

RI Faculty Projects 2018-2019

Faculty	Department	Project Titles	Explanation of types of research and tasks	# of students	More information about faculty
Tran, Huy	Aerospace Engineering	Machine Learning Prediction of Weather-related Flight Delays	Applied research using quantitative methods. Familiarity with Python is recommended, but not necessary; an interest in programming is required. Dr. Tran expects would expect 5-10 hours/week. Additional hours would be compensated through independent study course credit.	2	https://engineering.illinois.edu/directory/profile/huytran
Smith, Shardé	African American Studies	Examining Effects of Racial Discrimination in Interpersonal Relationships	Basic research using quantitative methods. Students will assist with data entry, data coding, and/or literature reviews on one of two projects: (1) Race-related content in social media or (2) effects of racial discrimination and socialization in the African American parent-child context.	2	www.afro.illinois.edu/people/snsmith
Clancy, Kathryn	Anthropology	How stressors affect women's health	Action, ethnographic research using both quantitative and qualitative methods; work includes data coding, cataloguing; graphic desing, library searchers' photocopying; working with spreadsheets, wetlab, working with human subjects, and Original Research (develop questions, design experiment/study, administer protocols). "Depending on their interests and prior experience, students will be tasked with helping with lab work (thawing, aliquoting samples), doing data entry work, and/or statistical work. They may have the option to do some qualitative coding if they already have experience/interest. If they stick around through the summer they can work with us in GAMES camp." http://wie.engineering.illinois.edu/k-12-programs-resources/gameswyse-camp/	4	http://www.anthro.illinois.edu/people/kclancy
Polk, John	Anthropology	Human locomotor and bone biomechanics	Students will assist with data collection and analysis for one of several projects that evaluate differences in human or animal locomotor performance, or bone biology.	3	www.anthro.illinois.edu/people/jdpolk
Stumpf, Rebecca	Anthropology, Animal Biology	Primate microbiome diversity and microbial/viral transmission routes	Applied, basic research using quantitative methods. Students "must have excellent attention to detail. Excel, database experience, strong writing skills, must be curious and have strong, authentic interest." Students can be involved in archival work, article summaries, spreadsheet data entry, graphic design, working with animal and human subjects, and original research.	3	https://rstumpflab.weebly.com/
Husain, Fatima	Beckman Institute, Speech and Hearing Science, Neuroscience	Understanding how the brain processes sounds	Applied, basic, clinical expirmental research using qualitiative methods. Student will have opportunity to be involved in one of several ongoing projects related to neuroscience and brain imaging and hearing disorders. You will be working with sound files. "The more computer savvy the student, the better. We will teach about hearing, neurosciecnce, and some programming. But if they have any prior exposure to these topics, the better."	1	http://www.acnlab.com/

Sweedler, Jonathon	Chemistry	Understanding the brain a neuron at a time: measuring the brain chemistry during	You will be working with a graduate student in my research group on a research project to understand the differences in the chemistry in the distinct cells of the rat brain, with the long term goal to understand how this chemistry changes during	2	www.chemistry.illinois.edu/faculty/Jonathan_Sweedler.h tml
Elbanna, Ahmed	Civil & Environmental Eng	Building simulators for earthquake forecasting	Applied, basic, and quantitative research. Students will be doing data coding, learn special software, and have opportunity to do original research (develop questions, design experiment/study, administer protocols). "The students will contribute to code development and running simulations of mathematical systems that generate statistics similar to earthquakes. The students will then apply machine learning tools to analyze the data and search for predictive signatures. Dr. Elbanna encourages the students to familiarize themselves with Python and machine	2	https://cee.illinois.edu/direc tory/profile/elbanna2
Lombardo, Frank	Civil & Environmental Eng	Using Social Media to Improve Wind Damage Assessments	Applied, case study, experimentla research using quantitative methods. Students will be 1) Extracting of wind damage information from social media data (e.g., Twitter); 2) Assessment of wind damage from social media data; 3) Encouragement of public to participate in similar assessments	1	http://cee.illinois.edu/direct ory/profile/lombaf
Stillwell, Ashlynn	Civil & Environmental Eng	Evaluating Water and Energy Sustainability in the Built Environment	Applied, basic, computational, case study research. Various tasks according to student interest and fit. Data entry, graphic design, databases, sample prep, article summaries, sample archiving.	2	www.cee.illinois.edu/directo ry/profile/ashlynn
Tinoco, Rafael	Civil & Environmental Eng	Flow-sediment interactions in rivers and coastal areas: a laboratory study	Applied, basic, experimental research using quantitative methods. Students will analyzing data using matlab or software of choice. Availability to travel to laboratory in Rantoul required if interested in physical experiments.	2	http://cee.illinois.edu/direct ory/profile/tinoco

