CLEAN ENERGY INSTITUTE
UNIVERSITY of WASHINGTON

Annual Report

July 1, 2024 – June 30, 2025

Letter from the Director

Dear Clean Energy Institute friends:

Thanks to our talented and supportive community on campus and in the Pacific Northwest, we've accomplished much over the past year and have exciting new projects underway. Highlights include:

- advancing more efficient solar cells and longer-lasting lithium-ion batteries;
- training students in climate tech investing due diligence and science policy analysis;
- launching a new lab for pouch cell battery prototyping;
- and co-designing four clean energy microgrids in partnership with the Tulalip Tribes, Snohomish PUD, Beacon United Methodist Church, the Eritrean Association in Greater Seattle, and the Okanogan County Community Action Council.

The Washington Clean Energy Testbeds booked over 108,000 hours of use last year — equivalent to 12 people working 24/7, or 52 people working 40-hour weeks. And I'm proud that Testbeds-affiliated startups have secured over $1 billion in follow-on capital and contracts since the Testbeds were founded, underscoring the facility's role as a powerful engine for commercialization and economic development.

In this report, you'll see data and anecdotes from July 1, 2024 to June 30, 2025 about our impact on clean energy research, education, climate technology innovation, and local communities. ***But since that time frame, we have entered a new reality.***

Due to Washington State budget challenges and federal research funding cuts, CEI has had to make significant reductions and reprioritizations in our 2025–2026 budget. So, while this report includes a list of 42 CEI Graduate Fellows, next year's report will show 10. We are pulling back on Collaborative Seed Grants used to launch new high-risk/high-reward research projects and we've stopped recruiting more Distinguished Postdoctoral Fellows. Unfortunately, that's only a partial list of what is being lost.

So, my request to you is to read about what we've been able to accomplish, and to reach out to me and my colleagues with ideas to help us maintain momentum against these powerful headwinds. I'm hopeful that our incredible clean energy students, faculty, and partners will band together as we forge ahead towards a scalable and equitable clean energy future for everyone.

Thank you for your continued support,

Daniel T. Schwartz
Director, UW Clean Energy Institute
Boeing-Sutter Professor of Chemical Engineering

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REPORT HIGHLIGHTS

RESEARCH

- Welcomed **7** new faculty from **5** departments and **2** Distinguished Postdoctoral Fellows in perovskite solar and 2D materials
- Seeded new research collaborations for AI data center energy efficiency and tribally-planned electric vehicle charging infrastructure
- Advanced more stable perovskite solar cells and longer-lasting lithium-ion batteries
- Partnered with a Nobel Prize winner to develop strategies to accelerate battery manufacturing and secure supply chains
- Published an open-source toolbox for monitoring battery health

FACILITIES

- Launched **$7.5 million lab** for pouch cell battery prototyping alongside supporters and statewide partners
- Booked over **108,000 hours** of work at the Testbeds
- Welcomed **98 new users** including **16 new companies**
- Provided **4 Undergraduate Research Awards** enabling UW students to innovate at the Testbeds

EDUCATION

- Funded **42** Graduate Fellows in **11** departments
- Facilitated training experiences in climate tech investing due diligence and science policy analysis for **20** graduate students
- Trained a record **51** UW students across clean energy disciplines via Energy Materials, Devices, & Systems lab course
- Awarded first **8** Graduate Certificates in Clean Energy Science, Engineering, and Society

COMMUNITY ENGAGEMENT

- **Co-designed 3 clean energy microgrids** in partnership with Tulalip Tribes, Snohomish PUD, and two Beacon Hill communities via UW Engineering Capstone program
- Co-designed a microgrid resilience hub in Okanogan County that received a **$20 million U.S. EPA grant**
- Hosted **6 students from Big Bend Community College** (Moses Lake, WA) for a battery workforce development workshop at the Testbeds
- CEI staff and **55** volunteer Clean Energy Ambassadors **engaged over 3,200 students and teachers**
- **Piloted longer-term K-12 engagement at Nelsen Middle School** (Renton, WA)
- Supported sustainable energy event for **Science Olympiad held at 80 WA middle schools and 75 WA high schools**

ABOUT CEI

MISSION

The University of Washington (UW) Clean Energy Institute (CEI) was founded in 2013 with funds from the state of Washington. Its mission is to accelerate the adoption of a scalable and equitable clean energy future that will improve the health and economy of our state, nation, and world. To accomplish this, CEI supports the advancement of next-generation solar energy and battery materials and devices, as well as their integration with power systems and the grid. CEI creates the ideas and educates the people needed to generate these innovations, while facilitating the pathways to bring them to market.

CEI supports students, faculty, and partners through education and workforce engagement programs, basic and translational research support, and access to world-class facilities.

CEI is advised by a UW Trainee and Faculty Advisory Board (TFAB) and an external Technical Advisory Council (TAC) of prominent members of the Pacific Northwest clean energy community.

> We believe deeply in empowering the next generation of scientists and engineers to confront the climate crisis head-on. By supporting the Clean Energy Institute's work, especially its efforts to expand access to STEM education, we're not just imagining a better future, we're helping to build it.
>
> — Malcolm (Max) Witter & Marcia Johnson Witter, The Dean Witter Foundation

Learn more about supporting CEI's Innovation Fund >>

FACULTY & TRAINEES

CEI's 46 Member Faculty are the core scholars who help define and implement the Institute's energy science and engineering research and educational programs. CEI also has 38 Affiliate Faculty who broaden and enrich the institute's programs.

In 2024–25, CEI programs supported approximately 120 UW graduate and undergraduate students. CEI programs are open to all UW students that meet the requirements specified in each program.

FACULTY RECOGNITION

David Bergsman (ChemE): AVS Thin Film Division Paul H. Holloway Young Investigator Award

Corie Cobb (ME): National Academy of Inventors Fellow

Kai-Mei Fu (Physics/ECE): American Physical Society Fellow

Samson Jenekhe (ChemE/Chemistry): Royal Society of Chemistry de Gennes Prize

Daniel Kirschen (ECE): Washington State Academy of Sciences

Xiaosong Li (Chemistry): AAAS Fellow

Aniruddh Vashisth (ME): American Society for Composites Young Composites Researcher Award

Dianne Xiao (Chemistry): Sloan Fellow

Xiaodong Xu (Physics/MSE): National Academy of Sciences Award for Scientific Discovery

NEW AFFILIATE FACULTY

Branden Born
Associate Professor and Chair, Urban Design & Planning

Morteza Derakhti
Assistant Professor, Civil & Environmental Engineering

Patrick Greiner
Assistant Professor, Sociology

Shana Hirsch
Assistant Research Professor, Human Centered Design & Engineering

Ang Li
Assistant Professor, Electrical & Computer Engineering

Maxwell Parsons
Assistant Professor, Electrical & Computer Engineering

CLEAN ENERGY STUDENT AWARDS

Each year, CEI recognizes a graduate student who has demonstrated extraordinary productivity in clean energy research and scholarship, as well as a graduate student who has demonstrated dedication and creativity when communicating STEM to a variety of audiences.

2025 Scientific Achievement Award

Doris Hung

Mechanical Engineering
Advisor: Corie Cobb

2020–21 CEI Graduate Fellow

2021–22 CEI Education & Training Fellow

> The resources provided by CEI, including the CEI Graduate Fellowship, [data science] training, and Education & Training Fellowship, really helped me grow as a researcher. I am very grateful to be part of this community.
>
> — Dr. Doris Hung, now a postdoctoral researcher at Oak Ridge National Laboratory

2025 Community Engagement & Service Award

Hareesh Iyer

Materials Science & Engineering
Advisor: Eleftheria Roumeli

2024–25 CEI Graduate Fellow

2023–24 CEI Education & Training Fellow

2024–25 Torrance Tech Due Diligence Analyst

> I'm grateful to CEI for providing so many opportunities for me to connect with various communities around the Puget Sound. It meant a lot to me to be able to engage with students, teachers, and community leaders and learn about the different ways people are thinking about sustainability!
>
> — Hareesh Iyer

TRAINEE RECOGNITION

College of Arts & Sciences

Graduate Medalist in the Natural Sciences:

Jiaqi Cai (Physics), CEI Graduate Fellow (Advisor: Xiaodong Xu)

Husky 100

Hao Nguyen (Chemistry), CEI Graduate Fellow (Advisor: Brandi Cossairt)

Deseree Lai (Oceanography), CEI Outstanding Undergraduate Researcher with Cody Schlenker and Dianne Xiao

Naomi Kern (ChemE), undergraduate researcher with Lilo Pozzo

Department of Chemistry

George H. Cady Prize for Best Thesis in Inorganic Chemistry
Diversity, Equity, and Inclusion Leadership Award:

