

Department of

# Science, Technology, & Society



*Developing*  
**Leaders of  
Innovation**



Understanding the relationship between technology and society is crucial to becoming a successful leader in any field.



### appropriate technology implementation in tourou, cameroon

this capstone project developed a framework for implementing a technology into a low-income community. the framework was tested by introducing a household ceramic water filter and disinfectant to the sixteen villages of tourou, cameroon.

community assessment: their perception, level of right priority factors

- social capacity
- income and social security
- technical capacity
- administrative capacity
- institutional development
- financial capacity
- environmental capacity
- social and culture capacity

the implementation team was kind to observe the best approach to learning and adoption rates on introduction of the technology. the final framework will be presented in a project, based need for the implementation and system, with the central goal of publishing the work online.

technologies developed and introduced include:

- ceramic water filter, using 2000 porous beads and naturally occurring, unprocessed local porous, and 100% of an affordable price of under \$5 by the volume water was included in the design for the a, age period for presentation in background (2000)
- solar water disinfectant, constructed from locally available and common materials including plastic, paper, tape, and porous water filter, solution for disinfecting pathogens including a 100% and 100% for the community of a price of under \$1.50.

why?

because 1.6 billion people lack the most basic safe drinking water in the world. 800 million live in 49 countries that lack access to even basic sanitation. 2.5 billion people live in 80 countries that lack access to even basic sanitation. 1.6 billion people live in 80 countries that lack access to even basic sanitation. 1.6 billion people live in 80 countries that lack access to even basic sanitation.

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**(tourou by the numbers)**  
 on average, a household 190 liters used on 150 of water each day  
 the type of water used for 8 hours. There are under 10 liters left after the 52% had to be lost of their water.  
 62% of people reported that they had experienced water shortage.  
 83% of people thought that water was the same as their family's drinking water.  
 48% of people reported water for drinking and water for other uses.  
 39% of households had someone who accepted the filter.  
 92% of households expressed a desire for a water filter.

community assessment was performed based on right priority factors

- 1. social capacity
- 2. income and social security
- 3. technical capacity
- 4. administrative capacity
- 5. institutional development
- 6. financial capacity
- 7. environmental capacity
- 8. social and culture capacity

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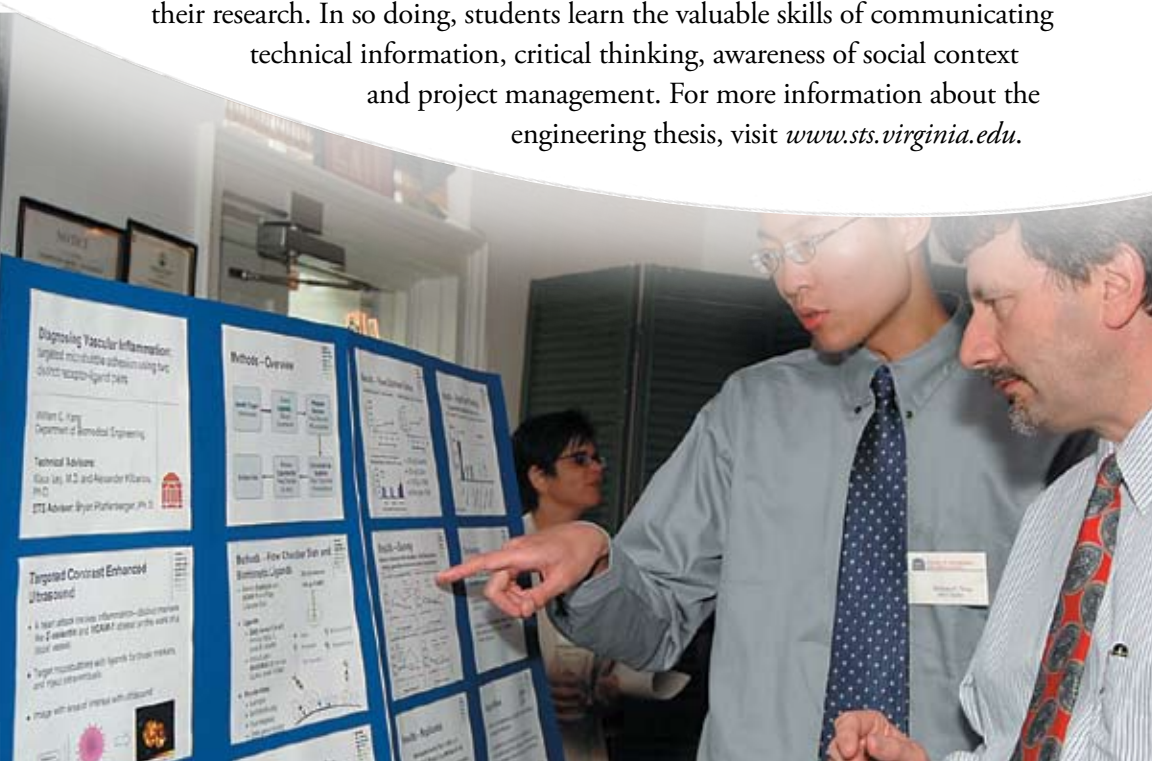
# Our Students

The University of Virginia Department of Science, Technology, and Society offers a comprehensive academic curriculum that embodies the vision of the University's founder, Thomas Jefferson. Jefferson believed that all students should be educated in the "useful sciences," an intellectual foundation that includes a firm grasp of **scientific principles, strong quantitative and communication skills, and the capacity for critical and creative thinking**. STS provides this foundation.

