16. Describe any personal or educational experiences or situations that have contributed to your desire to pursue advanced study in science, mathematics, or engineering. Also describe experiences integrating research and education, advancing diversity in science, and contributing to your community, both scholarly and social.

After graduating from Stanford, I spent a year as a Volunteer In Service To America (VISTA). VISTA is a domestic service program, which is part of Americorps, and similar in nature to the Peacecorps. Although I always knew I would return to school, I wanted to spend some time in other, non-academic settings. As a VISTA, I served in a small town in rural Arizona, working on an economic development program. The primary goal of my VISTA project was to encourage and provide support for low-income entrepreneurs in the area, setting up opportunities for small business and cottage industry. Needless to say, this endeavor represented a dramatic departure from my academic work in college. I was involved in community meetings, informational workshops, and school programs throughout the county, and during this time, nobody mentioned random assignment or F ratios. I learned something interesting, though. My research background, limited as it was, became an asset in this setting. Survey design, conceptualization of the relationships between variables, and outcome measurement were all aspects of my work that I could address largely because of my earlier research experience. I enjoyed my service tremendously, in and of itself, but I think the most important result of my time as a VISTA was the realization that my work had the potential to help others both individually and as a community. Much of the work conducted in the area of human service fails to make use of scientific findings and even the scientific method. Some of these problems are unavoidable. Outside of the laboratory, for example, it is sometimes impractical to arrange for control groups. All the same, the social sciences hold tremendous potential benefits for work in applied settings, methodologically and theoretically.

When I left VISTA, I wanted to work more intensively on integrating research and human service. I took a position with OMNI Research and Training, a company in Colorado, working as a research assistant on problems of drug and alcohol abuse in high school, juvenile justice, and disproportionate minority confinement. My work focused on providing communities with accurate, useful data regarding the local status of these issues, and to help them evaluate the potential benefits of various intervention efforts. Since I have returned to school, my interest in experimental control has rebounded somewhat, but I still hope to combine my academic and applied interests through research. I consider the integrated approach to be a tremendously useful framework, which holds great potential for both scholarly and real-world development.
Self-esteem is one of the most commonly discussed constructs in experimental psychology. It has been cited as an explanatory factor in phenomena ranging from in-group bias and stereotyping to perseverance and risk-taking. There is still a large degree of uncertainty, however, about what actually constitutes self-esteem, and how it affects human behavior. Two lines of research, proposed below, attempt to examine both the nature of self-esteem and the mechanisms by which individuals strive to maintain and enhance it.

Study 1: Self-Affirmation and Open-mindedness

People often show remarkable emotional reactions when they argue about their beliefs. In political discussions, for example, people who disagree rarely seem to engage in rational, open-minded analysis of their various opinions. Rather, discussions tend to become heated as liberals ignore and discount conservative arguments, and conservatives return the favor. People may even level humiliating personal attacks (with no political relevance) at advocates for the opposing side. The present study seeks to better understand this tendency by continuing and expanding work I began as an undergraduate (see description of previous research). Coincidentally, recent research conducted independently at the University of Waterloo has begun to investigate this same phenomenon. Results from both studies indicate that when people feel secure about themselves—when they are affirmed—they are more willing to rationally evaluate evidence that challenges an important belief. I hope to extend my previous research by examining the moment-by-moment reactions of people as they encounter belief-threatening information. By using equipment designed to gauge audience reactions to political debates, I intend to monitor the perceptions of participants as they view a mock debate on a personally important issue. Using these devices, the participants will be able to express their views about the strength of each argument they hear, and their perceptions of who is winning the debate. I expect to replicate earlier findings by showing that non-affirmed participants refuse to accept counter-attitudinal arguments, while affirmed participants consider the evidence more even-handedly. More importantly, I hope to elucidate the mechanisms behind this change. This research will investigate the extent to which affirmed participants 1) reduce their initial prejudice against the "other side," before even hearing counter-attitudinal arguments, and 2) become more open to new arguments that might otherwise provoke hostile and defensive reactions.

