

# EDUCATING WI'S RENEWABLE WORKFORCE

1:30 PM



JENNY  
HEINZEN



AMY  
SEEBOTH-  
WILSON



KENNETH  
WALZ



SARAH  
WINDJUE



**MADISON**  
**AREA | TECHNICAL**  
**COLLEGE**

Kenneth A. Walz, Ph.D.

RENEW Energy Summit  
Jan 16, 2020





# MADISON

---

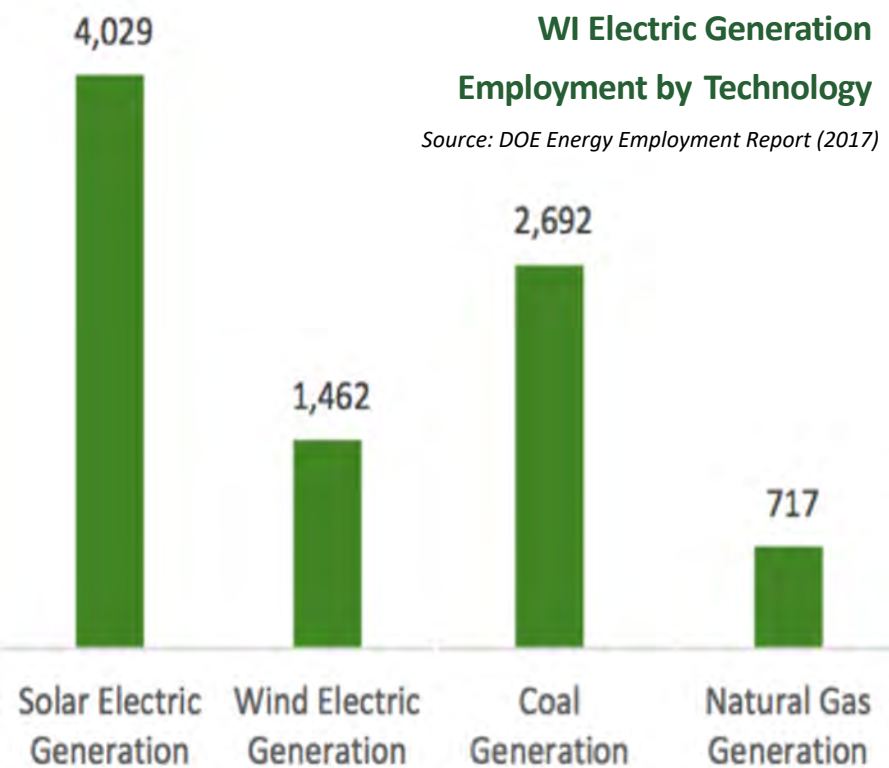
AREA | TECHNICAL

---

# COLLEGE

## Renewable Energy Certificate





### Renewable Energy Occupation Wages (per hour)



Source: Economic Modeling Specialists (EMS) Int'l data

CNN Money U.S. Business Markets Tech Media Personal Finance Small Biz Luxury

American Opportunity

## Solar jobs growing 17 times faster than US economy

by Matt Egan @MattEganCNN

May 25, 2017: 4:20 PM ET

Inside the U.S. solar jobs boom

Get Personalized Rates

Loan Type	Rate	APR
30-yr fixed	3.63%	3.71%
15-yr fixed	2.88%	3.04%
5/1 ARM	2.5%	3.7%

Loan Amount	APR	Payment
\$225,000 (5/1 ARM)	3.7%	\$889/mo
\$350,000 (5/1 ARM)	3.72%	\$1,499/mo

*These are jobs that:*

- 1) Pay a family supporting wage
- 2) Cannot be outsourced
- 3) Cannot be done by robots
- 4) Benefit society



# Center for Renewable Energy Advanced Technological Education (CREATE)



Award #s  
1600934  
180893  
1901852

Providing renewable energy education for teachers  
Establishing industry and academic partnerships  
Promoting renewable energy careers  
Addressing technician knowledge, skills, and competencies

**WI STEM Educator Solar Institute**  
**July 7-9, 2020**  
***[www.CreateEnergy.org](http://www.CreateEnergy.org)***





# Solar Roadmap

## Table of Contents

- Overview and Executive Summary
- Section 1: Solar PV Stakeholders at Madison College
- Section 2: Solar PV Development Considerations
- Section 3: Campus Energy Analysis
- Section 4: Solar PV Site Prioritization
- Section 5: Solar PV Project Financial Modeling
- Section 6: Solar PV Contracting - Bid-Ready Solar Projects
- Section 7: Solar PV RFPs - Creation and Execution
- Section 8: Solar PV Forecast and Future Outlook
- Section 9: Solar PV Instruction at Madison College
- Section 10: Solar Grant Related Activities at Madison College