Ashlyn Kamin, CEI Graduate Fellow (Advisor: Dianne Xiao)

Larry R. Dalton Prize for Best Dissertation in Materials Chemistry:

Hao Nguyen, CEI Graduate Fellow (Advisor: Brandi Cossairt)

Excellence in Graduate Leadership and Service Award:

Eden Tzanetopoulos, CEI Graduate Fellow (Advisor: Daniel Gamelin)

Excellence in Graduate Research Award in Inorganic Chemistry:

Phuong Le, CEI Graduate Fellow (Advisor: Dianne Xiao)

Devin Rollins, CEI Graduate Fellow (Advisor: Dianne Xiao)

Department of Mechanical Engineering

Distinguished Dissertation Award

Doris Hung, CEI Graduate Fellow (Advisor: Corie Cobb)

Department of Physics

Dehmelt Prize:

Mai Nguyen, CEI Graduate Fellow (Advisor: Xiaodong Xu)

Henderson Prize:

Jiaqi Cai, CEI Graduate Fellow (Advisor: Xiaodong Xu)

Karrer Prize:

Jonathan DeStefano, CEI Graduate Fellow (Advisor: Jiun-Haw Chu)

Renewable Energy Scholarship Foundation

Phoebe Chu (Chemistry), undergraduate researcher with Dianne Xiao

Helen Chen (Physics), CEI Graduate Fellow (Advisor: Jerry Seidler)

Kwame Donkor (ECE), Ph.D. with June Lukuyu

Michelle Katz (ME), Torrance Tech Due Diligence Analyst (Advisor: Corie Cobb)

Devin Rollins (Chemistry), CEI Graduate Fellow (Advisor: Dianne Xiao)

Kamaya Ronning (Chemistry), undergraduate researcher with Dianne Xiao

Tata Serebryany (ChemE), Ph.D. with Julie Rorrer

Mathangi Venkatesh (ChemE), undergraduate researcher with David Bergsman

From left: UW students Devin Rollins, Phoebe Chu, Kamaya Ronning, Michelle Katz, Mathangi Venkatesh, Brigitte Worstell (Program on the Environment), and Kwame Donkor receiving their Renewable Energy Scholarship Foundation awards.

RESEARCH

CEI scientists and engineers are discovering new materials for more efficient, more easily-manufactured solar cells; designing new batteries that can safely power all forms of transportation or back up the electrical grid; and modernizing electrical grids with sophisticated information technology to accommodate new sources of power. Broadly, CEI research can be categorized within **solar energy, energy storage, systems integration,** and **advanced materials & measurements.**

As an interdisciplinary institute, CEI enables UW faculty in several departments to leverage a range of research expertise, educational programs, and open-access, low-cost user facilities to attract federal grant support. CEI also serves as an experimental platform for UW faculty to develop new educational methods and facilities that support CEI's goals in education and training. And through the Distinguished Postdoctoral Fellowship, CEI recruits recent Ph.D. graduates from leading U.S. research universities and national labs to advance CEI's mission in clean energy and community engagement.

> ***CEI is as close to economic development as research gets.***
>
> — Vin Valentino, Green Economy Strategic Advisor and Key Industries & Workforce Development Manager, City of Seattle Office of Economic Development

RESEARCH CENTERS

In 2024–25, CEI faculty led research centers with a total of $138.1 million in federal funding. These federally-funded research centers support a range of interdisciplinary activities under a major, cross-cutting research goal. These multi-institutional collaboratives typically include multiple universities, startups and major corporations, and national laboratories.

Innovation Center for Battery500 Consortium

Battery500 is an initiative of the U.S. Department of Energy (DOE) Vehicle Technologies Office (VTO) led by the Pacific Northwest National Laboratory (PNNL) to develop next-generation electric vehicle batteries. Battery500 director Jun Liu is CEI Member Faculty, as is deputy director Jie Xiao, who joined UW ME in 2024.

Center for Integration of Modern Optoelectronic Materials on Demand

IMOD is a National Science Foundation (NSF) Science and Technology Center (STC) led by the UW that focuses on new semiconductor materials and scalable manufacturing processes for new optoelectronic devices. CEI Chief Scientist David Ginger is IMOD's director, and its membership also includes several CEI Member Faculty.

Molecular Engineering Materials Center

UW MEM-C

UW MEM-C is an NSF Materials Research Science and Engineering Center (MRSEC) that coordinates UW and PNNL materials research to address trans-disciplinary challenges. MEM-C is led by CEI Member Faculty Daniel Gamelin, and includes several CEI researchers.

Renewed by NSF in 2023 with $18M over another six years.

Center for Programmable Quantum Materials

Pro-QM
Programmable Quantum Materials
DOE Energy Frontiers Research Center

Pro-QM is a U.S. DOE Energy Frontiers Research Center (EFRC) with the mission of advancing quantum technologies. CEI Member Faculty Xiaodong Xu and Alexandra Velian lead a Pro-QM Thrust and Theme, respectively, and the center includes additional CEI researchers.

Brookhaven National Laboratory

Columbia University

U.S. Manufacturing of Advanced Perovskites Consortium

U.S. MAP
Manufacturing of Advanced Perovskites

The US-MAP Consortium aims to accelerate the domestic commercialization of perovskite technologies. As a founding organizer, the UW and the Testbeds serve on the US-MAP executive board and oversee delivery of projects.

WASHINGTON Clean Energy Testbeds
University of Washington Clean Energy Institute

The University of North Carolina at Chapel Hill

The University of Toledo 1872

NREL
National Renewable Energy Laboratory

COLLABORATIVE SEED GRANTS

CEI Collaborative Seed Grants have provided UW scholars with up to $100,000 over one year to enable new teams to pursue center-scale funding, especially in high-risk/high-reward research topics. **Due to cuts in state and federal funding, CEI has had to halt this program for 2025–26.*

Enhancing Sustainability and Performance of AI Data Centers by Using Accelerated Optical Switching Networks

Sajjad Moazeni
Assistant Professor, Electrical & Computer Engineering

Ang Li
Assistant Professor, Electrical & Computer Engineering

This project aims to develop photonics for fully optical networking in data centers. While Google has demonstrated 40% power savings in their AI clusters using optical switches based on micro-electro-mechanical systems (MEMS), the proposed "monolithic" silicon chip offers a versatile, scalable solution for enhancing AI data center sustainability and performance.

Equitable Public Electric Vehicle Charging Infrastructure Expansion — From the Tribal Community Perspective

Lingzi Wu
Assistant Professor, Construction Management

Hyun Woo (Chris) Lee
Assistant Professor, Construction Management

Dylan Stevenson
Assistant Professor, Urban Design and Planning

UW Built Environments faculty are fostering partnerships with the Northwest Tribal Technical Assistance Program Center (NW TTAP) and other interested tribes in Washington state to evaluate electric vehicle charging infrastructure (EVCI) needs and challenges, emphasizing environmental justice, transportation justice, and energy justice. The ultimate goal is to co-create a scalable, data-driven mapping tool for EVCI expansion in tribal areas.

DISTINGUISHED POSTDOCTORAL FELLOWSHIP

CEI recruits recent Ph.D. graduates from leading U.S. research universities and national labs to advance CEI's mission in clean energy and community engagement. **Due to cuts in state and federal funding, CEI stopped accepting applications in summer 2025.*

Akash Dasgupta
Chemistry
PI: David Ginger
Joined UW winter 2025

Yi-Fan Zhao
Physics
PI: Xiaodong Xu
Joined UW fall 2025

RESEARCH HIGHLIGHTS

Accelerating U.S. battery manufacturing

Jie Xiao led two high-impact reviews in alignment with Battery500's mission to accelerate next-generation batteries. A team including UW researchers Jun Liu, Jihui Yang, Shijing Sun, Yuchen Ji, and Hemanth Neelgund Ramesh as well as Nobel Laureate Stan Whittingham highlighted scientific challenges and opportunities in U.S. battery production. And alongside Liu and Corie Cobb, Xiao conducted a comprehensive study of the cathode-electrolyte interphase inside cutting-edge batteries, which is key to how much of a battery's theoretical capacity is usable in reality, as well as stable performance over time.

Open-source tools for monitoring battery health

CEI Graduate Fellow Yuefan Ji developed an open-source software toolbox for a non-destructive method of analyzing the health of a battery. Techniques like electrochemical impedance spectroscopy (EIS) can be used to monitor performance in real time, and are critical to repurposing batteries that are no longer usable for their primary application. Dan Schwartz's research group has partnered with King County Metro to explore "second-life" uses for decommissioned bus batteries, such as providing off-grid power to remote communities — an effort led by coauthor Matt Murbach (now a senior cell data engineer at Tesla) during his UW ChemE Ph.D.

