Chairman Brooks, Ranking Member Lipinsky, and distinguished Members of the Committee, it is an honor to appear before you today.

I’ve been asked here to speak about my own basic research in the social and behavioral sciences, and how that work is being used by the military, business, and medicine to create a valuable return-on-investment for the US taxpayer.

My core research is in the area of emotion recognition—that is, our ability to recognize another person’s facial expressions, vocal tones, and body language. This is a skill so fundamental that its absence is a warning sign of serious disorders such as schizophrenia and autism, which is a growing epidemic in our country. Basic research to understand topics like this serves as a foundation for later applications that can sometimes be years down the road.

The Army Research Institute took the initiative to use my research showing that emotion recognition accuracy partially breaks down across cultures. To quote them: “The course of events in Iraq and Afghanistan has emphasized the role of human rather than technological solutions in influencing the outcome of conflicts, making interpersonal skills an increasingly important set of tools for the warfighter.” In some cases, errors in nonverbal communication have been tragic, for example at checkpoints in Iraq where soldiers have been involved in needless escalation of conflict with civilians because they could not tell who did versus did not wish them harm. I recently served as a consultant for the army’s efforts to incorporate nonverbal communication training for our men and women going overseas.

My work is also used by industry, as businesses increasingly focus on emotional intelligence and related skills in their workforce to achieve a competitive edge. Our US economy is increasingly service-oriented, collaborative, and global.

My work also has applications in medicine, given that the link between emotional skills and emotional disorders is so strong that some researchers use emotion recognition tests to monitor the effectiveness of their medical treatments.

As a business school professor, I cannot help but point out the unusually high return that we receive from investments in the basic sciences. America’s support of cutting-edge basic research is an engine of innovation that creates university-level opportunities attracting the best minds from all over the world. Education is a large export industry. Top scientists often stay in the US, start companies here, and pay taxes here, repaying the federal investments many times over.

Only the public sector can make these investments, because industry’s support is for research that has advanced closer to commercialization. Agencies like the NSF are in the best position to prioritize Federal funding for SBE research because they draw from groups of scientists across a range of disciplines and perspectives, rather than rely on any one person’s expertise.

The social and behavioral sciences in general are important because technology, health, industry, and politics are ultimately in the hands of people—who behave rationally and irrationally. A critique
often leveled at social scientists is that our research is obvious. Although findings can seem intuitive, the scientific process has demonstrated that many intuitions are wrong. For example, strange behavior is no more common at the full moon, people do not blindly follow suggestions under hypnosis, and people with schizophrenia do not have multiple personalities. These findings are useful beyond their curiosity value, in addressing real problems. For example, the stigma and misunderstanding around mental illnesses such as schizophrenia prevents many Americans for seeking treatments that are readily available, for the benefit of their families and economic productivity. In addition to intuitions that are wrong, many intuitions are also contradictory—for example, “too many cooks spoil the broth” and yet “many hands make light the work.” When staffing a team, we need to know which one is right.

Ultimately in supporting basic research, the nature of the scientific process is such that you cannot predict in advance where each project will lead. This is why it's important to fund a portfolio of projects, with the expectation that some will pay off and perhaps some will not.

From my own experience, I can tell you that I did not anticipate military applications at the time I conducted my work. Indeed, in the spring of 2007 a first-year member of congress proposed cancelling my NSF grant because he thought it sounded silly. Ironically, this occurred just as the Army identified this basic research as having applications for training our warfighters, and they issued a call for applied research to incorporate these findings.

This experience highlighted for me the relationship between basic and applied research, and how applied research uses basic research as its foundation. The NSF funds basic research. Some people might ask, at a time of fiscal crisis, whether we can afford to fund the Social Behavioral sciences at NSF. I believe that we can't afford not to.

Thank you for this opportunity to testify today, and I would be glad to answer any questions you might have.