## Priorities Identified

1. Truax Main Campus
2. New South Campus
3. Commercial Avenue  
Lab Update
4. New Child Care Center
5. Regional Campuses
6. Health and Protective  
Services buildings



# Madison College Truax Campus 1,850 KW Commissioned in January 2019





# Madison College Goodman South Campus

## 125 KW Commissioned in Sept 2019









# Wisconsin K-12 Energy Education Program (KEEP)



## Goal:

*To leverage teacher education to improve and increase energy literacy in Wisconsin's K-12 schools as a means of contributing to statewide energy savings.*



Wisconsin Center for Environmental Education  
College of Natural Resources  
**University of Wisconsin - Stevens Point**

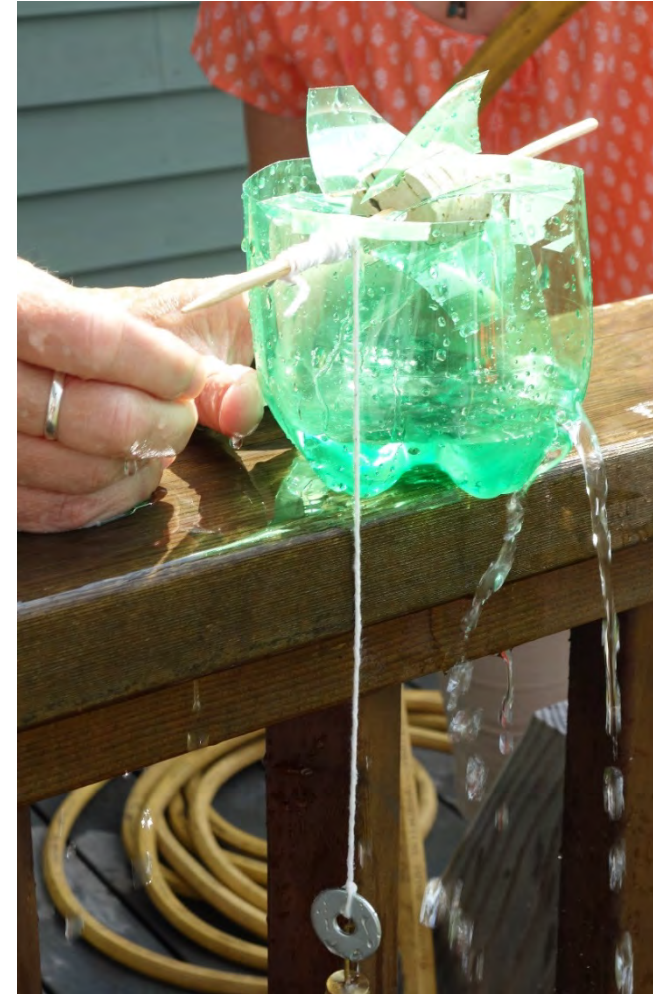


# Teacher Professional Development





# Curriculum/Resources





# Student Engagement

## School-to-Home Menu of Options

### Classroom Visits and Curriculum

- ▶ Investigations for Students in Energy Efficiency (I-SEE)
- ▶ Student Energy Audit Training (SEAT)
- ▶ Watt's Up Unit

### Hands-on Lending Resources

- ▶ Take-home Energy Audit Kit
- ▶ Energy Audit Kit
- ▶ Watts Up? Meters
- ▶ Lending Library

### Partner Programs

- ▶ Cool Choices
- ▶ STEMhero



# Stay Connected



[KEEPProgram.org](http://KEEPProgram.org)



Twitter - [@KEEPprogram](https://twitter.com/KEEPprogram)



<https://www.facebook.com/wiskeep>



[Sara.Windjue@uwsp.edu](mailto:Sara.Windjue@uwsp.edu)



**715-346-4163**





# Renewable Energy Training

- **Photovoltaics (PV)**
- Solar Thermal Energy Systems
- Small Wind Energy Systems
- National Electrical Code



# Photovoltaics (PV) Training

- MREA is a **NABCEP PV Associate Exam** Provider  
Basic PV (101), PV Site Assessment (201) & PV System Design (202)  
**103 students earned their NABCEP PV Associate last year**
- Courses approved for NABCEP advanced training, recertification & renewal (Board Certifications)
- Accredited by IREC
- Many courses approved for continuing education with IA, MN & WI (state electrical licenses)
- The MREA is approved by the Wisconsin State Approving Agency (SAA) for GI Bill® education benefits