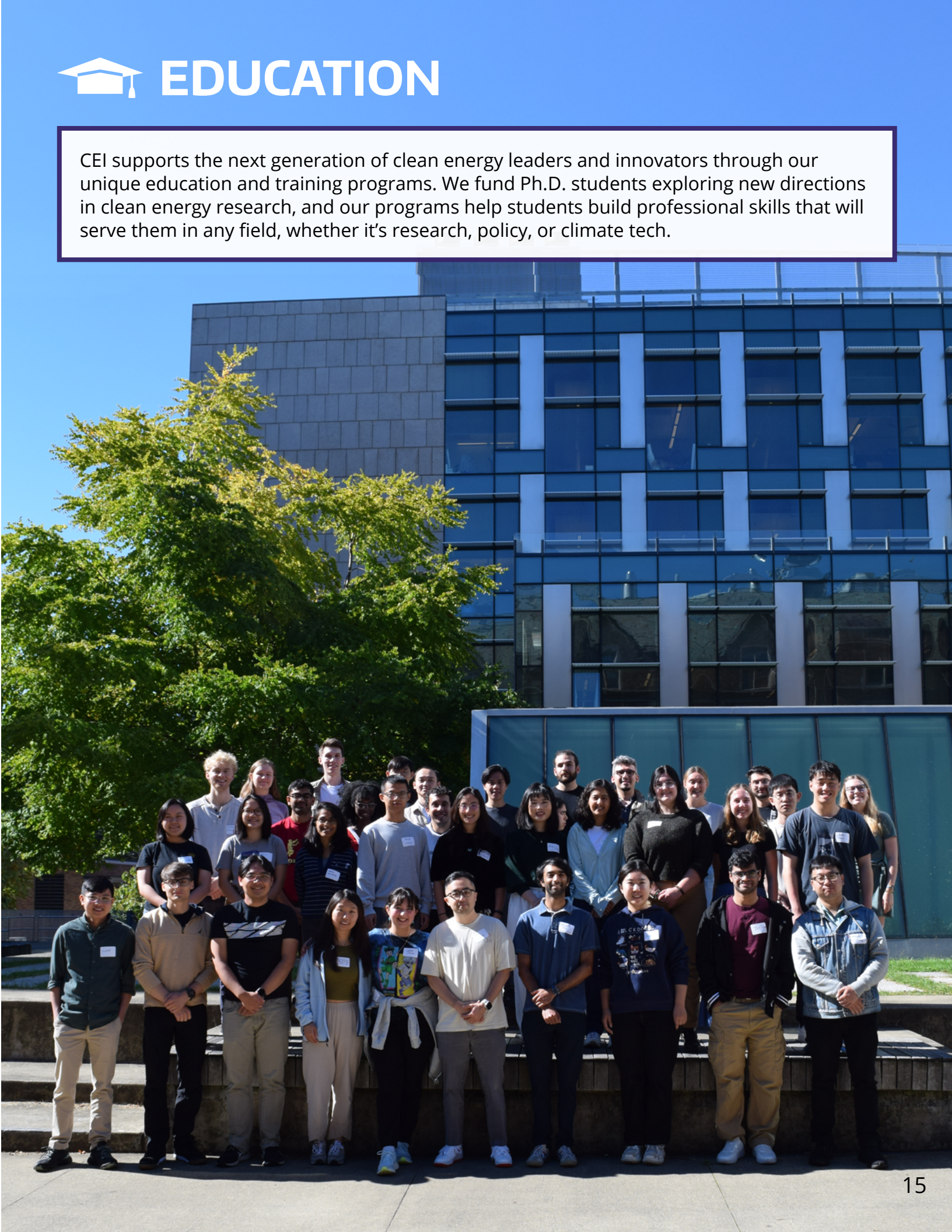
Preventing perovskite solar breakdown

When shaded solar cells are connected to illuminated solar cells, the module forces their currents to match. This "reverse bias" can degrade the low-output cells, presenting a significant challenge for next-generation perovskite solar, as even commercial silicon panels face this issue. Led by Dr. Fangyuan Jiang, the David Ginger group (UW Chemistry) partnered with Devin MacKenzie's group (UW MSE/ME) and researchers at the University of Colorado Boulder, Oxford University, and Rice University to develop a solution. With a thicker polymer layer for conducting the positively-charged "holes" that excited electrons produce, and a back electrode made of gold instead of silver, the team improved the breakdown voltage of perovskite solar cells from -1 V to -15 V.

A perovskite solar cell with darkened areas (circled) used to test current against voltage.

EDUCATION

CEI supports the next generation of clean energy leaders and innovators through our unique education and training programs. We fund Ph.D. students exploring new directions in clean energy research, and our programs help students build professional skills that will serve them in any field, whether it's research, policy, or climate tech.



CEI GRADUATE FELLOWSHIP

The CEI Graduate Fellowship funds two quarters of clean energy research for UW doctoral students each academic year, while providing interdisciplinary training via research seminars, science communication projects, K-12 engagement activities, climate tech networking events, industry field trips, and lab tours. After earning Ph.D.s at the UW, CEI Graduate Fellows have pursued careers in the climate tech industry, academia, think tanks and other nonprofits, and federally-funded research labs. CEI has awarded 317 Graduate Fellowships since 2013. **Due to cuts in state and federal funding, CEI has had to significantly reduce the number of fellowships for 2025–26.*

2024–25 CEI Graduate Fellows

CHEMICAL ENGINEERING

Jane Keth
Rishabh Sanghavi
Renyu Zheng

CHEMISTRY

Nick Adams
Hailey Akins
Julisa Juarez
Jay Lee
Celine Liew
Lucy Miller
Emily Miura-Stempel
Khoa Ngo
Soren Sandeno
Fubin (Sophie) Song
Maxwell Taub
Austin Wang

CIVIL & ENVIRONMENTAL ENGINEERING

Amanda Worthy

ELECTRICAL & COMPUTER ENGINEERING

Alana Dee
Sanskriti Joshi
Trager Joswig-Jones
Ahana Mukherjee
Andrew Tang

INDUSTRIAL & SYSTEMS ENGINEERING

Prasanna Raut

MATERIALS SCIENCE & ENGINEERING

Jay Dua
Minh Duong
Sankhya Hirani
Hareesh Iyer
Xinqi Li
Ren Pumulo

MECHANICAL ENGINEERING

Ahmet Mesut Alpkılıç
Greg Guymon
Youngshang Han
Yiwen Zheng

MOLECULAR ENGINEERING

Reagan Beers

PHYSICS

Aurelia Brook
Wenqin Chen
Toby Chu
Gianluca Delgado
Mai Nguyen
Anna Okounkova
Ruoyu Zhang

POLITICAL SCIENCE

Kayla Morton

URBAN DESIGN & PLANNING

Shiqi Ding

EDUCATION & TRAINING FELLOWSHIP

CEI Education & Training Fellows (ETFs) are clean energy doctoral students who work closely with CEI's education staff for two to four academic quarters to develop outreach activities, displays, and curricula for K-12 classrooms. ETFs also arrange logistics and recruit CEI student volunteers for classroom visits and other educational events.

2024–25 CEI Education & Training Fellows

Rose Lee
Chemical Engineering
2022–23 CEI Graduate Fellow

Anqi Zu
Education

GRADUATE CERTIFICATE IN CLEAN ENERGY SCIENCE, ENGINEERING, & SOCIETY

This 15-credit certificate, launched in fall 2023 and open to all UW graduate students, provides an interdisciplinary curriculum on the challenges and opportunities in clean energy and its adoption in society. Through hands-on training and interactions with world-renowned energy leaders, UW students:

- Increase and broaden their understanding of clean energy solutions
- Develop skills to work across disciplinary boundaries
- Communicate the applications of their research
- Understand the social and economic issues related to a clean energy transformation

CEI awarded its first eight Graduate Certificates in 2024–25.

INTERDISCIPLINARY ENERGY LAB COURSE

CEI Member Faculty created an interdisciplinary energy lab, the Research Training Testbed located in the Nanoengineering & Sciences Building, and a hands-on course housed there called "Energy Materials, Devices & Systems" (EMDS). Upper-division undergraduates and graduate students get project-based training on materials for energy generation and storage, and the integration of renewables into energy systems.

51 UW students from across Arts & Sciences and Engineering took the EMDS course in 2024–25.

TRAVEL GRANTS

CEI Travel Grants cover up to $1,000 in expenses for UW students conducting research in CEI-related areas to present their work at conferences — an ideal opportunity to apply science communication and networking skills. CEI provided 35 travel grants in 2024–25 with an approximate total of 305 travel grants in its history of operations. **Due to cuts in state and federal funding, CEI halted this program in spring 2025.*

ADVANCED EXPERIENCE PROGRAM

The Advanced Experience Program in Clean Energy (AXP), created through the generous support of the Mark Torrance Foundation, provides opportunities for UW graduate students in STEM to apply their knowledge to support decisionmakers in clean energy investing and science policy. AXP is designed to be a flexible, 20-hour time commitment to complement each student's graduate training and longer-term professional development.

