

Introduction to the Wind Energy Science,
Engineering, and Policy (WESEP)
Seminar
Fall Semester, 2015

J. McCalley

WESEP 594

September 10, 2015

Today's class

1. Introductions
2. WESEP 594 course overview
3. Semester schedule
4. International opportunities
5. Attending conferences/writing papers
6. E-mail to WESEP faculty
7. Upcoming Wind Symposium
8. Upcoming annual review
9. Last year's review

2. WESEP 594 Course Overview

1. Your presentations:
 - Let me know if you would like to give one
 - I encourage those of you who are taking qualifier or preliminary exam to present in here first
 - ...and those of you who spent the summer overseas
2. External speakers: industry, government, other universities
3. ISU faculty

3. Semester schedule

<http://home.eng.iastate.edu/~jdm/wesep594/>

Let me know if there is anyone in particular who you are interested to invite to provide a seminar...

...or if there is any particular type of person you would like to invite to give a seminar.

4. International opportunities

- The following IGERT fellows have had IGERT-funded international experiences in previous years:
 - Huiyi Zhang
 - David Jahn
- The following IGERT fellows had international experiences this summer:
 - Nick Brown: OFFIS Energies, Oldenburg
 - Michael Czahor: Fraunhofer IWES, Hannover Germany
 - Aaron Rosenberg: École Polytechnique Fédérale de Lausanne, Switzerland
- IGERT supports expenses not incurred if you were here (travel, accommodations, some subsistence).
 - you are **strongly** encouraged to do it;
 - if you are not planning to do it, I want to know “why not”?;
 - it helps you now; it helps you later; it helps your advisor;
 - talk with your advisor, and/or me, regarding where.

5. Attending conferences/writing papers

You are encouraged to attend conferences and workshops to present papers and posters.

I can provide a significant part of the support for such activities (but not all).

➔ it helps you now; it helps you later; it helps your advisor.

6. E-mail to WESEP advisors

- It was suggested in last year's annual review that I send information to WESEP advising faculty.
- I have not done that yet but intend to do it tomorrow.
- Information I intend to send is the following:
 - Funding is for 2.5/2.0 years for students with BS/MS; faculty is expected to support thereafter, assuming reasonable progress is being made.
 - Funds are available for IGERT fellow international experience, can be anywhere as long as it is not in the US. Use it!!!
 - Funds are available to support student attendance at conferences; generally the support is split between IGERT and faculty.
 - Sequence of WESEP exams: qualifier, preliminary, oral defense.
 - Double-majoring usually costs little additional time, but it varies from one "second-major" to another.
 - Barb is available to answer (or help answer) logistical questions.
 - The WESL is available for research with people who can assist.
 - All WESEP students are asked to present a poster on 9/28 symposium.
 - RECRUIT! Please let me know if you have any potential IGERT/WESEP applicants.
 - Please read the Executive Summary of the 2014 Annual Review at <http://www.igert.windenergy.iastate.edu/about/program-evaluation/>.
- What else do you suggest I communicate?

7. Upcoming Wind Symposium

Iowa State University Wind Energy Industry Symposium

Monday, September 28, 2015

Networking Reception, 5 PM – 7 PM

Location: Scheman Building at the Iowa State Center, Ames, IA

Drinks and Appetizers

Faculty/Student Research Posters



Tuesday, September 29, 2015

7:30 AM – 5:30 PM

Location: Applied Sciences Complex II, Rm 257

Lab tours: On campus

7:30-7:50	Continental Breakfast and Check-In	12:30-1:10	Structural Health & Condition Monitoring for Blades & Rotary Machinery – Leonard Bond, Director, Center for Nondestructive Evaluation, ISU; Behzad Moslehi, CEO/CTO, Intelligent Fiber Optic Systems Corp.
7:50-8:05	Welcome – Jonathan Wickert, Senior Vice President and Provost; Sarah Rajala, Dean, College of Engineering; Iowa State University (ISU)	1:10-1:50	Grid Integration – Jim McCalley, Professor, Electrical and Computer Engineering, ISU; Clyde Loutan, California ISO; Dale Osborn, MISO; Tom Mielnik, MidAmerican Energy Co.
8:05-8:30	José Zayas, Office Director of Wind and Water Power Technologies, Office of Energy Efficiency and Renewable Energy, US Dept. of Energy	1:50-2:05	Break
8:30-8:55	Katherine Dykes, Senior Engineer, National Renewable Energy Laboratory (NREL), <i>invited</i>	2:05-2:45	Industry Panel – Raj Aggarwal, moderator; Barry Campbell, VP Energy Supply Management, MidAmerican Energy Co.; Kevin Standish, Chief Engineer, Wind Power, Siemens Corporation; Paul Judge, Product Manager, General Electric; Steve Nolet, TPI Composites, Inc.
8:55-9:15	Iowa EPSCoR Wind Platform – P. Barry Butler, Provost, University of Iowa	2:45-3:30	Wrap Up & Discussion – Raj Aggarwal
9:15-9:30	ISU Wind Energy Initiative – Raj Aggarwal, Director, Engineering Research Institute, ISU	3:30-4:00	Transport to Campus
9:30-10:10	Tall Turbine Towers – Sri Sritharan, Professor, Civil, Construction and Environmental Engineering, ISU; Jason Cotrell, Senior Engineer, National Wind Technology Center, NREL	4:00-5:30	Tour: Wind Energy Facilities <ul style="list-style-type: none"> ▪ Aeronautic and Atmospheric Boundary Layer Wind Tunnel ▪ Wind Energy Manufacturing Laboratory ▪ Wind Energy Systems Laboratory ▪ Structure Engineering Laboratory
10:10-10:25	Break		
10:25-11:05	Blade Manufacturing – Frank Peters, Associate Professor and Interim Chair, Industrial and Manufacturing Systems Engineering, ISU; Steve Nolet, Principal Engineer and Senior Director of Innovation & Technology, TPI Composites, Inc.		
11:05-11:45	Aerodynamics Performance & Structure Reliability – Hui Hu, Professor, Aerospace Engineering, ISU; Mark Petri, Iowa Energy Center; Anurag Gupta, Engineer, Vestas A/S, <i>invited</i>		
11:45-12:30	Lunch		



