

Justin Heavey

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Experience

Ground Truth Sustainability | Syracuse, NY

Founder and Sustainability Consultant | 2026 - Present

- Founded an independent sustainability consulting practice focused on climate action, greenhouse gas management, clean energy, and sustainability reporting
- Develop sustainability research, benchmarking, and decision-support tools for institutions and land-based systems to advance solutions that improve the environment, benefit communities, and create lasting value
- Translate shrub-willow and living snow fence research into technical guidance and design tools through Salix Systems

Lab Hollow Farms | Syracuse, NY

Founder and Agricultural Consultant | Founded 2022

- Established a registered agricultural business and operated a licensed plant nursery and hemp-growing venture
- Provided cultivation consulting to one of New York State's first-round licensed adult-use cannabis farms

State University of New York College of Environmental Science and Forestry | Syracuse, NY

Sustainability and Research Programs Manager | October 2018 - November 2023

- Directed high-impact energy, research, and climate action programs across over ten years in SUNY ESF roles; led and contributed to \$80 million in cross-sector projects to improve environmental performance, reduce waste, and conserve resources
- Aligned climate strategy and performance targets with state policy, institutional priorities, and stakeholder expectations, supporting compliance and long-term decarbonization. Led institutional sustainability efforts across SUNY ESF roles from 2008–2023, improving the campus AASHE STARS score from 47 (Silver) to 86 (Platinum).
- Modeled decarbonization pathways and evaluated tradeoffs using technoeconomic and lifecycle assessment to inform capital planning and strategic decision-making. Across SUNY ESF roles, integrated sustainability goals, performance targets, and green building practices across \$60 million in new construction, major renovations, and deep energy retrofits.
- Secured state and federal funding for energy and sustainability projects, building long-term program capacity. Across SUNY ESF roles, led and supported \$20 million in sustainability-related research on renewable energy, natural climate solutions, ecosystem services, and life cycle assessment, working with government, industry, and communities through interdisciplinary collaboration and demonstration projects.
- Worked with government agencies, industry partners, and consultants to implement research and sustainability projects across complex multistakeholder environments

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Experience

State University of New York College of Environmental Science and Forestry | Syracuse, NY

Sustainability and Research Programs Coordinator | July 2015 - October 2018

- Tracked Scope 1, 2, and 3 emissions, mitigation efforts, offsets, and forest carbon accounting. Across SUNY ESF roles, developed and implemented a Climate Action Plan to achieve a 40% emissions reduction while saving millions on utility costs.
- Led development of an energy master plan for electrification, hot-water loop, and 85% decarbonization by 2050
- Launched a green revolving fund, including a financial modeling tool and a policy framework

Senior Research Support Specialist | August 2013 - July 2015

- Coordinated funded research on sustainable bioenergy crops and land-based climate solutions. Across SUNY ESF roles, authored over ten peer-reviewed journal articles, technical manuals, and extension publications, and delivered 100+ presentations, trainings, and tours at regional, national, and international events.
- Conducted life cycle financial, energy, and emissions analysis for bioenergy and living snow fences

Graduate Research Assistant | September 2011 - August 2013

- Designed and installed sustainable vegetation systems for New York State Department of Transportation

Undergraduate Research Assistant | June 2008 - August 2011

- Conducted sustainability benchmarking, tracking, and improvement using AASHE STARS Pilot and v1.0
- Co-authored a Climate Action Plan for decarbonization and a sustainable campus

Education

State University of New York College of Environmental Science and Forestry | Syracuse, NY

Master of Science in Forest Resources Management | 2013

Option in Forest Management and Silviculture

Bachelor of Science in Environmental Studies magna cum laude | 2011

Minor in Renewable Energy Systems | Option in Environmental Policy, Planning, and Law

