

**IGERT**

University of Texas at Austin



**Sustainable Grid Integration  
of Distributed and Renewable  
Resources**

# IGERT\* External Advisory Committee Meeting

April 6, 2011

ECJ 10th floor

UT-Austin

\*Integrative Graduate Education and Research Traineeship Program

**Wednesday, April 6:**

- 8:15 Continental Breakfast
- 8:45-9:00 ***Welcome***, Greg Fenves, Dean of Engineering
- 9:00-9:15 ***Introduction of Advisory Committee, UT Investigators, and Program Overview***, Tom Edgar
- 9:15-9:45 ***Pecan Street Project***, Tom Edgar and Brewster McCracken
- 9:45-10:05 ***IGERT Trainee Presentations*** (4 min. each)  
Akshay Sriprasad  
Hunter Estes  
Matthew Charlton  
Dave Tuttle  
Gregory Dahlberg
- 10:05-10:30 ***IGERT Affiliates*** (3 min. each)  
Amir Toliyat  
Wesley Cole  
Charlie Upshaw  
Robert Fares  
Steve Bourne  
Josh Rhodes  
Kody Powell

**Wednesday, April 6 continued:**

- 10:30                    Break
- 10:45                    ***Cornell IGERT Program***, Jeff Tester
- 11:00-12:00            ***Discussion of interdisciplinary curriculum, recruitment, outreach, and website***  
                                 Educational Plan – Michael Webber (30 min)  
                                 Recruiting Efforts – Pam Cook (10 minutes)  
                                 Outreach – Pam Cook (10 minutes)  
                                 IGERT Website – Tom Edgar (10 minutes)
- 12:00-1:00            ***Lunch and Trainee Poster Session***
- 1:00-1:45              ***Meeting of Advisory Committee with IGERT Trainees***, Pam Cook and Darlene Yanez
- 1:45-2:00              Break
- 2:00-3:00              ***Write up program evaluation report***
- 3:00-3:30              ***Discuss evaluation with IGERT Executive Committee***
- 3:30                      ***Meeting adjourned***

# External Advisory Committee Members

Pat Chapman

Mike Hightower

John Hoffner

Bill Kramer

Brewster McCracken

Karl Rábago

Peter Sauer

Noel Schulz

Jeff Tester

Solarbridge

Sandia National Labs

CH2M Hill

NREL

Pecan Street Project

Austin Energy

University of Illinois U-C

Kansas State University

Cornell University

# UT – Austin IGERT Grant Overview

## *Sustainable Grid Integration of Renewable and Distributed Resources*

- 20 faculty from Architecture, Engineering, Business, Law, and LBJ School and 11 IGERT Fellows/year (\$3 million over 5 years)
- Student research projects to be carried out in areas of power distribution, energy storage, business utility/consumer models, systems modeling and integration, and building-integrated solar energy
- Coordination of interdisciplinary course sequence from the five schools
- Based around goals of the Pecan Street Project
- Internships in industry/government organizations and study abroad (TU München)
- Two other IGERT grants at UT (Indoor Air and Nanotechnology)

# Executive Committee

- **Ross Baldick** , PI  
Electrical and Computer Engineering
- **Thomas Edgar** , Co-PI/Administrator  
Chemical Engineering
- **Suzanne Barber**, Co-PI  
Electrical and Computer Engineering
- **Alexis Kwasinski**, Co-PI  
Electrical and Computer Engineering
- **Michael Webber**, Co-PI  
Mechanical Engineering

# Participating Faculty

- David Adelman
- David Allen
- John Butler
- Ulrich Dangel
- James Dyer
- Matt Fajkus
- Mack Grady
- Robert Hebner
- Kara Kockelman
- Arumugam Manthiram
- Jeremy Meyers
- Buddie Mullins
- Atila Novoselac
- Rod Ruoff
- Surya Santoso
- Alexandre da Silva

# Administration

- **Pam Cook**, Project Coordinator
- **Darlene Yanez**, Assessment Coordinator
- **Sarah De Berry-Caperton**, Administrative Associate



# IGERT Trainees

- **Akshay Sriprasad** – Chemical Engineering (T. Edgar)
- **Hunter Estes** – Electrical and Computer Engineering (A. Kwasinski/R. Hebner)
- **Matthew Charlton** – Materials Science and Engineering (R. Ruoff)
- **Dave Tuttle** – Electrical and Computer Engineering (R. Baldick)
- **Gregory Dahlberg** – Electrical and Computer Engineering (A. Kwasinski)

# Affiliates

- **Steve Bourne** – Civil, Architectural, and Environmental Engineering (A. Novoselac)
- **Wesley Cole** – Chemical Engineering (T. Edgar)
- **Robert Fares** – Mechanical Engineering (J. Meyers)
- **Kody Powell** – Chemical Engineering (T. Edgar)
- **Josh Rhodes** – Mechanical Engineering (M. Webber)
- **Amir Toliyat** – Electrical and Computer Engineering (A. Kwasinski)
- **Charles Upshaw** – Mechanical Engineering (M. Webber)

# Timeline

- PSP organizing meeting 1/28/09
- IGERT (UT) competition 2/17/09
- Pre-proposal submitted (9 pgs) 3/12/09
- IGERT reviews received 6/13/09
- Full proposal submitted (25 pgs) 9/15/09
- Proposal funded 3/2/10
- Final budget approved 5/14/10

# Pecan Street Project

## Mueller Demonstration Project

- DOE Smart Grid Funding \$10.4 million + \$15 million matching/ infrastructure (12/2009), also CAPCOG, Doris Duke Foundation
- Five-year project at old Mueller airport site – joint development between City of Austin and Catellus Development Group
- Project Team includes Austin Energy, UT, Environmental Defense Fund, City of Austin; advisory groups include ERCOT and central Texas utilities
- Data collection from pilot group of homes to see how various technologies affect electricity usage, bills, utility finances, environmental outcomes, and overall system performance
- Two-way Energy Internet; Plug and play open platform
- Industrial affiliates program initiated

# IGERT Curriculum

- Many courses already offered at UT
- New courses developed, course modification
- Student advising
- Detailed discussion at 11:00 (M. Webber)

# IGERT Enrichment

- Weekly meetings and presentations (since 10/10)
- Ethics seminar (2/2011)
- Study abroad (May-June, 2011) – TU Munich (Werner Lang – liaison)
- IGERT Project: Church energy audit (March-May, 2011)
- Outreach events

# New Student Recruitment

- IGERT website operational (on-line application)
- <http://research.engr.utexas.edu/igertsustainablegrids>
- 2010 class (existing UT students nominated by faculty)
- 2011 class (selection of students who have applied)
- 2012 class (outreach to targeted schools)