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ONU partners in $19 million national science program

ADA — Ohio Northern University has joined the newly-formed National Science Foundation Center for Layered Polymeric Systems (CLiPS) Affiliate Program that will give ONU students an unparalleled opportunity to study and research an emerging advanced polymer formulation process that will have dramatic impact on the global market.

The NSF funded this program because of its priority to target and engage high quality undergraduate students and to participate and compete in a highly competitive global market.

The CLiPs approach strategically integrates polymer science and engineering with research in nanotechnology, optics, laser physics, membranes, biomedical engineering and other scientific disciplines in the "polymers plus" concept, said Eric Baumgartner, dean of ONU's T.J. Smull College of Engineering. The partnership will provide incredible options for science and engineering undergraduates.

ONU's curriculum will be an internal partnership between its colleges of Engineering and Arts & Sciences. The academic collaboration will include introduction to polymer engineering and, within the chemistry major, will incorporate formulating and building polymers. Chemistry professor Dr. Jeff Gray and associate professor of chemistry, Hui Shinn will serve as facilitators of the CliPs program. Dr. Shinn will bring her expertise in materials science to chemistry students to offer them the additional dimension of learning ways to make the polymer layers hold up under adverse conditions; studying effects of aging polymers and also learning how to change layers to alter the end product.

The process involves the layering of polymers down to approximately 10 nanometers--nearly the molecular level, and producing new materials that can make products that are stronger, less porous and that function beyond materials that are simply layers of plastic.

This layering can create new packaging materials for food that will keep it air tight, thus naturally prolonging the shelf life of fruits and vegetables. The process can also allow insertion of electronic devices into clothing producing computer displays on wearable items.

CLiPS will receive approximately $19 million from NSF over the first five years. Case Western and its affiliate partners will have the opportunity to reapply after four years to renew funding for a second five-year period.

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