Our courses are designed to provide an understanding of the relationships among science, technology and society; to develop students' critical thinking; to develop their oral and written communication skills; and to enhance their sense of professional ethics.

All undergraduate students in the U.Va. Engineering School take the following STS courses — STS 101: Engineering, Technology and Society; at least one elective at the 200 level; STS 401: Western Technology and Culture; and STS 402: The Engineer, Ethics and Society. STS 101 introduces the nature of engineering knowledge and practice; the influential role of engineering in shaping the world; and the ways in which social institutions, practices and values influence engineers' work. For the 200-level elective, students choose from a diverse menu of courses, examples of which include: Utopias and Technological Society; the History of African Americans, Science and Technology; Religion and Technology; Intellectual Property; and Technology and Democracy.

In their fourth year, engineering students take the STS 401–STS 402 sequence while completing their senior thesis projects with the guidance of an STS adviser and an adviser within their major. Through the senior thesis, **students integrate their technical skills with an understanding of the role of technology in society and related ethical issues and consequences** in the form of a research or design project. In the thesis proposal (STS 401) and in the thesis itself (STS 402), students are asked to frame their projects in a social context and to address both the social and ethical issues related to their research. In so doing, students learn the valuable skills of communicating technical information, critical thinking, awareness of social context and project management. For more information about the engineering thesis, visit [www.sts.virginia.edu](http://www.sts.virginia.edu).



# Our Research

Our faculty have research backgrounds in history, literature, philosophy, sociology, anthropology, psychology and religious studies and are experts in science and technology studies. As a result, student and faculty **research throughout the department is often collaborative and spans many disciplines.**

For example, recent STS research topics include:

**ethics and nanotechnology;** *technology and democracy*, the history of Eads Bridge, an engineering milestone spanning the Mississippi River; *communication in engineering;* **technology in world history;** **women, gender and information technology;** **locating responsibility in computer systems;** fighting insects, and humans, with chemicals; **religion and technology;** *engineering ethics;* **public perception of science and technology;** *earth systems engineering and management;* **history of voting technology;** technological literacy; **technology and the civil war;** *and science and technology policy*

Beyond their own research, **our diverse faculty serve as advisers to all engineering undergraduates** as the students complete their senior theses and other independent research projects.

## Science & Technology Policy Internship Program

Among the many innovative programs provided through STS is the Science and Technology Policy Internship Program. In this program, approximately 10 students each year work as interns with policy makers, legislators, advocacy groups and others involved in technology policy. Interns spend a summer in cities like Washington, D.C.; Richmond, Va.; and even Paris! For more information, visit [www.sts.virginia.edu/pip](http://www.sts.virginia.edu/pip).



# Science, Technology, & Society at U.Va.

The University of Virginia Department of Science, Technology, and Society (STS), the **only program of its kind housed within an engineering school** at a national, comprehensive university, provides U.Va. Engineering students with a distinctive perspective not found in other engineering programs. Students in all engineering majors benefit from the STS perspective, which both broadens and deepens their understanding of technology and its significance — and what it means to be an engineer.

Through the STS program, students develop an intimate understanding of the social and ethical dimensions of science and technology, which enables them to become **effective leaders and entrepreneurs in a variety of fields**. Further, by exploring the interrelations among science, technology and society, students are better able to make a positive impact on the world as they work toward technological solutions that will advance human welfare and build a better future.

Our courses constitute an important component of the engineering education that students receive at U.Va. Each Engineering School undergraduate must take a minimum of four STS classes, including a two-course sequence that guides students in writing their senior theses. In addition, we offer three undergraduate STS minor degree programs — engineering business, the history of science and technology, and science and technology policy — open to all U.Va. undergraduates.



## Snapshot

At the U.Va. Department of Science, Technology, and Society ...

- All Engineering School students work with STS faculty advisers to complete their senior theses — research and design projects that have been required of all U.Va. Engineering students for more than 100 years
- Most courses are taught in a seminar style with 25 to 30 students
- 15 percent of Engineering School students earn an engineering business minor each year
- Our faculty are leaders in their scholarly disciplines: all are published authors, and many hold important positions in professional societies
- We collaborate with many other units across Grounds in addition to several companies and government agencies

THORNTON HALL



UNIVERSITY  
*of* VIRGINIA

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