Torrance Tech Due Diligence analysts evaluate emerging climate technologies for the Seattle-area angel investing group E8; while Torrance Science Policy analysts prepare science and engineering briefs for policymakers alongside the Washington State Academy of Sciences (WSAS).

AXP has supported 69 Tech Due Diligence trainees since the 2017–18 academic year, and 41 Science Policy Analysis trainees since 2020–21.

> E8 continues to benefit from the due diligence provided by brilliant UW graduate students through our partnership with CEI. Their science and engineering expertise was key to evaluating 25 climate tech companies last year. Through their thoughtful questions for entrepreneurs and detailed technical reviews, the UW students have helped inform our investors' conversations with startups and connect the dots between technically sound products and scalable business models.
>
> — Karin Kidder, E8 Executive Director

2024–25 AXP Tech Due Diligence analysts with E8 Director of Pipeline & Portfolio Allison Arnold and E8 Board Member Molly Shor.

Working with the E8 team inspired me to pursue a career accelerating the commercialization of energy-saving technologies. I support climate tech companies across all stages of product development and deployment, applying the skills I learned through the CEI program to help them grow. The CEI program was a great complement to my graduate degree in engineering.

— Anne Ruckman, Climate Technology Innovation & Entrepreneurship Associate Advisor and Project Manager (UW Civil & Environmental Engineering MS '23, 2021–22 Torrance Tech Due Diligence Analyst)

The Value of Solar in Washington State

In 2024, the Washington State Legislature directed WSAS to determine the value of distributed solar and storage in the state. In partnership with WSAS staff and the William D. Ruckelshaus Center, a joint effort between the UW Evans School of Public Policy & Governance and Washington State University, the 14 2024–25 Torrance Science Policy Analysts helped conduct interviews with a wide range of interested parties, including utilities; regulators; tribes; the rooftop solar and storage industry; and organizations involved with environmental justice, clean energy, climate change, consumer advocacy, and labor unions.

2024–25 Torrance Science Policy Analysts with WSAS senior project director Donna Gerardi (second from right).

UW CEI graduate students have been instrumental in helping us understand the complexity of the interested parties' positions on the value of distributed solar and storage (VOSS) as it relates to Washington's net metering law. We've made great progress on our project for the State thanks to this partnership, and we look forward to working with more UW clean energy students on Phase 2 of this project in the upcoming year.

— Donna M. Gerardi, WSAS Senior Project Director

SUMMER RESEARCH EXPERIENCES

In partnership with other UW units, industry partners, and nonprofit organizations, CEI provides students from universities, minority-serving institutions, and community or technical colleges with opportunities to perform hands-on research and learn from UW clean energy experts.

Clean Energy Bridge to Research

The Clean Energy Bridge to Research (CEBR) program provided a select group of undergraduate students from two-year and tribal colleges with opportunities to perform clean energy research under the mentorship of UW faculty and students. Participants received a stipend, housing, food allowances, and a travel allowance.

CEI supported eight summer research experiences for undergraduates from two-year colleges in summer 2024. Among 92 total participants since 2016, 55 came from two-year or tribal colleges (55.2%). **Due to cuts in state and federal funding, CEI halted support for this program in summer 2025.*

Angela Andres Zuniga
Pierce College
Mentor: Connor Dalton
PI: Douglas Reed
UW Environmental Engineering ‘27

Desiree Dykstra
North Seattle College
Mentor: Zack Lewandowski
PI: Corie Cobb

Biniyam Gebreyohannes
North Seattle College
Mentor: Miquilina Anagbah
PI: June Lukuyu
UW Computer Science & Engineering ‘26

Audrey Harveaux
Yakima Valley College
Mentor: Maddie Soltani
PI: Julie Rorrer
UW Chemical Engineering ‘27

Deserée Lai
North Seattle College
PI: Cody Schlenker
2023–24 Outstanding Undergraduate Researcher
UW Oceanography B.S. ‘25; current doctoral student

Maria Shvets
Lake Washington Institute of Technology
Mentor: Mahsa Shabani
PI: Aniruddh Vashisth
UW Electrical & Computer Engineering ‘28

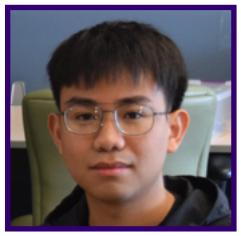
Zoe Solaris
North Seattle College
Mentor: Dhan Bautista
PI: Xiaodong Xu

Moses Sullivan
Green River College
Mentor: Ethan Schwartz
PI: Devin MacKenzie
UW Tacoma Electrical Engineering ‘26

Pathways for Clean Energy Research

CEI provided summer research experiences for UW undergraduate students in order to promote retention and academic excellence in STEM. CEI supported two UW undergraduates in summer 2024 for a total of 30 students since 2015. **Due to cuts in state and federal funding, CEI halted support for this program starting in summer 2026.*

Lillian Nguyen
UW Computer Science & Engineering ‘26
Mentor: Eliane Nirere
PI: June Lukuyu



Thong Nguyen
UW Computer Science & Engineering ‘26
Mentor: Shuan Cheng
PI: Shijing Sun

Outstanding Undergraduate Research Award

CEI’s Outstanding Undergraduate Research (OUR) Award recognizes summer undergraduate researchers for exceptional work and supports their continued journey in STEM fields. Participants are nominated for this award by their graduate student mentors or their PIs. Awardees receive financial assistance of up to $1,500 for a research conference of their choosing and the opportunity for another research experience in a UW CEI lab the following summer. **Due to cuts in state and federal funding, CEI has halted support for this program in 2025–26.*

The 2024–25 Outstanding Undergraduate Researchers are **Thong Nguyen** (UW CSE ‘26) and **Angela Andres Zuniga** (UW Environmental Engineering ‘27, Pierce College A.S. ‘25).

Thong Nguyen ‘26 discusses machine learning for clean energy materials with CEI Member Faculty Shijing Sun (ME).

Angela Andres Zuniga ‘27 works in a Reed Lab glove box as CEI Graduate Fellow Connor Dalton (chemistry) observes.

FACILITIES & INNOVATION

WASHINGTON CLEAN ENERGY TESTBEDS

CEI opened the Washington Clean Energy Testbeds in 2017 to provide academic and industry researchers with state-of-the-art capabilities for full-cycle development of climate technologies, including prototyping, testing, scaling, and validating new materials, devices, and software tools. The lab facility, which currently occupies about 16,000 square feet of leased space near the UW campus, is a unique public venue for innovation and demonstration that offers pay-as-you-go, open access to users without impacting their intellectual property. Testbeds staff scientists and engineers provide customized, hands-on training on each instrument and can also perform contract-based remote work. The staff have experience in relevant sectors including power electronics, climate tech, clean energy, mass production, and life cycle assessment (LCA).

108,484 HOURS OF WORK IN FY25

39% University of Washington

34% Startups/Small Business

27% Large/Corporate

Top Industry Sectors:

