Harvard Statistics Department
Statistics 91r Project Form

INFORMATION: Stat 91r, Supervised Reading and Research, is a SAT/UNS graded course and counts as a related fields course for the statistics concentration. It may be taken once for concentration credit and counts as the one P/F or SAT/UNS course towards the concentration. It can also be taken a second time for college credit. The Statistics Directors of Undergraduate Studies (co-DUS Joe Blitzstein and Kelly McConville and mainly associate-DUS Kevin Rader) are the instructors officially "offering" the course for registration purposes, but in reality, each individual student will be supervised by an individual faculty member. Any Statistics Department faculty member can be the supervisor (as can non-Stat faculty, with prior approval from a DUS). This document is an internal Statistics Department form documenting the understanding between the student, the Statistics faculty supervisor, and DUS. This form should describe the student's project and the basis on which the supervisor will evaluate it (submission of a report, presentation, etc.), and must be signed by all parties.

INSTRUCTIONS: The student and supervisor should exchange this document electronically until both are satisfied with its description of the project and the basis for evaluation. The student "signs" at the bottom and sends the "signed" form to the supervisor. Then the supervisor "signs" at the bottom and emails the signed copy to the associate-DUS, **Kevin Rader (rader@stat.harvard.edu**) and cc: the Statistics Programs Administrator, **Kathleen Cloutier (cloutier@fas.harvard.edu**) from the supervisor's official Harvard email address. The DUS will officially register the student for the course only upon receipt of the signed form from the supervisor. Student and supervisor will both receive copies of the completed document, signed by one of the DUS.

Semester (mark "X"): [X] Fall   [ ] Spring   Year: [2023]

Student's Name:	Phuong Linh (Linh) Vu
Student's Email:	linhvu@college.harvard.edu
Instructor's Name:	Ronald Ferguson; Kevin Rader
Instructor's Email:	ronald_ferguson@hks.harvard.edu; rader@stat.harvard.edu

Provide a brief description of the project for this course:

Goal of project: I am interested in learning about how teachers' and students' perceptions of the classroom experience correlate with and influence each other. My advisor Prof. Ron Ferguson has a dataset from Tripod with more than 30,000 observations.

About the dataset: The dataset contains demographic information (gender, racial background, and socioeconomic indicators like parental education, language(s) spoken at home, number of resources at home such as books or computers, etc.) and survey questions and answers from both students and teachers. The questions explore how students perceive the class (whether they feel respected by peers and teachers, feel challenged, are motivated to learn, feel welcomed, etc) and how the teachers perceive the class (how they teach, manage classroom environment, expect students to learn, etc). Most of the data was collected in 2007 and 2008. A detailed list of questions and further information about the dataset are included in this email.

Methods: I will be using STATA and multivariate analysis tools to analyze the dataset. I plan to develop generalized linear mixed models to investigate the between-classroom and within-classroom differences of students' and teachers' experiences and determine which variables of the students' experience best predict the teachers' experience (or vice versa). The models will be hierarchical because the dataset has information at the district, school, and classroom levels.

Advisors: Prof. Ron Ferguson (Adjunct Lecturer in Public Policy at HKS) will be supervising me on the education-related components of the project, and Kevin Rader (Senior preceptor in Statistics) will be advising me on the statistical components of the project.

Describe the basis on which the project will be evaluated. Work must be submitted to your supervising instructor and the associate-DUS (Kevin Rader) by the last day of the reading period, unless an earlier date is specified here:

I will write up my findings into a 10-15-page report (including relevant codes and figures). I will submit the report by the last day of the reading period and will make the report available online.

["/s/" = sign by typing]

Student's signature: /s/ Linh   Date: May 9th, 2023

Instructor's signature: /s/   Date:

DUS's signature: /s/   Date: