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Professor to Collaborate on Grant to Combat Terrorism

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Quick Facts

- Clifton Calloway, associate professor of chemistry, will participate in a National Science Foundation award given to Wake Forest University.
- The grant program is a partnership between NSF and the Department of Homeland Security.

ROCK HILL, S.C. - **Clifton Calloway**, an associate professor of chemistry of Winthrop University, will participate in a second National Science Foundation award given to Wake Forest University for development of a portable **atomic emission spectrometer** to measure radioactive metals in the environment.

The latest grant of $100,469 a year for three years continues the creation of a spectrometer to detect trace amounts of metals using a tungsten coil atomizer. An earlier grant in 2003 began the process, and this latest grant has expanded to include undergraduate students at Winthrop, graduate students at Western Carolina University and a world-renowned expert from the Federal University of Sao Carlos, Brazil.

Winthrop will receive about $20,000 a year for its participation. The grant program is a partnership between the **National Science Foundation** and the **Department of Homeland Security**.

Designed as a low cost, handheld instrument, the spectrometer would help assess the extent of contamination in soil, dust, water and crops in the event of a terrorist-activated bomb.

With such a system, field scientists around the world would be able to perform nuclear forensic analyses on the spot without the need for sample collection and shipment to laboratories. This would help scientists track more quickly the source of contamination or detonation and possibly those responsible. While multiple systems for detecting radioactive material prior to release are being developed, this proposed device would focus on those few cases where a release was not prevented. Working laboratory prototypes at Winthrop and Wake Forest are already being evaluated.

Calloway received his Ph.D. in analytical chemistry from Wake Forest and continues research there with his mentor during the summers. He has been a member of the Winthrop faculty since 1995.

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