63% Aerospace

28% Energy

7% Climate

98 NEW USERS INCLUDING **16** NEW COMPANIES IN FY25

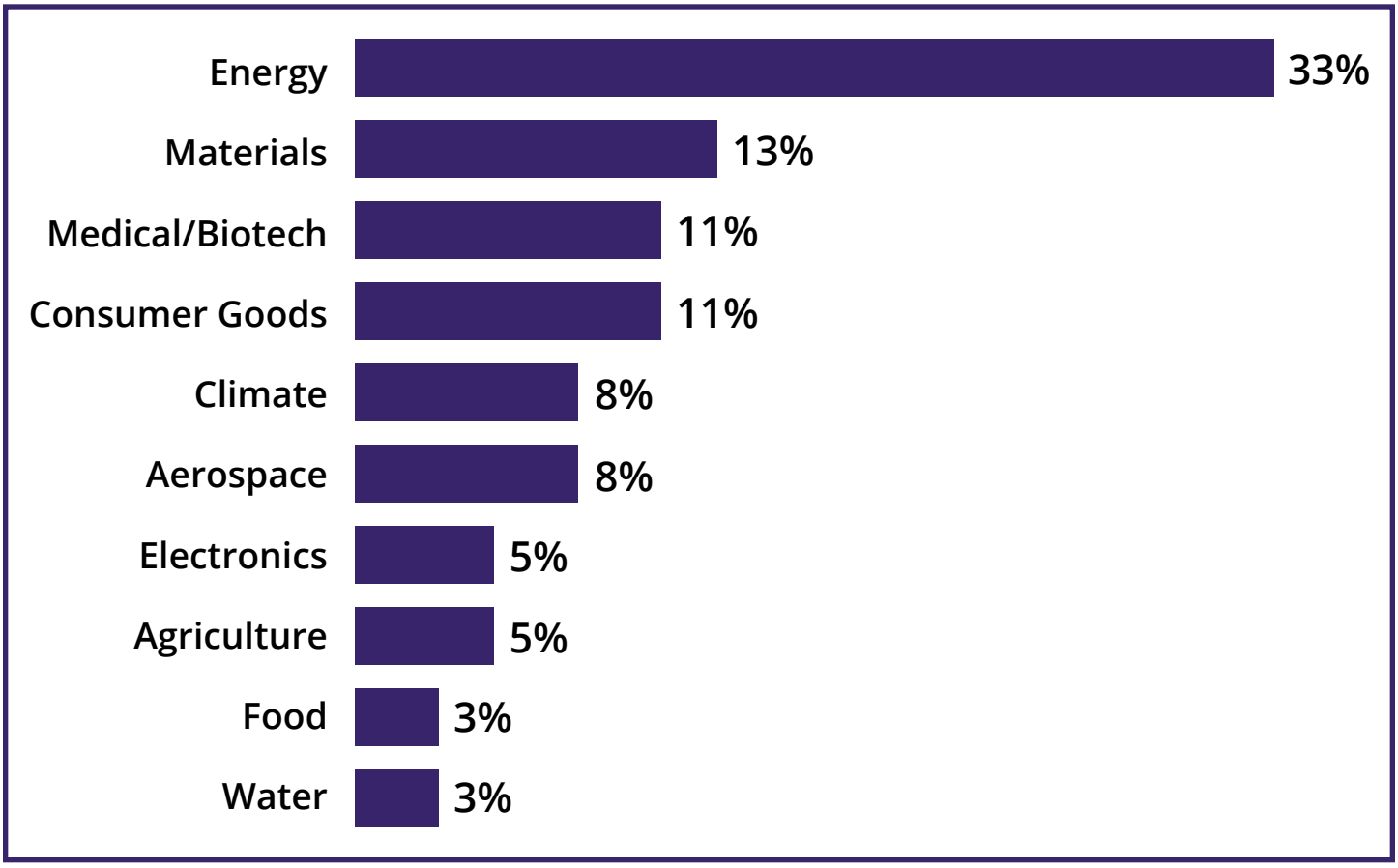
55 USERS PER MONTH IN FY25, ON AVERAGE

900+ USERS

160+ COMPANIES AND ACADEMIC INSTITUTIONS

63%	29%	6%	2%
University of Washington	Startups/Small Business	Large/Corporate	Non-UW Academic

Testbeds Users by Industry Sector



FY25 User Highlights

Aquagga: Received the 2024 Emerging Company Award at the CleanTech Alliance Awards; named former Testbeds Entrepreneur-in-Residence Dhileep Sivam as CEO

EVOLOH: Signed a supply agreement for half a gigawatt (0.5 GW) of electrolyzer stacks

Sepion Technologies: Awarded the Best Commercialization Stage Venture at the 2025 NREL Industry Growth Forum

> When I had the privilege to meet with [former] Secretary of Energy Jennifer Granholm, I told her about how the Testbeds are a critical resource to develop large-scale manufacturing processes for new technologies. Our partnership with the Testbeds was vital in our $20 million Series A funding round — the cutting-edge additive manufacturing tools and expert staff made it the perfect ecosystem to scale our innovative electrode from benchtop experiments to industrial-scale production. There's nothing else like the Testbeds in the U.S.
>
> — Jimmy Rojas, EVOLOH CEO

JANUTECH: NEXT-GEN MATERIALS FOR FASTER-CHARGING BATTERIES

CEI Graduate Fellows Kevin Lee and Zach Wylie are developing a next-generation fast-charging battery using antimony sulfide nanoparticles for the negative electrode material in place of graphite. Wielding open-access resources at the Research Training Testbed (RTT) and main Testbeds facility, they led a team of UW Chemical Engineering students to the $5,000 third place prize at the 2025 Environmental Innovation Challenge (EIC), held on April 3 by the UW Buerk Center for Entrepreneurship.

Lee and Wylie formed JanuTech as a company and filed a provisional patent for both the nanomaterial and the synthesis process. Lee is now a UW CoMotion Postdoctoral Entrepreneur, and JanuTech has applied to the Seattle Climate Innovation Hub to get additional networking and business support to further develop their innovative battery technology.

From left: Cheyenne Yung, Kevin Lee, Yeeshouw Wang, Sydney Rice, Michael Clay, Zach Wylie, Sangho Shin receiving their prize at the 2025 Environmental Innovation Challenge, presented by Alaska Airlines Sustainability Engagement Director Courtney Unruh. (Photo: Matt Hagen)

Testbeds Undergraduate Research Awards

The Testbeds Undergraduate Research Award was established in 2023 thanks to a generous philanthropic gift. UW undergraduate students in their third academic year or higher are eligible to apply for a $3,000 award over three academic quarters for new research in clean energy, advanced manufacturing, and related fields at the Testbeds. The 2024–25 Testbeds Undergraduate Research Award projects are:

UTILIZING GENERATIVE AI MODELS FOR SYNTHETIC BATTERY DATASETS

Tristan Angeles

Mechanical Engineering

Advisor: Shijing Sun

STABILIZING 2D VANADIUM CARBIDE NANOSHEETS WITH ENVIRONMENTALLY BENIGN SALTS

Dijia Bao

Chemical Engineering

Advisor: Jessica Ray

DEVELOPING NONLINEAR ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY (NLEIS) FOR BATTERY CHARACTERIZATION

Andrea Guiley

Chemical Engineering

Advisors: Lilo Pozzo, Dan Schwartz

ANION-EXCHANGE DOPING OF POLYMER SEMICONDUCTORS

Gabrielle Zaher

Chemical Engineering

Advisor: Devin MacKenzie

BATTERY FABRICATION EXPANSION

With Washington State funding to fuel innovation in battery materials and manufacturing, the Testbeds planned a 1,600-square-foot lab focused on scaled battery prototyping. The expansion includes 900 square feet of dry room space, and features state-of-the-art pouch cell fabrication tools to demonstrate and deploy new materials and cell architectures in a standard industry format. The planning committee included stakeholders from the UW, PNNL, and industry. The lab is scheduled to officially open in early 2026.

The dry room in the new battery lab at the Washington Clean Energy Testbeds features an FOM Technologies roll-to-roll coater for battery electrodes, and Digatron equipment for each step of the pouch cell assembly process. (Dennis Wise / UW Photo)

A finished pouch cell prototype with coin cells for comparison. (Dennis Wise / UW Photo)

These new prototyping capabilities at the Testbeds are filling a critical need for battery innovation infrastructure in the U.S. As a Testbeds user, Group14 has already benefited from open-access innovation, and we've also recruited several UW PhDs with top-notch clean energy training. We're eager to explore new applications for our product at the Testbeds on our mission to electrify everything.

— Rick Luebbe, CEO and co-founder of Group14 Technologies

GROUP14

EXPERTS IN RESIDENCE

Testbeds Experts-in-Residence advise entrepreneurs and early-stage climate tech startups at free, weekly office hours, and host workshops and events.

The Testbeds **Entrepreneur-in-Residence (EIR)** advises companies on team formation, product development, strategic marketing, fundraising, manufacturing strategy, and business development.

Babu Jain is the founder and CEO of Navia Energy Inc., a renewable AI technology company, and has served as an Entrepreneur-in-Residence at UW CoMotion since 2017. He has more than 30 years of experience leading global startups as well as technology teams at Fortune 500 companies, including leadership experience in the United States, India, Singapore, and Germany.

The Testbeds **Investor-in-Residence (IIR)**, established in partnership with climate tech angel investment group E8, consults on funding proposals, investor pitches, financial strategy, fundraising, and strategic partnerships.

Jeff Canin is a board member at VertueLab and co-manager of the E8 Fund. Jeff's career includes extensive experience in financial services and venture capital. His current efforts are focused on providing advisory services to early-stage companies and university technology commercialization spinouts.

LIFE CYCLE ASSESSMENT

As a CEI Distinguished Postdoctoral Fellow, Dr. Rachel Woods-Robinson developed a platform for climate tech life-cycle assessment (LCA), which involves estimating all of the impacts of a product on people and ecosystems, from extraction and manufacturing to transportation, deployment, and the end of its usable life. She piloted a new Testbeds service in spring 2025, and joined the Testbeds as a senior staff scientist after completing her postdoc in fall 2025. She has already worked with early-stage companies like Sunchem, a Berkeley Lab startup commercializing nanomaterials for critical minerals recovery.