Gutierrez, Rochelle	Education, Curriculum and Instruction	Preparing high school mathematics teachers to address social justice in schools	Action, case study research using qualitative methods. I have audio recordings of seminar and mentoring sessions with teachers who are learning to develop an advocacy stance and practical skills for teaching mathematics to adolescents of color. The focus of the project is to understand how these teachers made sense of different activities we ran with them. We are interested in the impact of specific activities on the whole group of teachers as well as how groups of activities	2	https://education.illinois.edu/faculty/rg1
Christianson, Kiel	Educational Psychology	Exploring the link between re-reading and reading comprehension	Experimental research; quantitative methods; data collection (reaction time and eye tracking data); helping with MTurk experiments, assisting grad research assistants; lab meetings usually every other Friday in the afternoon.	2	https://education.illinois.edu/faculty/kiel ;
Gilbert, Matthew	History	Reconceptualizing Chief Illiniwek as an Ambassador for the University of Illinois, 1930-1960	Students will be conducting research in online historical newspaper archives, and various archival collections housed at the University of Illinois Library. Research will seek to uncover and better understand the many ways university officials used Chief Illiniwek as an ambassador to people of Illinois and beyond from 1930 to 1960. Students will learn historical methodologies including how to use archives,	2	http://www.ais.illinois.edu/people/tewa
Jarrett, Robin	Human Dvlpmt & Family Studies	School Readiness among Low-income African American and Latino families and children	applied, basic, ethnographic research using qualitative methods. Students will be involved in library searches, article summaries, data coding and entry, transcribing interviews, writing, and working with special software.	3	https://hdfs.illinois.edu/directory/rjarrett
Hernandez, Manuel	Kinesiology and Community Health	Control of human movement in complex virtual environments	Basic, experimental research using quantitative, computational methods. Students have the opportunity to assist with one of these projects 1) ongoing human subject testing and data collection, 2) development of computational models of human movement, or 3) signal processing of brain-body data for assessment of changes due to aging, anxiety, or movement disorders.	4	http://mfp.kch.illinois.edu/
Rogers, Wendy	Kinesiology and Community Health	Evaluating technologies from a human factors perspective in order to help with older adults	Applied, clinical research using quantitative and qualitative methods. Research assistants aid in all aspects of the research projects from the participant visits, to transcription, to completing literature reviews about the topic.	2	http://hfaging.illinois.edu/

Rice, Laura	Kinesiology and Community Health	Fall Education in Wheelchair Users with Multiple Sclerosis	Clinical research working with human subjects where students will assist in data coding, library searches, transcriptions, writing, and field work. Lab meetings every other Friday, 10:45am.	1	www.kch.illinois.edu/Rice-Laura
Whitaker, Rachel	MCB, Microbiology	Tracking antibiotic resistance in bacteria	Basic research using quantitative methods. Students will be involved in original Research (develop questions, design experiment/study, administer protocols) and using special software programs to perform computational analysis of bacterial genomes. Lab meeting attendance is required: Fridays 2-4pm. Dr. Whitaker would	2	http://publish.illinois.edu/whitakerlab/
Wilson, Brenda	MCB, Microbiology	Developing bacterial toxin-inspired drug delivery systems for therapeutic	Basic, experimental, translational research using quantitative methods. Students will be doing wet lab work and original research. In the beginning the students will be reading and learning about the type of work we do in the lab. They will be	2	https://mcb.illinois.edu/faculty/profile/wilson7
Dunn, Alison	Mechanical Science and Engineering	Measuring the changing surface properties of a gel as it dries out	Basic, applied, quantitative research; students will use mechanical testing instruments and a lab camera, process data and images for geometric changes	4	https://mechanical.illinois.edu/directory/profile/acd

