant, Anthony Cruz, on venue contracts and/or catering orders.
- Event contracts and orders will be reviewed by DAAF, Dood Kalicharan and ADAA, Cindy Meekins. All contracts will need to be signed by DAAF, Dood Kalicharan.
- **At least two weeks** prior to the event, the announcement of the event should be made to all who are invited. The department's admin team will offer assistance.
- Post-event documents, final receipts or invoices, and a short event report on participants should be submitted to the Financial Assistant, Anthony Cruz at ac1012@columbia.edu for processing. Copies of the event report should be shared with ADAA, Cindy Meekins for bookkeeping purposes.

[12] DAAF (Dood), ADFG (Rezarta) and Financial Analyst (Anthony).

Reporting

Student officers, through their leadership and representation of the student body, contribute to our efforts to create an inclusive and equitable department climate. It is, therefore, important for the student officers to report their work back to the student body to ensure transparency and to build buy-in. We suggest the student officers prepare a short presentation of their work for the last student seminar of the academic year to highlight their wins. They are also encouraged to collect feedback from their peers on the goals for the next academic year, which could be discussed with department leadership at the annual student officer transition meeting in May (see below).

Elections for Student Officers and Transitions

The election of student officers takes place in the last student seminar, organized by the current student representative. Each May, after new student officers are elected by their peers. ADAA will organize a transition meeting of the department leadership, the admin team, the newly elected officers, and the “retiring” officers to discuss next year’s goals, budgets, and other improvements.

5.11 Appendix K: PhD Program Degree Requirements Checklist

(Version: 2024.8.13)

PhD Program Degree Requirements Checklist

- ☐ **Qualifying Exams Requirements**
  - ☐ **Qualifying Exams (2 Total)**
    - ☐ Core Competency (1)
    - ☐ Qualifying Subject Exam Options (1)
      - ☐ Applied
      - ☐ Inference
      - ☐ Probability

- ☐ **Coursework Requirements**
  - ☐ **First Semester Core Sequence Courses (3 Total)**
    - ☐ STAT GR6101, and
    - ☐ STAT GR6201, and
    - ☐ STAT GR6301
  - ☐ **Core Course Options (4 Out of 7)**
    - ☐ STAT GR6102-GR6103 (Applied Statistics II-III), and/or
    - ☐ STAT GR6202-GR6203 (Theoretical Statistics II-III), and/or
    - ☐ STAT GR6302-GR6303 (Probability Theory II-III), and/or
    - ☐ STAT GR6104 (Statistical Computing)
  - ☐ **Elective Options (1 Per Year/3 Total)**
    - ☐ 1 or more courses from STAT 6102-6104, 6202-6203, 6302-6303, and/or GR6103, GR6203, GR6303, if not counted above, and/or
    - ☐ 1 or more Statistics Topics Courses, and/or
    - ☐ 1 or more approved course
  - ☐ **Statistical Practicum Options (1 Total)**
    - ☐ STAT GR6105, or
    - ☐ STAT GR6106, or
    - ☐ Summer Internship, or
    - ☐ Research Immersion
  - ☐ **STAT GR8001 Graduate Independent Research (1 Per Semester/Every Semester Starting Year 2)**
    - ☐ Year 1 (optional), and/or
    - ☐ Years 2-3 with department faculty, and
    - ☐ Year 3-5/6 with department thesis advisor(s)
  - ☐ **Seminar Registration Options (1 Per Semester/Every Semester)**

- ☐ Statistics Seminar Series (GR9201)
- ☐ Seminar in Probability Theory (GR9301)
- ☐ Seminar in Applied Probability and Risk (GR9302)
- ☐ Seminar in Mathematical Finance (GR9303)

☐ **Master of Arts (MA) Degree Requirements** (required for MPhil)

- ☐ 7 core courses completed

☐ **Dissertation Prospectus (Orals) Degree Requirements** (required for MPhil)

- ☐ PD Form submitted to ADAA, Cindy Meekins

☐ **Master of Philosophy (MPhil) Degree Requirements** (required for PhD)

- ☐ ADAA, Cindy Meekins completes this form for you

☐ **Dissertation Defense Degree Requirements** (required for PhD)

- ☐ DA Form submitted to ADAA, Cindy Meekins
- ☐ Distribution to Defense Committee
- ☐ Dissertation & Defense Voting Sheet
- ☐ GSAS Electronic Deposit Gateway
  - ☐ GSAS $85 Deposit Fee
- ☐ Approval Card to ADAA, Cindy Meekins