

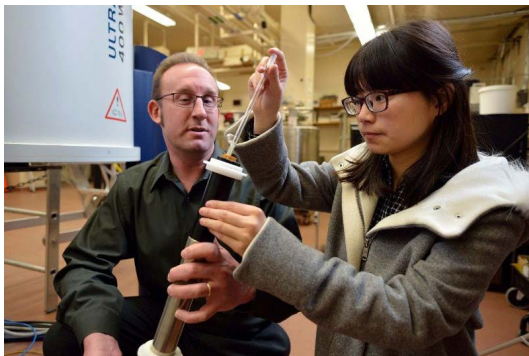
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ECONOMICAL AND SUSTAINABLE MATERIALS STRATEGIC GROWTH AREA VIRGINIA TECH™

Greetings from the ESM SGA at Virginia Tech!

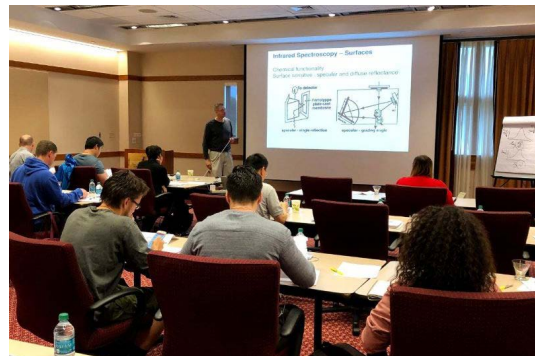
This month, we're highlighting the three research teams we funded this fiscal year, as well as the Macromolecules Innovation Institute's Adhesion Science short course. Our Pathways Minor also has an exciting development! To stay up-to-date on daily news, please follow our Twitter feed (@MaterialsSGA_VT) for daily news!"



Interdisciplinary Team Discovers Double Helix Structure in Synthetic Macromolecule

One of the SGA funded teams, led by Professor Lou Masden, has discovered that a high-strength polymer called "PBDT" has a rare double helix structure.

[Learn More](#)



Adhesion Science Short Course

Registration is now open for the Macromolecules Innovation Institute's annual lecture-laboratory short course for those who produce or utilize adhesives and sealants.

[Learn More](#)



ESM SGA Supporting Physics Team in Tungsten Sputtering Source

The Materials SGA has selected to support a team of scientists from Physics in their quest in quantum computing. The funding is for the acquisition and commissioning of two sputter guns and ancillary systems added to existing materials systems of Professor Satoru Emori for the growth of Nb (niobium) and Ta (tantalum).

[Learn More](#)



Seed Grants Helping to Grow Virginia Tech's Transdisciplinary Capacities

Professor Abby Whittington and her research on the "Development of Acoustically Active Biomaterials for the Detection, Prevention, and Treatment of Biomaterial-Associated Infections" was chosen to receive funding from the ESM SGA.

[Learn More](#)



What is it?

The Materials and Society Pathways minor begins with an introductory two-course series focused on material choice, creation, and disposal. This is followed by a series of elective courses that connect these choices and processes to the areas of social equity, policy, and scientific advances. The minor culminates in a capstone course that integrates the concepts gained in the introductory material through the creation of a proposal to address current topics in materials and society. The minor is a collaboration between the Economical and Sustainable Materials Strategic Growth Area, the Department of Chemistry, and the Department of Materials Science and Engineering.



Why do it?

From alternative energy to quantum computers, the future of technology requires materials innovation and use. The next generation of engaged citizens, businesspeople, innovators, and policy makers will have to consider the impact of technology on communities and cultures. This minor provides the interdisciplinary knowledge required for students to enter the workforce and guide the future of technological advances from a global and wholistic perspective – considering the environment, social equity, and the limitations of material properties. A great way for students to fulfill their Natural Sciences and Quantitative and Computational Thinking requirements.

Who is it for?

The primary audience for this minor is non-STEM disciplines such as those within the College of Architecture and Urban Studies, the Pamplin College of Business, and the College of Liberal Arts and Human Sciences. Majors from within traditional STEM fields may also benefit from the interdisciplinary and broad view of materials presented in the minor.

Pathways Core Concepts

- 2 – Critical Thinking in the Humanities
- 3 – Reasoning in the Social Sciences
- 4 – Reasoning in the Natural Sciences
- 5a – Advanced/Applied Quantitative and Computational Thinking
- 7 – Critical Analysis of Equity and Identity in the United States

Pathways Integrative Concepts

Ethical Reasoning
Intercultural and Global Awareness

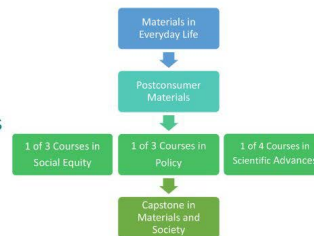


Requirements

The 18-credit hour minor in Materials and Society includes 9 hours of required courses and 9 hours of elective Pathways courses selected from a list.

Required courses

MSE 1014: The Science of Materials in Everyday Life
CHEM 3054: Postconsumer Materials
CHEM 4054: Capstone in Materials and Society*
Prerequisite MSE 1014 & CHEM 3054



Elective courses

Students select 9 credit hours of elective Pathways courses in 3 categories (social equity, policy, and scientific advances). For a complete list of elective courses, consult the checksheet available online at the registrar starting August 2019.



Learning Objective - Synthesizes students' studies in social equity, policy, and fundamental materials science to critically analyze concepts in the modern scientific materials landscape, including the evaluation of scientific information, the reciprocal impact of science and society, and the ethics of materials mining, manufacturing/use, and disposal. Cultivates skills in teamwork, written and oral presentations, and proposal development.

www.pathways.prov.vt.edu/minors
Contact: Amy Kokkinakos (amyk@vt.edu)



Pathways Minor Approved by College of Science

The Economical and Sustainable MATERIALS SGA Pathways Minor - "Materials and Society" - has been approved by the College of Science, bringing it one step closer to becoming an official Minor for Virginia Tech Students.

[Learn More](#)

Save the Date:

Materials Innovations and Instrumentation Expo

May 7th, 1pm-5pm, Moss Arts Center

Admission is free



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