Department Award for Highest Academic Achievement

Areas of Practice

Sustainability strategy, governance, and continuous improvement

Energy analysis, management, and renewable energy systems

Greenhouse gas emissions accounting, mitigation, and offsets

Natural climate solutions, bioenergy, and carbon sequestration

Green building design, retrofitting, and certification

Data collection, management, analysis, and interpretation

Life cycle economic, energy, and environmental modeling

Policy alignment, regulatory compliance, disclosure, and reporting

Climate action, energy, and sustainability planning

Sustainability program development, implementation, and assessment

Grant proposal development and funded program leadership

Interdisciplinary team management and cross-sector partnerships

Organizational sustainability literacy and culture change

Sustainability education, outreach, and technical assistance

Sustainability consulting, benchmarking, and decision-support tools

Shrub-willow and living snow fence technical guidance and design

Agricultural consulting and cultivation guidance

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Experience

State University of New York College of Environmental Science and Forestry | Syracuse, NY

Sustainability and Research Programs Manager | October 2018 - November 2023

- Administered quarterly and annual reporting for climate commitments and regulatory/grant requirements
- Integrated sustainability data into operational decision-making and capital projects and advised leadership on building energy performance, risks, and strategic priorities
- Established a Campus Living Lab Collaborative of faculty, staff, and students with 10+ initiatives
- Identified and developed new initiatives through on-campus innovation, benchmarking, strategic partnerships, funding opportunities, and program expansion
- Supervised 10–15 student sustainability, research, and garden assistants

Sustainability and Research Programs Coordinator | July 2015 - October 2018

- Managed a variety of sustainability and energy research projects, including grant-funded initiatives, capital projects, performance tracking, continuous improvement, compliance, and reporting
- Facilitated a sustainability committee and working groups to engage the campus community
- Contributed to innovative research on sustainable bioenergy supply chains and natural climate solutions
- Collaborated with the Center for Native Peoples and the Environment on Indigenous food systems
- Supervised 10–15 student sustainability, research, and garden assistants

Senior Research Support Specialist | August 2013 - July 2015

- Worked with academic, government, and industry partners to advance bioenergy supply chains
- Provided technical assistance and extension services to bioenergy producers, including regular field meetings, site assessments, crop monitoring, analytics, and crop management recommendations
- Developed and delivered sustainability education and outreach programs to diverse audiences, including an outreach campaign for the adoption of bioenergy and sustainable land-use practices
- Supervised 5–10 student research and garden assistants

Graduate Research Assistant | September 2011 - August 2013

- Developed and delivered a suite of educational materials for training, outreach, and engagement
- Supervised up to five student research assistants for field and laboratory work

Undergraduate Research Assistant | June 2008 - August 2011

- Launched and coordinated student-driven initiatives including a campus garden and composting initiative

Teaching

State University of New York College of Environmental Science and Forestry | Syracuse, NY

Visiting Instructor | Undergraduate course conducting energy and emissions audits for local businesses

Outreach Coordinator | USDA bioenergy outreach campaign, demonstrations, farm shows, and town halls

Extension Educator | Penn State Extension partnership providing technical guidance to bioenergy producers

Trainer | New York State Department of Transportation webinars, classroom instruction, and demonstrations

Guest Lecturer | Undergraduate energy and ecology lectures and research station walking tours

Teaching Assistant | Graduate seminar in biophysical economics, systems ecology, energy, and sustainability

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Projects

Marshall Hall LEED Gold Renovation and Deep Energy Retrofits | SUCF | \$32.4 million

Promoted climate commitments and green building policy alignment to build consensus around sustainable design choices for the renovation of historic 90,000 sq. ft. academic building.

Achieved the building's first LEED rating and New York State's Deep Energy Retrofit target of a 50% reduction in energy use. Worked with funding agencies, contractors, and consultants to set LEED and green building targets. Reduced total building energy consumption despite adding cooling. Funded with support from SUNY Construction Fund (SUCF).

Gateway Center LEED Platinum Building and CHP Plant | SUCF and NYSERDA | \$28.3 million

Researched and advised on green building practices and LEED certification for new construction of 52,000 sq. ft. building.

Conducted advanced energy, financial, and emissions modeling analysis for the biomass-fueled, campus-integrated combined heat and power (CHP) plant. Created outreach materials and provided tours of the CHP plant to students, campus visitors, and funding agencies. Funded with support from SUCF and New York State Energy Research and Development Authority (NYSERDA).

