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Winthrop Part of \$20 Million Federal Grant to Research Complex Materials

Winthrop University

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Quick Facts

- This project is for development of intelligently designed optical and magnetic materials, polymers and stimuli-responsive materials. These advanced materials will benefit commercial applications such as lasers, water treatment and regenerative medicine.
- Planned over five years, the initiative will involve eight Winthrop faculty members who will participate a state-wide consortium.



Debra Boyd

ROCK HILL, SOUTH CAROLINA – Winthrop University is part of a **\$20 million National Science Foundation award for Research Infrastructure and Improvement (RII)** to be given to 10 S.C. institutions.

This project is for development of intelligently designed optical and magnetic materials, polymers and stimuli-responsive materials. These advanced materials will benefit commercial applications such as lasers, water treatment and regenerative medicine.

Planned over five years, the initiative will involve 17 complementary faculty hires across research, comprehensive and historically black institutions to create a jurisdiction-wide consortium. They will train and mentor postdoctoral, graduate, and undergraduate students and provide outreach to kindergarten through twelfth grade students and also to the private sector.

The initiative, called the **Materials Assembly and Design Excellence in South Carolina: MADE in SC**, will be managed by the state's **Established Program to Stimulate Competitive Research (EPSCoR)**.

By combining innovative methodologies in advanced materials with workforce development, this initiative will stimulate a high-quality industrial base with a long-lasting economic impact on the Palmetto state and the nation, affecting a broad range of critically important modern industries.

Winthrop's Material Science Education and Research team is made up of **eight chemistry and physics faculty**. As part of this award, over the next five years, Winthrop will receive **\$1.1 million** of support to increase its materials science research capacity. These funds will be focused primarily on faculty, infrastructure and student development.

"Winthrop is pleased to help our state advance work in the knowledge of complex materials that may provide valuable commercial applications," said **Debra Boyd**, Winthrop's provost and executive vice president for academic affairs. "The project will focus on intelligently designed optical and magnetic materials, polymers, and materials to respond to stimuli and material that can interact and become integrated with living tissue. It is exciting that our students and faculty will have the opportunity to contribute to scientific and commercial innovations for our state."

Faculty development research funds will support three target faculty: **Fatima Amir** (electronic materials), **Maria Gelabert** (optical materials) and **Clifton Harris** (optical materials). Infrastructure development will focus on building and strengthening collaborative research networks involving chemistry faculty members **Jason Hurlbert** (biomaterials) and **Robin Lammi** (optical materials), and an investment of **\$330,000 in materials science undergraduate research equipment**.

The project will allow for **36 undergraduate students** to be involved in “MADE in SC” summer research projects. Winthrop’s grant also will pay for critically needed research supplies, travel, and support for undergraduate students and faculty.

"This project will propel South Carolina to the next level of training, education and workforce development in materials science, crossing the length scale from inorganic chemistry, to hybrid materials and biomaterials," said **Gelabert**, who will serve as Winthrop’s principal investigator and project director. “The future of new technological materials lies in these collaborative, cross-cutting efforts, and we are pleased to be a part of this development.”

Another important role for Winthrop in the S.C. initiative will be the **development and offering of materials science summer teacher workshops**, led by chemistry and physics faculty **Clifton Calloway** and **Ponn Maheswaranathan**. They will develop lessons for 50 public school teachers, as well as supporting outreach to K-12 education.

Pat Owens, chair of the Department of Chemistry, Physics & Geology, will handle budgeting and reporting responsibilities for Winthrop’s portion of the grant.

For more information, contact **Judy Longshaw**, news and media services manager, at 803/984-0586 or longshawj@winthrop.edu.

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