COMMUNITY ENGAGEMENT

CEI builds capacities for climate action in Washington communities by supporting K-12 and two-year college education, as well as community-led clean energy projects, research, and events.

CEI's K-14 programs seek to expand participation in STEM by making STEM study and STEM careers more attractive and more attainable for a broader cross-section of the US population. Expert education staff and graduate trainees work to integrate cutting-edge UW clean energy research with K-12 and undergraduate STEM concepts to create lesson plans and other learning resources.

Research and project support programs help Washington communities understand the clean energy transition and take advantage of state and federal funding for clean energy demonstration and deployment projects.

K-12 STUDENT ENGAGEMENT

CEI staff, students, and faculty have collaborated to develop a comprehensive library of K-12 clean energy lesson plans and hands-on activities in alignment with Next Generation Science Standards. CEI Education & Training Fellows (ETFs) lead their peers — student Clean Energy Ambassadors — on classroom, museum, and public-facing visits across Washington state, wielding science communication skills and UW's excellence in scholarship to bridge the critical knowledge gap between the STEM concepts covered in a conventional K-12 curriculum and the cutting-edge research that is carving the path towards a clean energy future.

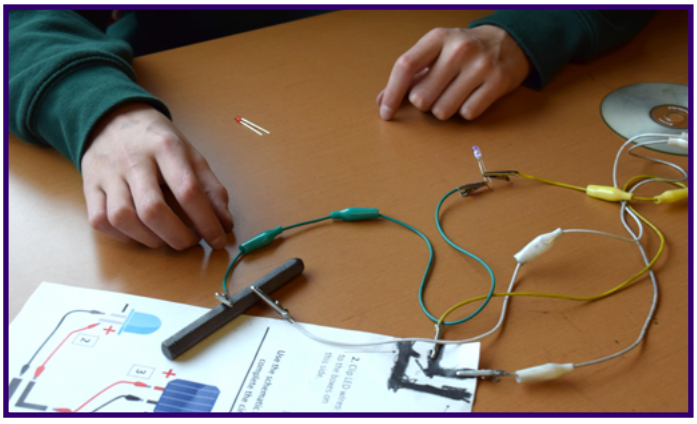
In 2024–25, CEI staff, Education & Training Fellows, and **55** volunteer Clean Energy Ambassadors engaged over **3,200** K-12 students and **27** teachers via:

- **17** classroom visits
- **3** virtual classroom visits
- **6** campus and Testbeds tours
- **2** educators workshops
- **10** STEM fairs
- **9** Science Olympiads across 80 middle schools and 75 high schools in WA

This year, CEI piloted longer-term K-12 engagement with Nelsen Middle School (Renton, WA). Over six days throughout the school year, CEI facilitated three different clean energy activities for the entire 6th grade cohort: Draw-A-Circuit, Renewable City, and Solar Cars.

CEI staff and ETFs will continue to work with Nelsen MS in 2025–26.

CEI SunDawg Kits feature customizable solar cars made of sustainable materials. Students can build the car themselves and modify components so they can create and test their own hypotheses about solar energy! CEI sent out 590 kits in 2024–25.



Middle school students draw with graphite to complete a circuit that powers an LED.

Educator Workshops

CEI educator workshops are designed for participants to explore ways to bring clean energy concepts into their STEM classrooms. At CEI's March 8 event on UW campus, 19 teachers from local high schools made aluminum-air batteries with everyday materials and dye-sensitized solar cells with raspberry juice; connected with CEI researchers; and toured the Research Training Testbed.

Education & Training Fellow Anqi Zu (center) and Clean Energy Ambassadors Lucy Miller, Sophie Song, Sophie McGee, and Jay Dua (from left) discuss STEM research and education at CEI's March 8, 2025 educator workshop.

Clean Energy Ambassador Sophie Song (UW Chemistry) works with Adilene Sanchez (Showalter Middle School) to build an aluminum-air battery.

Clean Energy Ambassadors

Clean Energy Ambassadors are UW graduate and undergraduate students in STEM fields who lead students in hands-on activities at K-12 schools around Washington state and present at public events. The program is led by CEI Education & Training Fellows and is open to any UW student aiming to give back to Washington state, hone their skills at communicating science to the public, or gain first-hand experience as a STEM educator.

Ambassador activities include solar car races, "Meet a Clean Energy Scientist" presentations, and hands-on workshops with mini solar panels. Through these activities, CEI seeks to inspire a new generation of diverse students to take up STEM careers to support the global transition to a clean energy economy.

GATEWAY COLLEGE & WORKFORCE ENGAGEMENT

CEI partners with community, technical, and tribal colleges across Washington to integrate UW research with undergraduate STEM lab courses, and in support of workforce training programs for the burgeoning clean energy sector.

Research Experience for Teachers

CEI offers the Research Experience for Teachers (RET) program for instructors at local gateway colleges who aim to integrate clean energy research into their curriculum. RET participants receive a stipend and spend six weeks in a CEI lab, where they learn a research technique and use it to develop a lesson for a gateway college with minimal equipment capability. **Due to cuts in state and federal funding, CEI has halted support for this program in summer 2026.*

SUMMER 2024 RET PARTICIPANTS

Kimia Ghanbeigi
Cascadia College
Mentors: Bosong Li, Devin MacKenzie

Lisa Redsteer
Northwest Indian College
Mentors: Bosong Li, Devin MacKenzie

Charging up to build batteries

On May 1, 2025, six students from Big Bend Community College in Moses Lake, WA, participated in a battery fabrication workshop at the Testbeds. The students worked with staff scientists to learn three key techniques: slot-die coating, coin cell assembly, and battery testing, respectively.

> I know there are supply chain problems with some battery materials, and questions about how companies can be sustainable, because prices are going up and the resources aren't infinite. With Moses Lake getting new battery facilities, it was important for me to learn about the manufacturing process if I want to work at one of these companies.
>
> — Mark Mejia-Martinez, a Big Bend student who works full-time in manufacturing with an emphasis on automation and robotics, making manhole covers at D&L Foundry.

COMMUNITY RESEARCH & PROJECT SUPPORT

Washington state law directs investments in clean energy projects that benefit underserved and overburdened communities. To advance the equitable deployment of clean energy, CEI partners with communities to analyze and design energy systems that align with community values and achieve specific goals, such as:

- Reducing energy cost burden or generating income
- Lowering emissions and improving local air quality
- Keeping the lights on during power outages
- Sustaining critical energy services during extraordinary power interruptions
- Estimating costs, benefits, and impacts of clean energy options

CEI has established three pathways for communities to partner with UW faculty, students, and staff to co-develop clean energy strategies and tailored outcomes to meet community needs.

1. Open-ended exploration and analysis via UW Engineering capstone projects
2. Microgrid technical analysis
3. Deep-dive research collaboration

With support from the UW Office of the Attorney General, the Testbeds user agreement provides sovereign nations and civic organizations with the same IP and data privacy rights as user companies.

Community Capstones in Clean Energy

Since the 2022–23 academic year, CEI has led Community Capstones in Clean Energy, in which UW engineering seniors fulfill graduation requirements by partnering with local communities and tribes to explore and co-develop clean energy solutions. UW students serve Washington's communities and gain critical experience working with diverse clients while leveraging technical resources and staff expertise at the Washington Clean Energy Testbeds. Community Capstones enable partner communities to access specific engineering talent while building up their own capacities for climate action by participating in the co-design process.

In June 2025, CEI hosted its second Community Capstone Showcase at McKinstry's offices, south of downtown Seattle. UW engineering student teams presented project posters alongside CEI-funded researchers and staff who are working on community engagement and equitable deployment of clean energy solutions.

From top left: SnoPUD engineer Alex Chorey, Rep. Mary Fosse, Rep. Sharon Tomiko Santos, WA Commerce Assistant Director for Energy Jennifer Grove, Perkins Coie partner Susan Betcher, McKinstry senior vice president Megan Owen, UW Provost Tricia Serio, CEI director Dan Schwartz, Tulalip Tribes conservation scientist Steve Hinton, and UW ECE alum Khai Lam '25 at CEI's 2025 Community Capstone Showcase.

From left: Tulalip Tribes liaison Steve Hinton, SnoPUD liaison Alex Chorey, Testbeds senior staff scientist Bosong Li, and UW Engineering students Carter Case, Isabella Young, Grace Gronstad, Jeremiah Popa, Jonathan Yang, Megumi Miyashita, and Ana Tran.

