

Clean Energy Research and Education: Looking Forward

Peter Ping Liu, Ph D, PE, CQE and CSTM

Center for Clean Energy Research and Education (CENCERE)
Eastern Illinois University

2/25/2014

EIU Science and Technology Symposium
2013

1



Challenge

How to systematically integrate students learning with the opportunities brought with the Renewable Energy Center.

Center for Clean Energy Research and Education (CENCERE)

Engage faculty, students and staff in the study of clean energy across the whole campus.

2/25/2014

EIU Science and Technology Symposium
2013

3

2/25/2014

EIU Science and Technology Symposium
2013

4

Undergraduate Education Applied Engineering & Technology

Alternative Energies and Sustainability
Concentration

Dr. Isaac Slaven

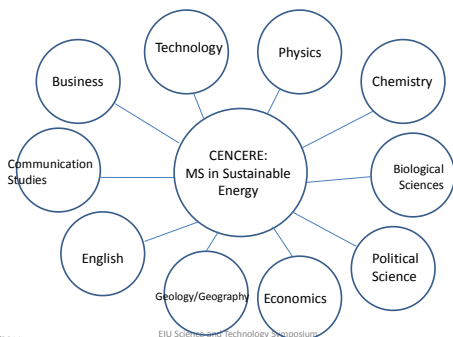
Undergraduate Education

Interdisciplinary Minor on Environmental
Sustainability

Dr. Karen Gaines

Dr. Chris Laingen

Center for Clean Energy Research and Education (CENCERE)
Multi-disciplinary Master of Science in Sustainable Energy
Prepare Leaders for Energy Industry



Biomass Education and Research

A Project Supported by National Science Foundation



Grassy Biomass Gasification

A Project Sponsored by Illinois Sustainable Technology Center, UIUC
Dr. Jerry Cloward
Dr. Rendong Bai

Chengdong Hu, Ramin Khalilnejad



2/25/2014

2013

9

Application of Biomass Gasification Ash

A Project Sponsored by Illinois Sustainable Technology Center at UIUC



2/25/2014

EIU Science and Technology Symposium
2013

10

Undergraduate Student Research



2/25/2014

EIU Science and Technology Symposium
2013

11

Making Pellets from Recycled Wood

Partner with Private Industry
Patrick Lyons and David Conwell



2/25/2014

EIU Science and Technology Symposium
2013

12

Wood Pellets



2/25/2014

EIU Science and Technology Symposium
2013

13

Featured Research

- Dr. Thomas Canam (Biological Science): Fungi for Energy
- Dr. Jill Deppie: Sustainable Ecological Systems
- Mr. Dan Johnson: Bio-diesel
- Dr. Jonathan Blitz (Chemistry): Gasification Chemistry
- Dr. Hongshen He (Chemistry): Organic Solar Cells
- Dr. Gopal Periyannan (Chemistry): Microbial Energy Solutions
- Dr. Douglas Klarup and Dr. Karen Gaines: Biochar

2/25/2014

EIU Science and Technology Symposium
2013

14

Renewable Energy Research Mentorship for High School Students at EIU



2/25/2014

EIU Science and Technology Symposium
2013

15

Vision: Biomass Go To Place

“...EIU will be the “go-to location” to see the combination of bench scale and commercial scale gasification in support of research, education and regional economic development...”

--President Perry (August 31, 2011)

2/25/2014

EIU Science and Technology Symposium
2013

16

EIU Energy Park



2/25/2014

EIU Science and Technology Symposium
2013

17

Ground Breaking for CENCERE Building



2/25/2014

EIU Science and Technology Symposium
2013

18

CENCERE Building Under Construction

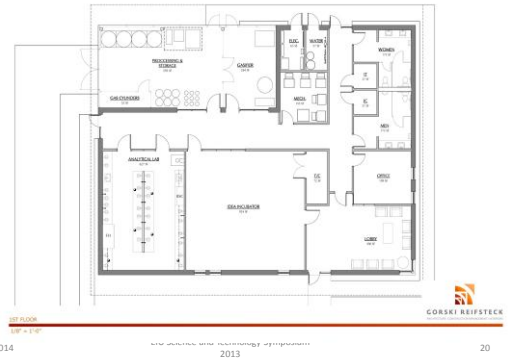


2/25/2014

2013

19

Research Labs and Idea Incubator



2/25/2014

EIU Science and Technology Symposium
2013

20

Outreach

- Renewable Energy Research Mentorship (ongoing)
- Teachers Institute on Renewable Energy (June 2014)
- Summer Camp for High School Students (June 2014)

Center for Clean Energy Research
and Education (CENCERE)

<http://www.eiu.edu/energy/>

Thank you!

Questions?