

SIX PILLARS OF DECARBONIZATION



PILLAR THESIS

State-of-the-art battery materials (e.g., lithium- and sodium-ion) are not sufficient to achieve the cost reductions needed to enable long duration energy storage at the scale required for decarbonization. The Store 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 Mark Hersam
Expertise: Nano-electric materials for energy storage and conversion devices



Professor Jeffrey Lopez
Expertise: Charge transport and materials discovery for energy storage applications



STORE

low-carbon intensity electricity for long-term utilization



AREA OF FOCUS

Pioneer new materials with high performance and low cost to unlock a new generation of scalable grid storage.

INTERDISCIPLINARY EXPERTISE

Interdisciplinary faculty areas of expertise include:

Critical mineral supply chain life cycle assessment | Experimental/computational tools to inform discovery, mechanistic understanding | Materials characterization and synthesis | Second life/end of life battery recycling

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
- Clarivate Highly Cited Researchers
- National Bureau of Economic Research
- Northwestern Center Director

NORTHWESTERN'S WORLD-CLASS EXCELLENCE

- ✓ \$120M collaborative R&D relationship with Argonne National Lab focused on batteries (JCESR)
- ✓ Legacy of battery tech development, commercialization | Corporate (Exelon) & startup (Volexion \$4M, NanoGraf \$100M)
- ✓ Longest continually funded Materials Research Center in the U.S., with focus on solid-state ionics
- ✓ Home to Sustainable, Resilient, Responsible Global Minerals Supply Chain (SuReMin) collaborative NSF initiative