

9-1-2009

## Service to America honoree's work makes people's lives safer

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### Recommended Citation

University, Furman (2009) "Service to America honoree's work makes people's lives safer," *Furman Magazine*: Vol. 52 : Iss. 3 , Article 28.

Available at: <https://scholarexchange.furman.edu/furman-magazine/vol52/iss3/28>

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## SERVICE TO AMERICA HONOREE'S WORK MAKES PEOPLE'S LIVES SAFER.....

*Fran Smith Ligler '73 of Potomac, Md., was one of 30 finalists for the 2009 Service to America Medals, which pay tribute to the nation's federal workforce by recognizing individuals who have quietly made significant contributions to the country. She was recognized in the Career Achievement category. Honorees are chosen based on their commitment and innovation, as well as the impact of their work. The 2009 finalists came from more than 20 federal agencies.*

*Ligler is a former member of the Furman board of trustees. This article appeared in the June 1 issue of The Washington Post as part of the newspaper's "Federal Players" series. Reprinted with permission.*



As senior scientist for biosensors and biomaterials at the Naval Research Laboratory (NRL), Ligler leads a group that invents and develops portable, automated sensors, which work by detecting toxic substances at a very low level to warn of their presence. In addition, she builds partnerships with other agencies and private sector partners to put these sensors to use.

"More than just leading a team, Fran inspires people," says Joel Schnur, former division head at the Center for Biomolecular Science and Engineering. He met Ligler when he interviewed her more than 20 years ago for a position in the new interdisciplinary department at the NRL that would focus on the self-assembly of biomolecules.

"I thought this was an interesting vision," says Ligler. "I could see that this was where breakthroughs were happening. So I joined Joel and, after a year, started the program in biosensors."

Ligler is known as someone who can bring people together to see projects through to completion. "Fran has successfully created a common language so that people from different sectors can understand each other," says Banahalli Ratna, division head at the Center for Biomolecular Science and Engineering.

"She has put together teams with very different backgrounds to work on a central goal."

Ligler holds 24 issued patents and has nine pending. She has also published 169 refereed journal papers, three books (with another forthcoming), 38 chapters and 66 full-length papers in conference proceedings.

One of her current projects involves developing a blood cell counter that will be more affordable and flexible than others currently in use. This device may enable scientists to test for diseases from the patient's bedside, instead of having to send tests out to a laboratory.

"I love my job for the adventure, the continuing exploration into new possibilities," says Ligler. "I also enjoy the opportunity to study scientists — the most curious, motivated and uninhibited species on the planet!"

Chris Myatt has worked with Ligler since 2004 and now has 10 staff members at his company, Precision Photonics, dedicated to commercializing her sensor technology. "This sensor technology will have an enormous impact on medical testing," he explains. "It will allow patients to get test results immediately and get on with their lives."

Ligler's efforts have enabled countless others to develop new devices. "I have demonstrated that it is possible to make small, automated sensor systems that have inspired others to build upon my work to develop tools that are fast, affordable and on-the-spot," she says.

Twenty-three years after entering government, Ligler still thinks working in government can be fun. But, more than anything, her service proves it can make people's lives safer.

**When Fran Ligler joined the government** in 1986 to work in the field of biosensors, she never imagined that she would stay longer than a few years.

"Before entering government service, I had five job offers," says Ligler. "So I took the one that sounded the most fun — working in government."

More than two decades later, she is still in government, where she has invented and developed multiple sensor systems to tackle real-world problems. Her most influential contributions have been with fiber-optic biosensors, which detect environmental pollutants and hazardous chemicals, and flow immunosensors, which are used to detect drugs, explosives and pesticides.

Extensive field work has been done with Ligler's sensors to study the detection of explosives contamination in groundwater, surface water and soil at military bases. They have also been used to diagnose infectious diseases, monitor the air for biothreat agents, identify pathogens in the food supply and support environmental clean-up efforts.