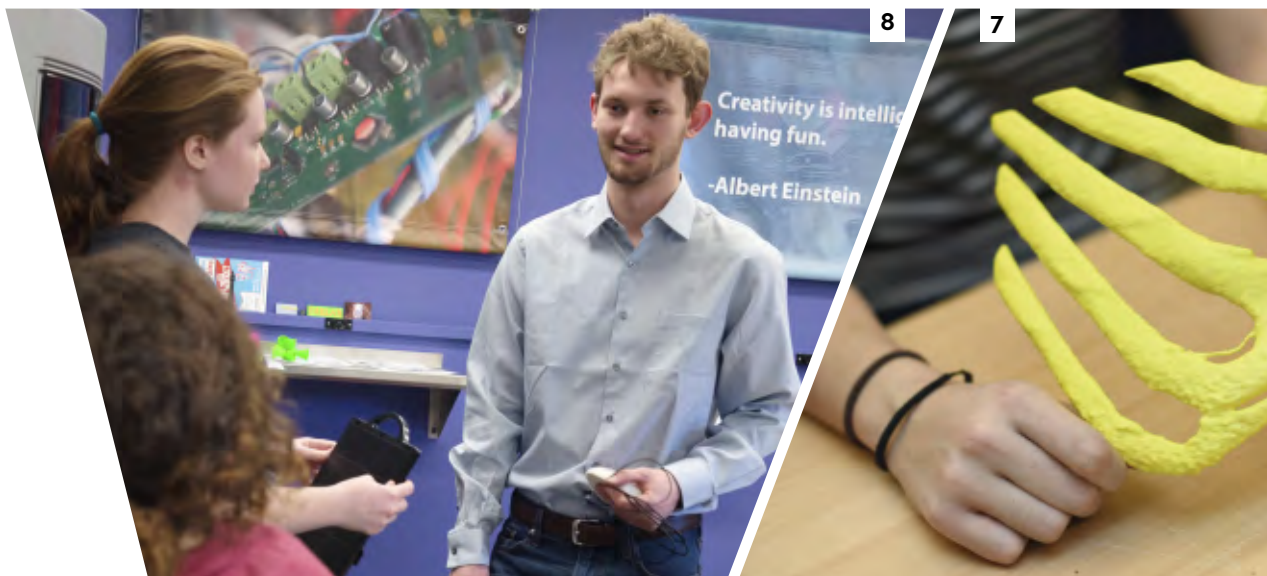


MAKING IT REAL

An incubator for ideas and a place to engage people's imaginations, the UVM FabLab makes rapid-prototyping tools available to College of Engineering and Mathematical Sciences (CEMS) students and faculty. The lab provides the opportunity for interaction in developing and testing innovative products and designs. The mantra of the space: "Innovate, Iterate, Make!"





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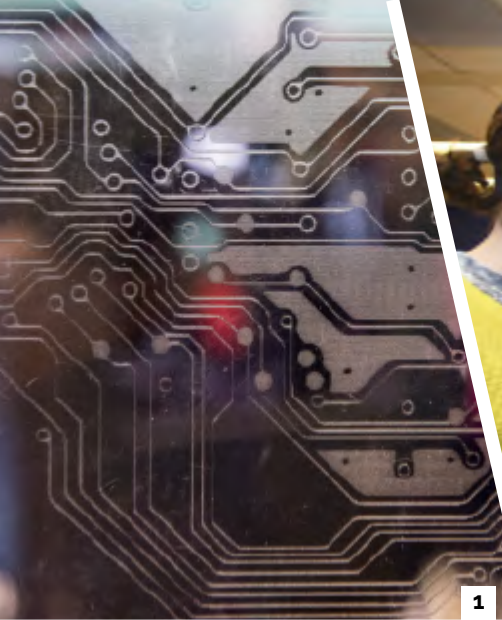
Photo (1) The undergraduate students who work in the FabLab are encouraged to push materials and the possibilities of the lab's rapid prototyping technologies. **(2)** The FabLab helped Mathematics Professor Greg Warrington make a 3D print of a four-dimensional hyperplane arrangement called the rank-3 Shi arrangement. **(3)** The FabLab has invested in a "farm" of MakerBot desktop 3D printers to make 3D printing affordable and accessible for students. **(4)** FabLab technicians work with students and faculty on a wide variety of projects and research. Pictured here are FabLab Special Projects Coordinator Claudio Benito and Professor Ryan McGinnis. **(5&6)** Students in Professor Patrick Lee's course Modern Manufacturing Processes (ME 161) design and print objects that account for the constraints and unique features of additive manufacturing. Pictured: Pawinn Songtachalert, Dakota Greenblatt. **(7)** Ryan Walsh, M.D., assistant professor of radiology at the UVM Larner College of Medicine, uses the FabLab to construct three-dimensional models of human organs and bones. Below is a ribcage model. **(8)** Student entrepreneurs like engineering student Cullen Jemison use the lab for prototyping product designs. Cullen won the LaunchVT Collegiate competition.



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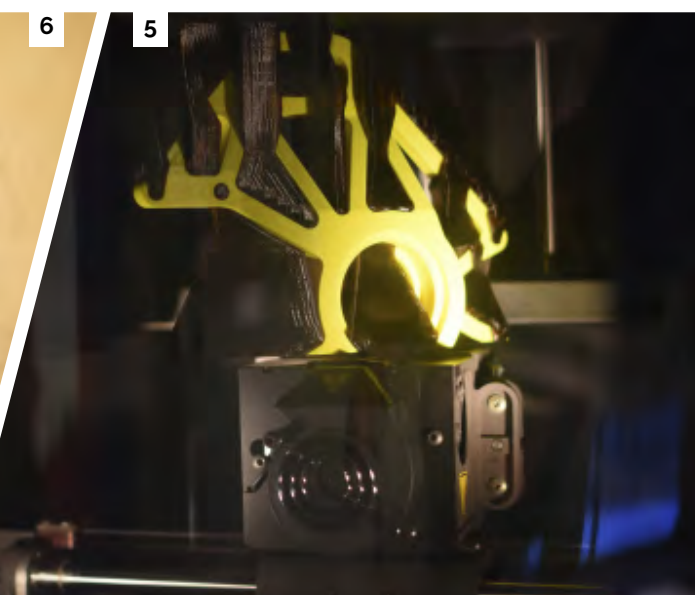
Photo (1) The Laser cutter/engraver is a popular tool in the FabLab across disciplines. Professor Mildred Beltre of the art department has assigned students to make wood cuts by hand and wood engravings with the FabLab's laser. **(2)** 3D hand models are part of Introduction to Biomedical Engineering (BME 001) class projects with Professor Ryan McGinnis. Students Rose Warren and Alicia Tannenberger watch their design iteration print. **(3)** Students in Professor Will Louisos' ME First Year Design Experience perform fundamental Fluid Dynamics experiments in order to gather and analyze data as part of the engineering design process. Teams of students then design and build jet-propelled vehicles using 3D printing and other modern fabrication technologies before competing in payload, acceleration, and power competitions. Pictured: Lara Weed. **(4)** The lab's more sophisticated prints require support structures. Below FabLab team leader and SEED student Carlo Giorelli removes a project from the bath that dissolves the support material. Giorelli's project is a design to improve lockdown window shades used in schools. **(5&6)** The CEMS AERO electric car team uses the FabLab to construct models of components that connect tires to the suspension system of the car. This allows them to gain greater efficiency in the final manufacturing process.



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