STS Summer Research College 2019 Project Descriptions

Building Empathy with Virtual Reality
Professor Jeremy Bailenson

How can Virtual Reality (VR) applications be designed to create visceral experiences that affect human empathy? VR has previously been described as the “ultimate empathy machine”, and research has shown that using VR as a perspective-taking tool can be an effective way to affect empathy. However, further research must be done to understand how VR can be used to facilitate prosocial behavior in complex, real-world situations. This project will explore how immersive virtual worlds can facilitate perspective-taking, affect attitude, and impact empathy regarding issues of race, gender, and inequality. This summer, student researchers will design and build virtual reality applications that will be used to further empathy research. Students will be responsible for programming and building 3D models for these virtual worlds. The ideal student will have experience in object-oriented programming (C#, Python, or similar). Experience coding and 3D modeling for Unity or Unreal Engine is preferred, but not necessary. Additionally, applicants should be organized, dedicated, and strongly self-motivated.

Gendered Innovations in Science, Health & Medicine, Engineering, and Environment
Professor Londa Schiebinger

Gendered Innovations is a global research project networking over 120 researchers across North America, Europe, Asia, and South America. This project, launched at Stanford in 2011, harnesses the creative power of sex and gender analysis for innovation and discovery. In biomedicine, a deeper understanding of the genetic and hormone-mediated basis for sex differences in immunity, for example, promises insights into novel cancer immunotherapies. Or, in machine learning, recognizing that facial recognition systems misclassify gender far more often when presented with darker-skinned women compared with lighter-skinned men has led to refinements in computer vision.

Students will work directly with me to provide research for new case studies and methods, and help write drafts of materials for expert review. Students should have excellent writing and research skills, be detail-oriented, and self-motivated. Students with skills making videos and working with social media are welcome. A strong interest in gender, science, and technology is required (but no special preparation in S&T is required). For examples of case studies and methods, please see genderedinnovations.stanford.edu
Ethics, Nuclear Weapons, and Public Opinion
Professor Scott D. Sagan

The summer research assistants will work as a team to support Professor Sagan on a project titled, “Ethics, Nuclear Weapons, and Public Opinion.” The project employs experimental survey data to examine public opinion on nuclear weapons and wartime ethics. The summer students will focus on two sub-projects based on the survey data. The first explores the effect of priming on public willingness to support nuclear weapons use. The second examines public opinion across four countries on due care and risk acceptance. In support of Professor Sagan as he drafts scholarly articles, the research assistants will: (a) review coding of survey responses and analyze previous polling data; (b) conduct background research on related articles and books, identify relevant literature on ethics and the use of force; and (c) help produce manuscript drafts. Students should have excellent writing and research skills, and be attentive to detail. No prior social science research experience is required, but students should have experience conducting research using Stanford libraries, web-based resources, and e-journals, as well as preparing footnotes and bibliographies. Preference will be given to students who have taken POLSCI 1: Introduction to International Relations, STS 1: The Public Life of Science and Technology, POLSCI 114S: International Security in a Changing World (STS cross-listed course), MS&E 193: Technology and National Security (STS cross-listed course), and/or Thinking Matters 19: Rules of War.

Probing the tobacco industry’s secret archives! From your home computer!
Professor Robert Proctor

I’m writing a history of expert medical participation in litigation against the cigarette industry, and would like to have someone help me with analyzing transcripts from trial testimony and videos of actual trial proceedings. This is real Law and Order drama, with much at stake—and should be fun! I’m interested in having someone analyze the kinds of arguments put forward by industry witnesses, and the kinds of claims made by the industry to exonerate their bad behavior. All of these archives are online and searchable, so it can be done from anywhere with an Internet connection—so that part is convenient. I’ve had students work on this in the past, and they always find it rewarding! I can train the student in how to find the best documents.
Challenges and Contributions of Civil Society Organizations in the San Francisco Bay Area
Professor Woody Powell

For the past eighteen years, we have been following a random sample of San Francisco Bay Area nonprofit organizations. We began with 200 sampled organizations in 2001; today, approximately 170 of them are still alive and functioning. One aspect of this project has looked at the way in which these nonprofit organizations, ranging from soup kitchens to art museums to soccer clubs to large hospitals to housing organizations, have adapted to the digital era. We have examined how these organizations have created webpages and what they do with their webpages. The transformations are quite notable, as nearly every organization has created a webpage and uses them to raise funds. But much more than fund raising happens on webpages. We find blogs, and various other tools for active discussion with key constituents. Many organizations now provide services directly through their webpages. We have also created a random sample of 150 organizations that we refer to as “digital natives” -- that is, nonprofits born after 2001. These organizations, we think, are not organizations that had to transition to the web, but rather were formed as a web-based world developed around them. We want to study whether there are notable differences between the digital natives and our sample of organizations founded in the 20th, and even the 19th century. There is much talk that digital natives are somehow different, but in the nonprofit field is that the case?

The student who works on this project will help us in analyses of interviews with the “digital natives.” We are presently fielding an online survey with them, and responses are trickling in. The survey has ample room for open-ended responses. We want to look at them and perhaps do follow up interviewing where appropriate. In addition, we are collecting data from annual reports, newsletters and webpages. We have developed tools for extracting web data, so that we can dig well beyond just the front surface portrait of the web and go deeper into the materials, PDFs, and various affordances that are available on an organization’s web page.

The STS student will work closely with Prof. Woody Powell, and Stanford sociology Ph.D. students Nick Sherefkin and Aaron Horvath. They will learn a variety of new methods for analyzing both survey and online data, as well as the skills for comparative organizational analysis.