

## SIX PILLARS OF DECARBONIZATION



### PILLAR THESIS

Developing new materials capable of efficient light absorption and charge transport will enable bandgap optimization, increased thermal stability, and enhance mechanical properties, leading to longer-lasting, more efficient solar energy technologies. The Generate Decarbonization Working Group will convene stakeholders quarterly to address critical questions in research and commercial scalability, producing insight to guide the future direction of the pillar.

### PILLAR CO-LEADS



Professor Mercuri Kanatzidis  
*Expertise: Solar energy conversion; heat-to-electrical conversion*

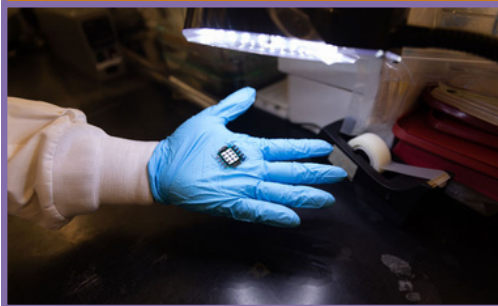


Professor Dayne Swearer  
*Expertise: Nanoscale light-matter interactions; Solar-to-fuel conversion*



### GENERATE

a vast supply of low-carbon intensity electricity



### AREA OF FOCUS

Northwestern will build a new class of solar energy production by focusing on high-efficiency multi-junction solar cells and next-generation solar cell materials.

## INTERDISCIPLINARY EXPERTISE

Interdisciplinary faculty areas of expertise include:

Device physics | Durability science | Grid integration | Materials characterization | Materials processing | Public policy and markets | Synthesis science

Faculty collaborators have been recognized for their academic excellence through awards and affiliations:

- National Academy of Engineering
- National Academy of Sciences
- National Academy of Inventors
- American Academy of Arts & Sciences
- Clarivate Highly Cited Researchers
- 2023 Packard Fellow
- U.S. Department of Energy Electricity Advisory Committee

## NORTHWESTERN'S WORLD-CLASS EXCELLENCE

- Northwestern holds the world record for perovskite single junction solar cell efficiency
- Northwestern is ranked #4 for most highly cited research on organic solar cells
- Trienens Institute housed a \$13M DOE Energy Frontier Research Center (EFRC) focused light-driven redox processes (2018-20)
- Trienens Institute housed a \$34.2M DOE Energy Frontier Research Center (EFRC) focused on solar energy with Argonne National Lab (2009-18)