Northeast Woody/Warm Season Biomass Consortium | USDA NIFA | \$10 million consortium funding

Served as senior personnel for a regional five-year interdisciplinary research consortium among more than 80 academic, industry, government, and community partners to advance sustainable bioenergy supply chains from multiple feedstocks.

Provided bioenergy producers with critical extension services such as field demonstrations, crop scouting, and a specialized equipment-sharing cooperative. Funded with support from U.S. Department of Agriculture National Institute of Food and Agriculture (USDA NIFA).

Improved Biomass Logistics Utilizing Woody Feedstocks | DOE BETO | \$2,317,381 DOE funding + \$1,512,815 cost share

Contributed technical and analytical support to a multiyear, applied research project to improve efficiency, cost-effectiveness, and life cycle emissions of bioenergy crops.

Technical services included experimental design, GPS and GIS tasks, sample collection and handling, time-motion studies, and farm equipment operation. Funded with support from U.S. Department of Energy Bioenergy Technologies Office (DOE BETO).

Shrub Willow Sustainable Remediation for the Solvay Settling Basins | Honeywell | \$2 million

Helped lead a multiyear applied research project to remediate a 100-acre former industrial site using ecological engineering to protect local waterways from contaminated runoff.

Collected physical samples and data from shrub willow evapotranspiration planting to understand the hydrologic and ecological function of the system. Supervised teams to conduct on-site data collection, establish new plantings, perform crop maintenance, and conduct harvesting operations. Prepared project reports, maps, and data visualizations.

UAS Imaging to Complement Breeding of Shrub Willow for Improved Yield | USDA | \$1 million

Pioneered the use of unmanned aerial systems (UAS) equipped with multispectral cameras to survey commercial bioenergy crops to detect plant health and stress using vegetation indices for improved analytics and crop management.

Stochastic Techno-Economic and Life Cycle Models for Bioenergy Pathways | USDA | \$906,722 USDA NIFA award

Built the EcoWillow 3.0S financial analysis tool, developed the base-case economic and emissions scenario, and helped integrate the tool into a combined stochastic techno-economic/life cycle assessment (TEA/LCA) model.

Developing and Implementing Living Snow Fences for New York State | USDOT RITA | \$500,000

Led all aspects of a three-year statewide "green technology transfer" grant award.

Conducted applied research on living snow fences. Trained New York State Department of Transportation (NYSDOT) staff to design, install, and maintain living snow fences using best practices for effectiveness, efficiency, and return on investment.

Funded with support from the U.S. Department of Transportation (USDOT) Research and Innovative Technology Administration (RITA).

Training and Outreach for USDA Biomass Crop Assistance Program | NYSERDA | \$500,000

Directed all aspects of a five-year project to educate farmers and communities about USDA BCAP, facilitate landowner enrollment, and support active participation by enrolled producers across New York State.

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Projects

On-Site Energy Manager for SUNY ESF | NYSERDA | \$275,000

Applied for and administered grant funding for the campus energy manager position to manage campus utility use and emissions at the State University of New York College of Environmental Science and Forestry (SUNY ESF).

Clean Energy Master Plan for SUNY ESF | NYSERDA | \$250,000

Secured grant funding and facilitated two-year project with engineering firm Ramboll to create SUNY ESF's first Clean Energy Master Plan for renewable energy, conservation, efficiency, and carbon neutrality.

Set pathway for 85% reduction in GHG emissions by 2050.

Natural Climate Solutions for a Net Zero Carbon Future | SUNY | \$200,000

Assessed carbon sequestration rates and drafted forest management policy for specific plots of SUNY ESF forest land in the Adirondack Mountains to meet and exceed the institutional carbon neutrality goal.

Modeled and visualized carbon sequestration scenarios accounting for forest type, succession, and silvicultural management prescriptions.

Eco-Luminance: Vegetation and Efficient Lighting for Safer Roadways | NYSDOT | \$200,000

Designed a decision matrix of salt-resistant and hardy native shrub species for multifunctional plantings on roadsides to break up headlight glare and improve road safety.

Planted and monitored a species trial along a roadside with heavy salt spray exposure.

