

Application Form
2006-07 TWRI Mills Scholarship Program

1. Name of Student and TAMU Student ID Number.
Kati Ireland Stoddard

2. Name and Contact Information for Faculty Advisor or Committee Chair.
Dr. Douglass Shaw
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3. Description of the student's proposed research, emphasizing how it will address a water resources-related concern (one page or less).

On January 22, 2001 the EPA changed the standard for arsenic in drinking water from 50 ppb to 10 ppb. This new standard will apply to approximately 54,000 water systems, however it is estimated that 3,000 of these community systems will not be able to comply by 2006. Small rural systems typically serving less than 10,000 people are the most likely systems to fail to comply due to lack of funds to facilitate the necessary technology changes in their water systems. Another source of arsenic contaminated water is private wells however these wells are neither inspected nor regulated by the federal government. Public system treatment can provide safe drinking water to public buildings such as schools, however children living in homes that use private wells for drinking water will continue to ingest arsenic despite public efforts to meet water quality standards. Consumption of arsenic contaminated water has been shown to cause both fatal and nonfatal illness. In 1999 a National Resource Council committee found that the risk of developing bladder and lung cancer increases from 1 in 1000 to 3 in 1000 when arsenic exposure increases from 3ppb to 10 ppb. Consumption of arsenic contaminated water can also cause a multitude of nonfatal diseases such as ischemic heart disease, diabetes mellitus, hypertension, skin cancer, and possibly prostate cancer, nephritis, nephrosis, hypertensive heart disease and non malignant respiratory disease.

My proposed research for my Masters of Science is to work with Dr. Shaw and the other investigators the EPA is funding from the University of Nevada, Reno, the University of Nevada, Las Vegas and Utah State University to investigate the perception and exposure of arsenic in private and public drinking water among households. This project assumes the children's protection from health risks are determined by the decisions of the heads of households'. Children's health is at risk if they live in homes that rely on drinking water from a public system that has not met compliance standards for arsenic or homes that are reliant on private wells. The objectives of this study are to gauge household's (both with and without children) perceived risk of ingesting arsenic contaminated well water, compare these perceived risks with objective risks, repeat this comparison for households relying on public water systems, discuss the discrepancies between the objective and perceived risks with the participating households, and to evaluate the behavioral responses to updated information. Data will be collected through household surveys and participation will be encouraged by providing free arsenic testing for private wells. Results from this project will help protect both children and adults from drinking contaminated drinking water by providing the up to date information necessary to counter possible public opposition to increases in water treatment costs. Public support of improved water treatment systems will be encouraged through education on the real risks of drinking arsenic-laden water. Vital information will also be provided by comparing the responses of public water system consumers and private well users which will shed more light on the valuation of children's health risks in a public

good and private good setting. By evaluating and comparing risks associated with arsenic in drinking water, scientists, the EPA, and public water treatment officials will better understand the public's motivations and thereby better equipped to protect them from the known health risks of arsenic.

4. Proposed use of funds resulting from this Scholarship (for example, to pay tuition, conduct research, etc.). One to two paragraphs or less.

The primary sources for my funding will come from the Water Management and Hydrologic Science program and the EPA funding for the project. My funding covers a monthly stipend and my tuition. The funds from this scholarship would allow me to fund myself for one month which would free up \$1,500 to be used for other important elements of the project.

5. Intended career path the student anticipates pursuing. (One to two paragraphs or less).

When asked what I plan on doing after I graduate, I usually say I want to save the planet. Since I was very young I have been dedicated to preserving and protecting the environment and education others on how to do so as well. I came to A&M to learn more about environmental science and decided to specialize in water related issues. This summer I am serving as an intern for the private consulting company HDR. HDR is an engineering firm that specializes in solving water and other environmental related issues. I am very interested in water quality, the use of natural processes such as wetlands for improving water quality, and the application of GIS to water related issues. Following graduation I plan to pursue a career as an Environmental Scientist for a private company, such as HDR, where I can fulfill my lifelong dream of saving the planet.