# Training Format & Options

- **Online courses**
- **Classroom & hands-on (lab) training**
- **Contract training for large groups (by request)**
- **Solar Training Academies**
  - Eau Claire
  - Milwaukee
  - Twin Cities
  - Bloomington, IL
  - Kankakee, IL
  - Cedar Rapids, IA
  - Deerfield, WI



# University of Wisconsin-Platteville

## Sustainability and Renewable Energy Systems (SRES)

*College of Engineering, Mathematics and Science*



UNIVERSITY OF WISCONSIN  
**PLATTEVILLE**



# Sustainable & Renewable Energy Systems

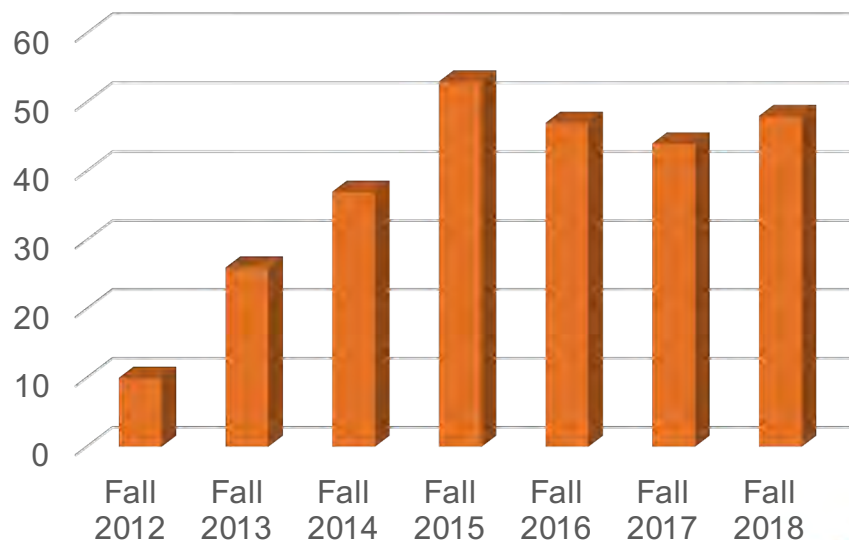
## Major

- Design & Analysis

- Technical side of energy projects ranging from analysis, design, energy and waste reduction, operational, and process improvement facets in industry.

- Development & Management

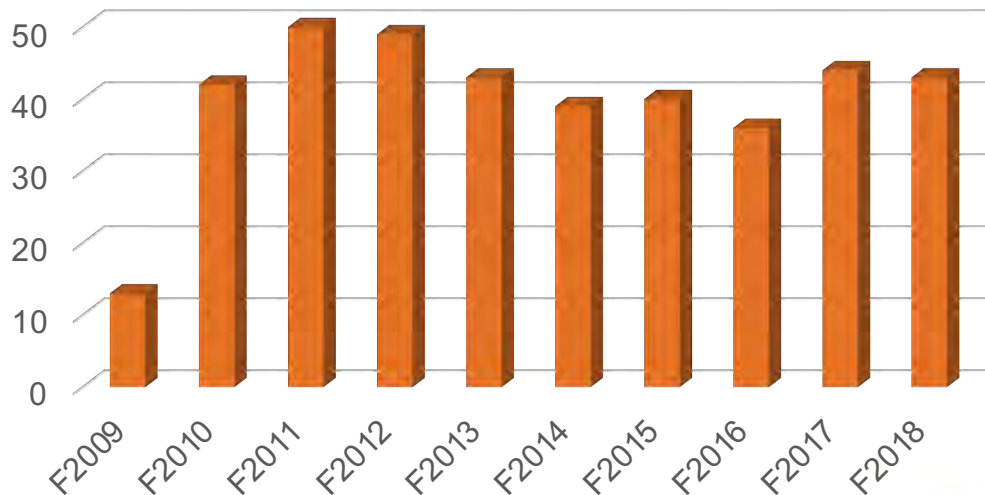
- Prepare you for a career as an auditor, inventory specialist, logistic expert or project manager.



# Sustainable & Renewable Energy Systems

## Minor

- Popular with among Industrial Engineering, Mechanical Engineering, Electrical Engineer, Business Administration, and, increasingly Agriculture majors
- Broad-based knowledge relating to renewable energy and sustainability.





# Outreach & Recruitment

- Admission outreach and prospective student tours
- Exhibit at annual EMS Expo- 1500+ students K-12 throughout WI
- Students visit their high schools and promote the program
- Hands-on workshops for three summer camps



UNIVERSITY OF WISCONSIN  
**PLATTEVILLE**