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WESEP students responding so far (thank you!):

- Mat Wymore
- Helena Khazdozian
- Aaron Rosenberg
- David Jahn
- Bin Cai
- This is a VERY important symposium and I/we strongly want to present a poster on your research.
- New students can present a poster on your intended research and/or on a class project.
- Please send name, title, short abstract to Julienne Krennrich at jmkrenn@iastate.edu no later than Friday 9/10 5:00 pm.

Others responding so far:

- Anne Kimber – EPRC-funded wind research
- Leonard Bond
- Vinay Dayal – NDE of blades
- Vinay Dayal – Richard Livings' work
- Simon Laflamme – skin sensor
- Hui Hu student 1
- Hui Hu student 2
- Gene Takle – Wind power resource planning and forecasting, inc. tall towers and data analysis

You can have your poster printed by sending a ppt or pdf to etg@iastate.edu.

But please send early (at least 3-4 workdays before you need it), for two reasons:

(1) give the people time to do their work.

(1) the printer is now under repair and there is some chance it will not be repaired by then, so you would need to have time to make other arrangements.

7. Upcoming Wind Symposium

Good Afternoon,

Thank you for agreeing to do a poster at the Wind Energy Industry Symposium from 5-7 PM on Monday, September 28. The poster reception will begin at 5PM in Scheman building. Please arrive between 4:30 PM and 4:45 PM to put up your poster.

I will be preparing a program for the event that will include the title and abstract of each poster. Therefore, please provide me with your title and abstract by tomorrow if possible, but no later than next Wednesday.

The poster boards are four feet high. If you have not yet made your poster, please use the ISU university template available here: <http://www.print.iastate.edu/templates.aspx> and use "Wind Energy Industry Symposium" as the 'Department Name'.

If you have not yet done so, please take a minute to register for the Symposium here: <http://www.engineering.iastate.edu/wei-symposium/>

I hope that you will be able to attend the next day's events as well.

Again, thank you for participating!

Best,

Julienne

Julienne M. Krennrich, PhD, MBA

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Interim Program Coordinator, Wind Energy Initiative

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7. Upcoming Wind Symposium

Legend										
Registered										
Personal Invitation										
invitation to "info@" address										
Not contacted										
Attending IWEA										
Farm Owners	Farm Developers	Turbine Systems	Towers	Nacelles	Blades	Other suppliers	Farm Operators	O&M Service	Energy Suppliers	Other
Mid American Energy	Acterra Group	Siemens	Trinity Structural Towers		TPI Composites	ABB	Mid American Energy	Gamesa	Mid American Energy	
Optimum Renewables	Gamesa	GE				Conductix-Wampfler	Exelon	LM Wind Service & Logistics	Central Iowa Power Coop	Lafarge North America
Exelon	PNE Wind	Acciona				Gamesa Electric	Goodwind Energy	Siemens O&M facility	ITC Midwest	Coreslab Structures
Goodwin Energy	Optimum Renewables	Clipper Windpower				IFOS Corp.	NextERA Energy Co., Win	Renew Energy Maintenance	Iowa Lakes Electric Coop	Alcoa
Pattern Energy Group	RPM Access	Broadstar Wind					Pattern Energy Group	UpWind Solutions		Barr Engineering
Crosswind Energy LLC	EDF RS	Areva Energy (off-shore only)					Iberdrola Renewables	E.ON Energy Services		Berger ABAM
		Gamesa								Boeing
		GoldWind USA								British Petroleum
		Heartland Energy Systems								CoreComp Advisors
		Suzlon								Design Insights, LLC
		Vestas								Honeywell
										IHI Corporation
										John Deere
										Rolls Royce
										Schlumberger
										Space X
										Toyota
										Unfolding Energy
										United Technologies (UTP)
										United Technologies (PW)
										Wright Patterson AFB

8. Upcoming annual review

- Please respond to Brandi Geisinger's email request to fill the annual IGERT survey.
- Dr. Pietrafesa will be here again in late October or November to perform a 2-day review.
- This is an NSF requirement, and I am grateful to you for taking your time to speak with Dr. Pietrafesa.

9. 2014 Review

<http://www.igert.windenergy.iastate.edu/about/program-evaluation/>

I will go through selected parts from the executive summary.
You will find it interesting to read (only 4.5 pages).

Then I will go to pp. 30-31.

Then, I will go to pg. 50.