Study 2: Implicit and Explicit Self-Esteem

Currently, social psychological research is actively investigating the idea that people hold beliefs and attitudes that they are unwilling, or even unable, to openly express. One intriguing possibility is that people may hold these implicit attitudes towards themselves. Since self-esteem has typically been assessed using explicit procedures (e.g., the Rosenberg self-esteem scale, which simply asks a person to rate his or her own feelings of self-regard), researchers have begun to question the real meaning of the traditional measures. A number of efforts to gauge self-esteem implicitly have recently appeared in the literature. However, there has been no systematic examination of these measures to determine how they relate to one another and to more traditional, explicit measures of self-esteem. This type of analysis is critical to the development of a new psychological construct because it enables researchers to more accurately define and understand their terms. The first goal of the proposed research is to fill this gap in the existing research by administering various implicit and explicit self-esteem measures to a group of participants in a multi-trait, multi-method analysis. By examining response patterns, I hope to determine the convergent and discriminant validity of the scales currently in use, ultimately arriving at a better understanding of the utility of each.
The second, and perhaps more provocative, goal of this line of research is to investigate the nature of the discrepancy between explicit and implicit measures. It is natural to think that both kinds of measures attempt to gauge a single construct, namely self-esteem. Another possibility, however, is that they assess two qualitatively different constructs, explicit self-esteem (ESE) on one hand, and implicit self-esteem (ISE) on the other. Indeed, I hypothesize that ESE and ISE are actually distinct forms of self-regard (although they are probably positively correlated, in general – see figure). For example, while some people may have similar scores on both ESE and ISE (i.e., high on both or low on both, represented by the dark dots), others may have incongruent scores (i.e., high on one measure and low on the other, represented by the light dots). I hope to use these discrepancies to clarify the nature of self-esteem in general. I propose that an analysis of both forms of self-esteem and their various combinations may help elucidate some of the puzzling findings in the self-esteem literature. For example, is it possible that people who consciously claim to feel positively about themselves (high ESE), but who do not have positive self-views when assessed without their conscious awareness (low ISE) react differently than people who demonstrate positive self-views on both measures? If so, many studies in this area may be missing a crucial piece of the puzzle. By categorizing people solely in terms of ESE, researchers may incorrectly construe an interaction between two variables as a main effect for one.
My research as an undergraduate developed primarily from Claude Steele’s self-affirmation theory, which still informs many of my interests. Self-affirmation theory suggests that people strive to enhance and maintain an overall, global sense of adequacy and worth. They may do so by drawing on areas, or “domains,” of their lives that they consider important. Success in these domains contributes to an individual’s overall positive self-regard, while failure may endanger it. For example, a dedicated tennis player may be extremely threatened by the prospect of loosing a match, and a student may feel awful after failing a test. When a domain is threatened in this way, the person risks losing a source of esteem. In such a case, he or she may react by reinterpreting or rationalizing the domain-specific failure in an effort to protect the global sense of worth. For example, the student above may argue that the test was unfair and not truly indicative of ability. However, if given an opportunity to affirm the global self-concept by relying on positive outcomes in other, unrelated domains, the student may be able to tolerate the threat posed by failing the test. For example, by thinking about close family ties or belief in God, the student may obviate the need to downplay poor test performance. This process of recruiting positive self-regard from domains is called self-affirmation.

During my last year as an undergraduate, I participated in the honors program, which allowed me to conduct a research project from beginning to end. My thesis examined the extent to which a self-affirmation could affect participants’ perceptions of both a counter-attitudinal argument and the person who presents it. This research depended on the idea that beliefs can function as domains of the self-concept, acting as sources of self-esteem. As a result, I suggested, counter-attitudinal information would constitute a threat to the global self-concept when it challenged an important belief. To counteract that self-threat, people might defend their views by engaging in some sort of biased processing, either discrediting the information or denigrating the person who presents it. Participants whose sense of self-worth was independently affirmed, however, should have been able to tolerate the threatening information without engaging in biased processing.

This study examined beliefs about abortion using a 2 (pro-life vs. pro-choice) by 2 (affirmed vs. non-affirmed) factorial design. Participants read a transcript of a simulated debate on abortion designed to present strong arguments for each side. Subsequently, participants in the affirmed condition wrote about an important personal characteristic (unrelated to the issue of abortion), while those in the non-affirmed condition wrote about a relatively unimportant characteristic. I predicted that the value affirmation would reduce participants’ tendency to employ defensive strategies in ways that reinforce their established beliefs. In essence, the affirmation would enable them to rationally evaluate the counter-attitudinal arguments.

Compared with non-affirmed participants, those in the affirmed condition were, in fact, more even-handed when judging the advocate for the counter-attitudinal position. They also reported less confidence in their views after reading the debate, suggesting that they were more willing to accept and impartially evaluate information that contradicted their beliefs. The results of this study are clearly congruent with self-affirmation theory, showing that an individual may be motivated to resist counter-attitudinal information only when it threatens his or her general sense of self-worth. If esteem-needs are independently satisfied by an affirming activity, the individual may be able to tolerate incongruent information. This experiment was eventually included as Study 3 in a recent article by Cohen, Aronson, and Steele (in press).