Energy Audits and Master Plan for SUNY ESF Remote Properties | NYSERDA | \$150,000

Applied for grant funding and administered audits with engineering firm Ramboll and subcontractors to assess 250,000 sq. ft. across more than 50 buildings in remote locations and retro-commission several large buildings on the main campus.

Impact of Willow Biomass Production on Water Ecosystem Services | USDA | \$100,000

Facilitated research on commercial willow bioenergy plantings to study field water quantity and quality, erosion, and soil GHG emissions on bare fields versus established crops.

Evaluation of Unmanned Aerial Systems for Vegetation Monitoring | USDA | \$27,000

Created and implemented an aerial crop-scouting protocol using licensed drone flights to capture aerial photos and videos of 1,200 acres of commercial bioenergy plantings.

Monitored crop health throughout the growing season in conjunction with ground assessments. Analyzed aerial and ground observations and shared crop health findings and management recommendations with producers.

Campus Community Garden | GCI | \$10,000

Established and led operations on a three-quarter-acre campus garden from 2009–2023.

Garden features include a mature edible forest garden with over 50 species of edible perennials, a small fruit orchard, an organic vegetable garden, a pollinator garden, and an Indigenous Three Sisters garden. The garden has employed dozens of students for more than ten years, providing firsthand experience with sustainable food systems and traditional ecological knowledge. Originally funded by the Green Campus Initiative (GCI) student club and the SUNY ESF Sustainability Division.

Static Aerated Compost System | GCI | \$4,000

Championed the establishment of a student-run composting program utilizing static aerated bins and applying the compost at the community garden.

Facilitated a working relationship between students, dining, facilities, and campus leadership.

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Publications

Integrated Stochastic Life Cycle Assessment and Techno-Economic Analysis for Shrub Willow Production in the Northeastern United States | Sustainability | Special Issue Renewable Energy: Pathways towards Sustainable Development | 2022

Roadmap for Poplar and Willow to Provide Environmental Services and Build the Bioeconomy | Washington State University Extension Publications | 2019

Stochastic Techno-Economic Analysis of Shrub Willow Production Using EcoWillow 3.0S | Biofuels, Bioproducts and Biorefining | 2018

Impact of Parcel Size, Field Shape, Crop Yield, Storage Location, and Collection Equipment on the Performance of Commercial Shrub Willow Fields | Bioenergy Research | 2018

Shrub Willow Biomass Across Three Harvests in New York and Minnesota | Bioenergy Research | 2018

Poplar and Shrub Willow Energy Crops in the United States: Field Trial Results from the Multiyear Regional Feedstock Partnership and Yield Maps Based on the PRISM-ELM Model | Bioenergy | 2018

Willow Biomass Crop Producers Handbook | The Research Foundation for SUNY | 2017

The Economics of Growing Shrub Willow as a Bioenergy Buffer on Agricultural Fields: A Case Study in the Midwest Corn Belt | Biofuels, Bioproducts and Biorefining | 2016

Advances in Shrub Willow Crops for Bioenergy, Renewable Products, and Environmental Benefits | Food and Energy Security | 2016

Living Snow Fences Show Potential for Large Storage Capacity and Reduced Drift Length | Agroforestry Systems | 2014

Shrub Willow: Renewable Energy, Environmental Benefits, Opportunities for Rural Development | The Research Foundation for SUNY | 2014

Structure and Function of Living Snow Fences in New York State | State University of New York | 2014

Living Snow Fences Handbook | The Research Foundation for SUNY | 2014

Presentations

United Nations High-Level Political Forum on Sustainable Development | New York, NY | 2019

International Energy Agency Task 43 Workshop | Sydney, NSW, Australia | 2017

Australia Bioenergy | Sydney, NSW, Australia | 2017

AASHE | San Antonio, TX | 2017

Mid-Atlantic Bioenergy Conference and Expo | State College, PA | 2017

Extension Sustainability Summit | Portland, OR | 2016

National Energy Extension Summit | Seattle, WA | 2015

International Poplar and Willow Symposium | Vancouver, BC, Canada | 2014

Woody Crops Operations Working Group | Seattle, WA | 2014

Clean Energy Economy Conference | Lake Placid, NY | 2013

AASHE | Denver, CO | 2010