Ewoldt, Randy	Mechanical Science and Engineering	Slow-mo video and splashing physics	Applied, basic, experimental research using quantitative methods. Students will learn special software to use high-speed (slow-motion) cameras for studying splashing and fluid physics.	2	http://ewoldt.mechanical.illinois.edu/
Kersh, Marianna	Mechanical Science and Engineering	Investigating the role of structure and muscle forces on bone strength	Applied, basic, experimental research using quantitative methods. Students will be coding data, processing images, and running statistical analyses to Help to analyze images of bone to quantify structural parameters and relate these along with muscle forces (previously collected) to prediction of strain.	2	http://uitbl.mechse.illinois.edu/
Tipei, Sever	Music	Using and contributing to software for composition and sound design	Dr. Tipei regards the computer as a collaborator whose skills and abilities complement those of the human artist. He sees the composition of music both as an experimental and a speculative endeavor that delivers a particular world view. Students will be either programming in C++ or using a Graphic User Interface to compose music and to build tools for music composition. Knowledge of	6	www.music.illinois.edu/faculty/sever-tipei
Miller, James	Natural Res & Env Sci	Ecological field research on birds	1. Modeling in Python (Samniqueka Halsey) This project would be to start recoding a model from netlogo to python language. I'm seeking an undergrad in engineering or computer science that would like to learn how to create a model in the python language. Ideally this will be an	1	www.nres.illinois.edu/directory/jrmillr
Mohaghegh, Zahra	NPRE, ISE, Informatics	multidisciplinary risk analysis related to risk and safety issues of industries	Quantitative researchers in which students will be involved in data coding and entry, library searches, writing, and original research.	5	https://beckman.illinois.edu/directory/person/zahra13
Zhang, Yang	Nuclear, Plasma, and Radiological Engineering; Materials Science and Engineering; Electrical and Computer Engineering	Design and Manufacture of Modular Intelligent Self-healing Soft Robotic Arm (MISSRA)	Applied, experimental research using quantitative methods. Students will work with the graduate students to design and manufacture soft robots and be involved in lab work (3D printing, milling, etc.) and programming. Students must be hard-working.	2	http://zhang.engineering.illinois.edu/

Hunter, Carla	Psychology	Ethnic Diversity as a Source of Similarities and Differences Within Black Individuals Living in the U.S.	Clinical research using quantitative methods. Student will be involved in literature reviews and annotated bibliographies and some data coding and entry, photocopying, working with spreadsheets and transcriptions.	1	http://heritagelab.psychology.illinois.edu/
Benjamin, Aaron	Psychology, Cognitive	Basic and applied problems in human learning and memory	Data coding; library searches; original research; work with human subjects; many on-going projects students can join; lab meetings Fridays 9-11am (not required but strongly encouraged.); safety training required.	2	http://labs.psychology.illinois.edu/~asbenjam/
Schneider, Jodi	School of Information Science	What is known about fake science?	Research in informatics using qualitative and quantitative methods. Students will be involved in library searches, article summaries, data coding, special software, writing, and original research. "You will read papers, manually annotate and extract information using a web-based review tool. You can also learn about and experiment with informatics tools." Lab meetings: Fridays 12 PM to 12:50 PM at the iSchool.	3	https://ischool.illinois.edu/people/jodi-schneider
Magee, Rachel	School of Information Sciences	Young Researchers: Collaborating with Youth to Understand Technology Practices	Qualitative, participatory research where you work with youth as co-researchers to develop research studies.	3	https://ischool.illinois.edu/people/rachel-magee
Windsor, Liliane	School of Social Work	Community Wise: An innovative multi-level intervention to address substance misuse related inequalities	Applied, ethnographic research. Students will help with running a community based participatory research project that is implementing a randomized experiment to develop a substance use disorder intervention in New Jersey. They will participate in online meetings, help with participant retention and tracking through online databases and phone calls, data coding of voice recorded clinical sessions with men that have a history of incarceration and substance use. Students must be committed to social justice and willing to work with a predominantly black and urban population.	3	www.newarkccb.org ; http://socialwork.illinois.edu/faculty-staff/liliane-windsor/
Switzky, Rachel	Siebel Center for Design	Integrating Experiential Learning and Design Thinking into Campus Curricula	Students will be helping Prof. Switzky with the prototyping activities we will be conducting for piloting the Siebel Center for Design's strategy. A great lab to join no matter what your major is.	6	https://designcenter.illinois.edu/team/

Flaherty, Mary	Speech and Hearing Science	Understanding and improving speech perception in noisy environments for children with and without hearing loss	Applied, experimental research using quantitative methods. Students work with adult and children participants on behavioral research experiments. Includes tests of hearing, speech understanding, working memory, cognition. Students assist with recruitment, data collection and data entry. Student will also get hands on experience with hearing assessments and cognitive testing. Opportunities for audio editing, recording and design.	2	http://shs.illinois.edu/faculty
Edwards, Mary	Urbana and Regional Planning	Understanding local policies and programs for aging in place	Basic, applied, evaluative and case study research using qualitative and quantitative methods looking at "aging in place," which the U.S. Centers for Disease Control and Prevention defines as "the ability to live in one's own home and community safely, independently, and comfortably, regardless of age, income, or ability level."	1	http://www.urban.illinois.edu/people/faculty-directory/core-faculty/5-mary-m-edwards