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*Fluorescent probes* of *disease-linked biomarkers* **Impact Areas:** Chemical Biology, Drug Discovery, Nanoscience

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Leveraging underexplored environmental niches for drug discovery

**Impact Areas:** Chemical Biology, Drug Discovery, Energy

# ROBERT MOORE

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Polymer morphology and characterization

**Impact Areas:** Polymers, Energy, Materials, Sustainability

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Photo- and electro-catalysis in metal-organic frameworks

**Impact Areas:** Energy, Materials, Methodology & Mechanisms, Nanoscience

# JOHN MORRIS

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Gas surface reaction dynamics

**Impact Areas:** Energy, Materials, Methodology & Mechanisms

# LINA QUAN

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Hybrid electronic materials for energy and sustainability

**Impact Areas:** Energy, Materials

# WEBSTER SANTOS

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Drug discovery for obesity, fatty liver disease, multiple sclerosis

**Impact Areas:** Drug Discovery, Chemical Biology, Methodology & Mechanisms

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*Inorganic catalysis for energy applications* **Impact Areas:** Methodology & Mechanisms, Energy, Materials, Sustainability

# MICHAEE SCHULZ

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Polymer synthesis and structure-property relationships

**Impact Areas:** Polymers, Energy, Materials, Methodology & Mechanisms

# DIEGOTROVA

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Forefront problems in quantum chemistry and molecular dynamics

**Impact Areas:** Theory & Computation, Energy

# EDWARD VALEEV

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High-performance implementations of electronic structure methods

**Impact Areas:** Theory & Computation, Energy

# VALERIE WELBORN

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Atomistic simulations of condensed-phase systems

Impact **Areas:** Theory & Computation, Chemical

Biology, Energy, Materials

# JOSH WORCH

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Intrinsically recyclable polymers from renewable sources

Impact **Areas:** Polymers, Methodology & Mechanisms, Materials, Sustainability

***APPLICATION DEADLINES***

**Dec. 1** - Priority deadline for consideration for fellowships

**Jan. 5** - Final deadline for full consideration

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nationally and internationally recognized faculty, strong academic programs, and state-of-the-art facilities.

Research in the Department is innovative, collaborative,

and interdisciplinary. From creating advanced materials from sustainable sources to treatment of chronic and infectious diseases, all of our research activities extend beyond conventional boundaries, embracing engineering, biology, medicine and agriculture.

# MING CHEN

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Asymmetric catalysis and total synthesis of natural products

**Impact Areas:** Methodology & Mechanisms, Chemical Biology

# DANIEL CRAWFORD

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Quantum chemistry for understanding the universe

**Impact Areas:** Theory & Computation, Drug Discovery, Energy

# PAUL DECK

**Email:** pdeck@vt.edu

Fluoroorganic and fluoropolymer chemistry

**Impact Areas:** Methodology & Mechanisms, Polymers

# ALAN ESKER

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Polymer physical and surface chemistry

Impact **Areas:** Polymers, Materials, Nanoscience, Sustainability

# ADRIAN FIGG

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*Polymer synthesis directed by and for biology* **Impact Areas:** Polymers, Chemical Biology, Materials, Methodology & Mechanisms

# EMILY GENTRY

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Mapping the human metabolome using synthesis and mass spectrometry

**Impact Areas:** Chemical Biology, Drug Discovery, Methodology & Mechanisms

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# FENG IN

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Discovery of materials electrochemistry for energy and sustainability

**Impact Areas:** Energy, Materials, Nanoscience

# GUOLIANG (GREG) LIU

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Polymers and composites for energy, water, and catalysis

**Impact Areas:** Materials, Nanoscience, Polymers, Sustainability

# ANDREW LOWELL

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*Synthesis and biosynthesis of antibiotics and*

other natural products

**Impact Areas:** Drug Discovery, Chemical Biology, Methodology & Mechanisms

# LOUIS MADSEN

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Materials for sustainable energy and mechanisms of molecular motion

**Impact Areas:** Energy, Materials, Polymers, Sustainability

# JOHN MATSON

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Organic, macromolecular, and supramolecular synthesis

**Impact Areas:** Polymers, Chemical Biology, Materials, Methodology & Mechanisms

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Quantum chemistry methods for renewable energy

Impact **Areas:** Theory & Computation, Energy