RESILIENCY FOR THE TULALIP TRIBES

Student team (community perspective): Carter Case, Grace Gronstad, Megumi Miyashita, Jeremiah Popa, Ana Tran, Jonathan Yang, Isabella Young

Student team (utility perspective): Mollie Bailey, Kaylee Hudson, Sebastien Huynh, Khai Lam, Katie Parker, Jonathan Tanguma, Tucker Wilson, Amelia Zolze

Partner organizations: Tulalip Tribes, Snohomish County Public Utility District

Community Liaison: Steven Hinton, Conservation Scientist — Treaty Rights & Government Affairs Office

Utility Liaison: Alex Chorey, Principal Engineer – Energy Storage and Emerging Technology

The Tulalip-SnoPUD partnership involved two perspectives on how adding clean energy generation and storage across the Tribal Campus can support Tribal goals for resiliency, cost savings, and carbon reduction, while also providing new dispatchable utility capacity that helps SnoPUD meet its growing electrical loads, while operating a stable and secure system.

One student team took a community perspective on the Tulalip plans to add significant new clean energy infrastructure, assessing the reduction in energy costs to the community, added resiliency to outages, and the lowering of carbon emissions. Ultimately, the technical and economic analysis will support community discussions of options and grant getting. The other student team supported the utility perspective on the Tulalip plans to add significant new clean energy infrastructure, assessing some of its benefits and consequences to SnoPUD operations.

From left: Testbeds senior staff scientist Bosong Li, SnoPUD liaison Alex Chorey, and UW Engineering students Tucker Wilson, Mollie Bailey, Jonathan Tanguma, Katie Parker, Sebastian Huynh, and Khai Lam.

BEACON HILL CLEAN ENERGY & CLIMATE RESILIENCE

CEI supported two 2025 capstone projects that built on a 2024 capstone project with the Beacon Hill Council, "Envisioning Beacon Hill Clean Energy & Climate Resilience", which identified several possible locations for community cooling centers that are accessible to their most vulnerable populations during extreme heat events, and days with unsafe air quality. Final reports were structured to be useful for facilitating community decision-making and capital grant applications.

BEACON UNITED METHODIST CHURCH

Student team: Parsa Entakhabi, Leon Ipaso, Michael Li, Makena Long

Partner organizations: Beacon United Methodist Church, Beacon Hill Clean Energy & Climate Resiliency Task Force

Community liaison: Maria Batayola, Beacon Hill Council Chair

From left: Testbeds senior staff scientist Bosong Li; UW Engineering students Leon Ipaso, Parsa Entakhabi, Makena Long, and Michael Li; Rep. Sharon Tomiko Santos, and Beacon Hill liaison Maria Batayola,

Beacon United Methodist Church energy costs can be reduced by up to 85% through leveraging net-metering benefits, building retrofits, and installing heat pumps and solar panels — while adding resilience to extreme weather. Adding a 200 kWh battery would enable the church to operate normally during a 24-hour power outage with >96% probability of uninterrupted power.

ERITREAN COMMUNITY CENTER

Student team: Yvonne Colson, Alan Fung, Maddy Hernandez, Maurice Smith

Partner organizations: Eritrean Community Center, Beacon Hill Clean Energy & Climate Resiliency Task Force

Community liaison: Maria Batayola, Beacon Hill Council Chair

With solar, heat pumps, and minor retrofits, the Eritrean Community Center could save over $69,000 over 10 years while improving comfort and resilience.

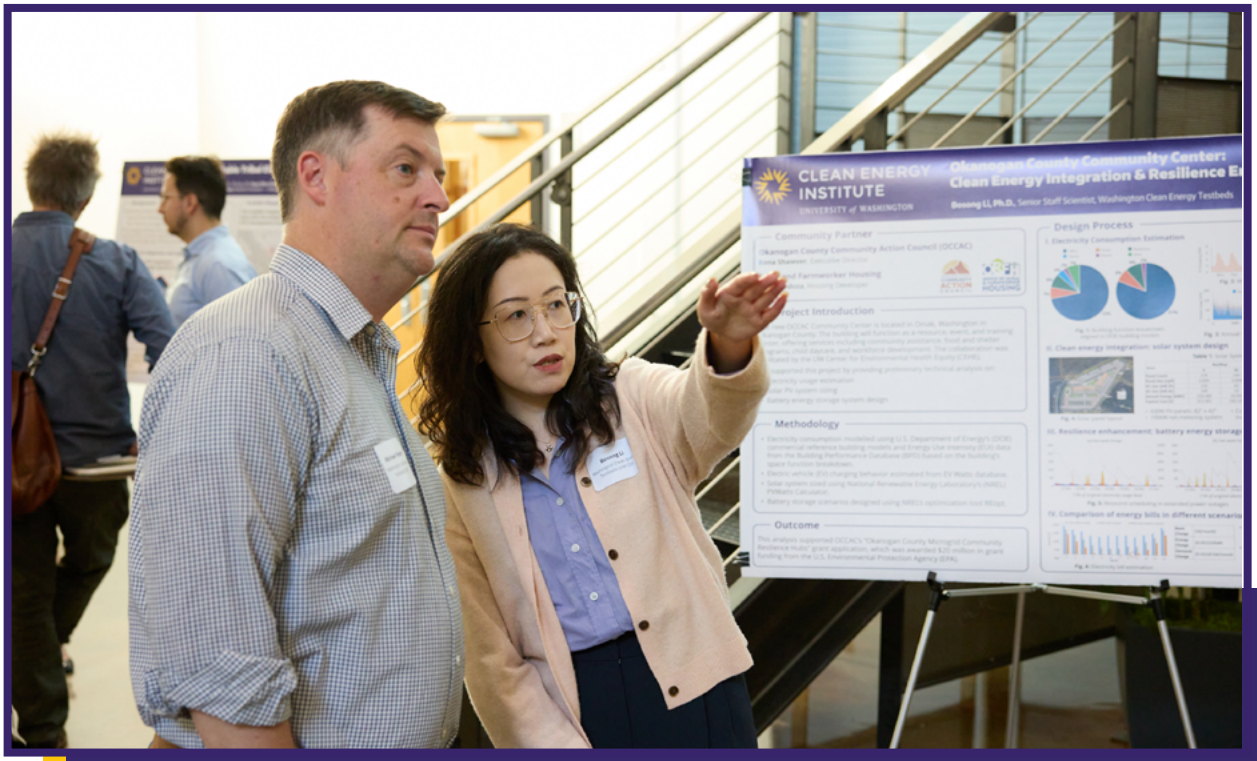
From left: Beacon Hill liaison Maria Batayola; UW Engineering student Maurice Smith; Testbeds senior staff scientist Bosong Li; UW Engineering students Maddy Hernandez, Alan Fung, and Yvonne Colson; Reps. Sharon Tomiko Santos and Mary Fosse; and Cameron Cantwell, legislative assistant for Sen. Tina Orwall.

UW Provost Tricia Serio (left) discusses Community Capstones in Clean Energy with CEI director Dan Schwartz (right), who highlighted the program at the Provost's Town Hall in February 2025.

Okanogan County Community Center: Clean Energy Integration & Resilience Enhancement

CEI partnered with the Okanogan County Community Action Council (OCCAC) and Office of Rural and Farmworker Housing (ORFH) to design a microgrid resiliency hub for the new community center in Omak, WA. The building will function as a resource, event, and training center, offering services including community assistance, food and shelter programs, child daycare, and workforce development. The collaboration was facilitated by the UW Center for Environmental Health Equity.

Testbeds senior staff scientist Dr. Bosong Li provided technical analysis on electricity usage, solar photovoltaic system sizing, and battery energy storage system design. The work supported OCCAC's "Okanogan County Microgrid Community Resilience Hubs" grant application, which was awarded $20 million in funding from the U.S. Environmental Protection Agency.



