



Triton College

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3D Printing Brings Chemistry to Life at Triton College

RIVER GROVE, Ill. — From computer screen to the palm of your hand.

Triton College's Science Department has recently been awarded two 3D printers, which Chemistry Faculty Member Dr. Saadia Khan says will greatly enhance the learning experience for chemistry students by helping them visualize and better understand the molecular structures of atoms.

The printers were granted to Triton through the Illinois Support for the Creation of Open Educational Resources (IL-SCOERs) project and are housed in the Plus Lab in the D Building for student and faculty use. Illinois SCOERs is a statewide initiative that promotes student success by raising awareness of and encouraging the implementation and growth of Open Educational Resources (OER). The project relies on collaboration between educational systems in Illinois, the library community and workforce representatives to develop OER course materials that are freely available for use, modification and sharing.

Dr. Khan said the chemistry department plans to use the printers to develop and publish learning materials that contribute to the SCOERs project. By incorporating 3D printing into the classroom, students will be able to apply the concepts they're studying and deepen their understanding.

"I'm really excited," Khan said while pulling various 3D-printed objects from a Ziploc bag—including models of seashells, a bright orange human skull and of course handfuls of molecules—so many that the "atoms" can be heard clinking as the bag shifts in her hands.

Holding up a model of a tetrahedral molecule—a structure with a central atom surrounded by four others—Khan explained that many of chemistry's concepts are easier to grasp when physically manifested. Atoms, molecules and orbitals can all be difficult to visualize when confined to two-dimensional textbook drawings.

On paper, a tetrahedral molecule like methane (CH_4) might be shown as a centrally located carbon (C) atom connected by black lines to four hydrogen (H) atoms. But in Khan's hand, students can see how the atoms bond to create a three-dimensional structure—even if it's vastly larger than the real thing.

In organic chemistry, Khan said instructors often recommend students purchase molecular modeling kits. But with 3D printers, there's another option: make them yourself.

Using the new printers, students can design a molecule using computer software, send the file to the printer and watch the model materialize before their eyes.

“When you actually build it, you go more into detail about how the different parts come together to form the molecule,” Khan said. “Holding it in your hand allows you to explore the concept more deeply rather than just seeing it drawn on paper or a screen.”

Dr. Khan added that this initiative aligns with Triton College’s strategic goals by incorporating diverse learning methods into the curriculum and investing in technology that fosters innovation, strengthens learning and keeps pace with workforce trends.

“Technology is constantly evolving, and we’re at a point where the incoming crop of high schoolers we’ll be teaching at Triton will have already been introduced to 3D printing,” she said. “We want to make sure we stay current with these advancements so we can foster excellence in our students.”

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ABOUT TRITON COLLEGE

Triton College is an institution of higher education dedicated to student success. Triton offers more than 120 degree and certificate programs designed for students to realize their career aspirations and effectively compete in a global economy. The college campus spans 110 acres in River Grove, Illinois, holds classes at satellite locations and offers online learning opportunities. Triton’s exemplary faculty and staff work to provide high-quality, convenient and affordable educational opportunities to more than 10,000 students each year. Triton College is a member of The Community Colleges of Illinois and accredited by the Higher Learning Commission. Learn more at triton.edu.