

Stanford University Statement of Purpose

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Among my circle of friends, my name has come to be associated with the word “at.” I may have brought it upon myself, because I sign my name in emails as “M@” for M-att. But recently I realized that this connection has developed a deeper symbolism. Let me explain.

When my friends look at me, they see an active person; I am always “@” something. Sometimes the “@ function” seems driven by my extra-curricular activities, such as Campus Crusade, where I lead a Bible study and the worship team; Brownstone Selective House, where as a member I enjoy living and interacting with a diverse group of students; Duke Photo Group, where I engage in creative design; or the Yearbook, where as a staff photographer I apply this photographic creativity to capture salient moments while under the pressure of strict year-end publishing deadlines. Membership in Tau Beta Pi and Pi Tau Sigma, two engineering honor societies where I volunteer and collaborate with tomorrow’s engineers, are also part of the “@ function’s” domain. Finally, the “@ function” presses on into the workplace. Tutoring students one-on-one during weekly office hours for both computer science and statistics has intensified my passion for teaching. My research projects, such as developing part of a MATLAB graphical user interface for a gas turbine aeroelasticity program, and optimizing the fluid flow parameters and mechanical orienting mechanism for a solar energy concentrator, have given me experience in defining and pursuing exploratory problems. Finally, during an internship at Boston Scientific, I honed problem solving skills through information synthesis and analysis as I redesigned machine components and reprogrammed equipment. As you can see, the “@” is not just half my nickname; in my time in college it has become a symbol of my innovative and problem-solving nature.

After three years of engrossing activity at Duke, however, I have not forgotten how to look beyond myself to the world around me. From some vantage points, the picture is chilling. While developing nations make rapid progress, the associated population increase creates an often unaccounted-for increased demand for energy. This demand, largely met by continued combustion of fossil fuels, only promotes greater concern of global warming induced by carbon dioxide. On the decline, however, are the

reserves of such fuels that underpin today's industrial and technological revolution. The result, a growing group of people competing for a shrinking pool of resources, could cause conflict. So I ask myself, in light of the intensifying situation, what are we doing to evade catastrophe?

In some places, I see people who have identified problems but cannot provide solutions. One individual is Tim Pawlenty, governor of Minnesota, my home state. As newly appointed chair of the National Governor's Association, Pawlenty recently initiated a program to develop sustainable energy in America. This program moves in the right direction by providing funding and attention but will remain incomplete until it incorporates the practical technology that allows such goals to be realized.

However, at Stanford University, I see more involved individuals "@ work to create such technologies. I can identify with professors like Dr. Tom Bowman, Dr. Christopher Edwards, and Dr. Ronald Hanson, who pursue progressive ideas powered by laboratories and groups passionate about their work. I also see clusters like the Thermosciences Group, the Mechanics and Combustion Group, and the Global Climate and Energy Project that draw together other driven individuals to establish and accomplish common goals. And I can use my knowledge of mechanics, materials, and computing to meaningfully contribute to their ongoing research projects in advanced combustion methods and energy systems. I envision myself working for change as an issue-oriented experimentalist, equipped with the requisite skills of a solid educational background, strong work ethic, and visionary thinking. I seek an institution "@ which I can put these tools into practice, and I believe that institution is Stanford.

As I prepare to step into a future of graduate study, I reflect on my Duke experience. Throughout my college career I have been known as M@: always on the go and involved in multiple activities, associations, and jobs that have equipped me for the next step. Looking ahead, what opportunities could graduate school offer? I picture myself as a university professor, teaching a new generation and contributing to research that will allow it to resolve future energy and environmental issues. I am eager to make this realization unfold, beginning "@ Stanford University.