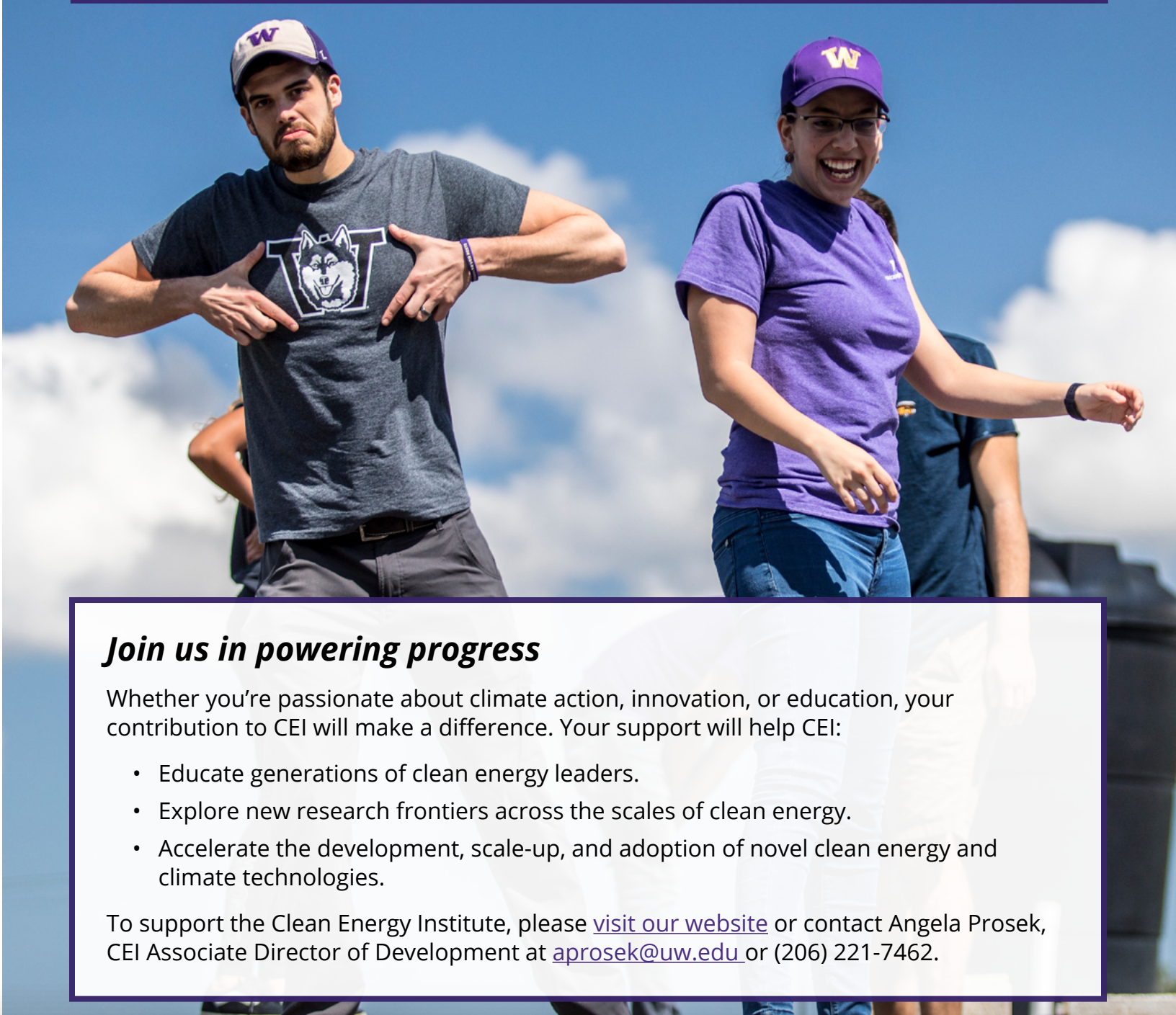
Testbeds managing director Mike Pomfret (left) discusses community clean energy solutions with senior staff scientist Bosong Li (right), who supports co-design projects by operating an in-house computer model of a microgrid based on UW ECE validation of Snohomish PUD's first solar-battery microgrid demonstration in Arlington, WA.

EXPENDITURES

	FY23	FY24	FY25
Faculty Support	$441,902.37	$539,050.70	$754,895.82
Student & Trainee Support	$1,858,968.22	$1,615,696.34	$2,021,908.86
Administrative Staff & Operations	$450,543.04	$656,338.49	$801,410.38
Education & Workforce Engagement	$467,056.91	$398,002.57	$323,453.58
Research, Facilities, & Infrastructure	$2,737,275.97	$3,215,399.30	$4,224,430.29
Community Events & Sponsorships	$67,897.03	$31,246.45	$15,905.84
Total CEI	$6,023,643.54	$6,455,733.85	$8,142,004.77

THANK YOU

We are deeply grateful to our community of supporters — individuals, foundations, and corporate partners — who share our commitment to a scalable and equitable clean energy future for everyone.



Join us in powering progress

Whether you're passionate about climate action, innovation, or education, your contribution to CEI will make a difference. Your support will help CEI:

- Educate generations of clean energy leaders.
- Explore new research frontiers across the scales of clean energy.
- Accelerate the development, scale-up, and adoption of novel clean energy and climate technologies.

To support the Clean Energy Institute, please visit our website or contact Angela Prosek, CEI Associate Director of Development at aprosek@uw.edu or (206) 221-7462.

APPENDIX 1

Dean's Committee
Members: CoE, A&S, A&S Natural Sciences Divisional Dean, CoEnv

Mari Ostendorf
Chair
Vice Provost for Research

Jihui Yang
Administration
CoE Vice Dean

Dan Schwartz
CEI Director

Devin MacKenzie
Technical Director Washington Clean Energy Testbeds

David Ginger
Chief Scientist

Amanda McCracken
Administrator

Michael Pomfret
Managing Director Washington Clean Energy Testbeds

Angie Prosek
Associate Director of Development

Danica Hendrickson
Assoc Director, Education & Workforce Engagement

Suzanne Offen
Assoc Director, Communications & External Relations

Testbeds Staff

CEI/Collaboration Core Comms Staff

Advisory Committees

Devin MacKenzie & Mike Pomfret
- Technical Advisory Council (TAC)

David Ginger
- Trainee & Faculty Advisory Board

APPENDIX 2

Trainee & Faculty Advisory Board

Brandi Cossairt
Professor of Chemistry

Daniel Gamelin
Professor of Chemistry

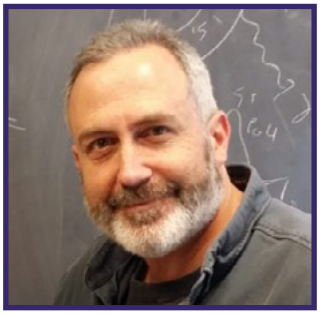
David Ginger
TFAB Chair
Professor of Chemistry

Danica Hendrickson
Associate Director of Education & Workforce Engagement

J. Devin MacKenzie
Professor of Materials Science & Engineering and Mechanical Engineering

Lilo Pozzo
Professor of Chemical Engineering

Cody Schlenker
Professor of Chemistry



Jerry Seidler
Professor of Physics

Austin Wang
CEI Education & Training Fellow, PhD candidate in Chemistry

Xiaodong Xu
Professor of Physics and Materials Science & Engineering

Baosen Zhang
Professor of Electrical & Computer Engineering

APPENDIX 3

CEI Tech Advisory Council

David Benson*, Co-Founder and Managing Director, Bia Energy Capital
Susan Betcher, Partner and Firmwide Co-Chair of Clean Technology Practice, Perkins Coie LLP
Katy Briggs, Global Service Area Leader, Renewables Advisory, DNV GL – Energy
Jeff Canin*, Testbeds Investor-in-Residence, Board Member VertueLab; Co-manager E8 Fund
Byron Crawford, Power Business Development Lead, HDR, Inc.
Dave Curry, Chairman, CarbonQuest and NextWatts
Renee Gastineau, Co-Founder, President & CEO, Benchmark Star Inc
Craig Husa, Executive and Career Coach, Harvard Business Schoo
Jamie Johnson, Partner, Emerging Companies & Venture Capital, Perkins Coie LLP
William Johnston, Principal Owner, Sound Energy Investments
Jun Liu, WRF Innovation Chair in Clean Energy and Campbell Chair Professor, Materials Science & Engineering and Chemical Engineering, UW
Rick Luebbe, CEO & Co-Founder, Group14 Technologies
Lee Otis, E8 Angels Development Committee
Patty Solberg, Senior Advisor, Solutions Innovation, ENGIE North America
Lawrence Tsang, Chief Development Officer, Quantica Infrastructure
Malcolm Witter, Director, Dean Witter Foundation

* = CEI TAC co-chair

APPENDIX 4

Deans Committee

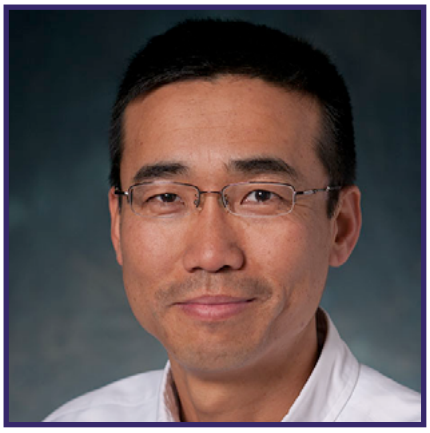
Mari Ostendorf
Committee Chair
UW Vice Provost for Research

Nancy Allbritton
Dean of the College
of Engineering

Dianne Harris
Dean of the College
of Arts and Sciences

Joel Thornton
Interim Dean of the College
of the Environment

Dan Pollack
Divisional Dean of Natural Sciences
in the College of Arts and Sciences



Jihui Yang
Vice Dean of the
College of Engineering