UMass IGERT Offshore Wind Energy Program

Engineering, Environment, and Policy

Wind IGERT Seminar

April 25, 2012

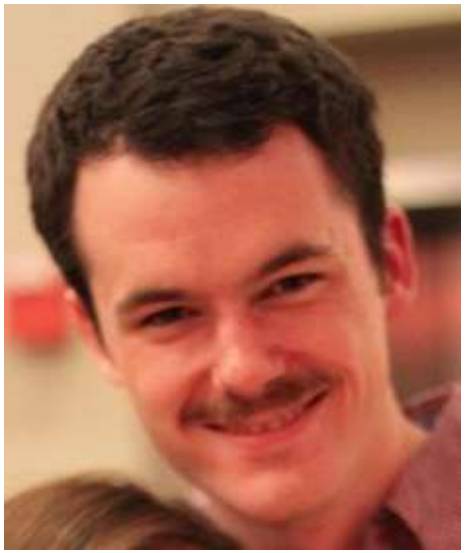
Erin Baker

Meeting Agenda

- Our accomplishments over the last year
  - Students!
  - Establishing a presence
  - Moving toward interdisciplinarity
  - Established a new class
- Challenges
  - Interdisciplinary research
- Goals for next year

Students

Walter Jaslanek
ECO



Gordon Stewart
MIE

Ryan Wallace
LARP

Andrew Allyn
ECO

Micah Brewer
MIE

Fall 2012 Fellows and Associates

- Kate McClellan (ECO)
- Greene, Takarra (CEE)
- LaCava, William (MIE)

Carson Pete, MIE

Wystan Carswell, CEE

Robert Darrow, Poli Sci /Econ

Jennifer Smetzler, ECO

Pamela Loring, ECO

Blake Massey, ECO

Establishing a presence

The Potential of Offshore Wind

Creating energy from wind is not new, yet growing demands for clean power now has us looking out to sea. Coastal seas and open oceans are breezy by nature, potentially making offshore wind farms an economical source of renewable energy. Nevertheless, offshore wind farms are not without controversy, whether because of changes in the aesthetics of the coastline, potential impacts on navigation, or disturbance to seabirds, fish, and marine mammals. Still, the number of proposed offshore wind farms is growing rapidly and it is becoming clear that the future of offshore wind relies on a holistic, interdisciplinary approach that includes technical assessments and planning, as well as assessments of environmental impacts, regulatory and policy issues, and human dimensions.

Our Goals

To create a community of researchers who understand the technological challenges, environmental implications, socioeconomic, and regulatory hurdles of offshore wind farms.

- Seminar Series
- 9 speakers
- Average attendance:
- 25

Interdisciplinarity

Retreat

Fellows Lunches

Seminar Series

Upcoming Research Topics in Wind Power Integration
Thursday, March 29, 2012 - 12:30pm
Speaker:
Bill Henson, ISO New England

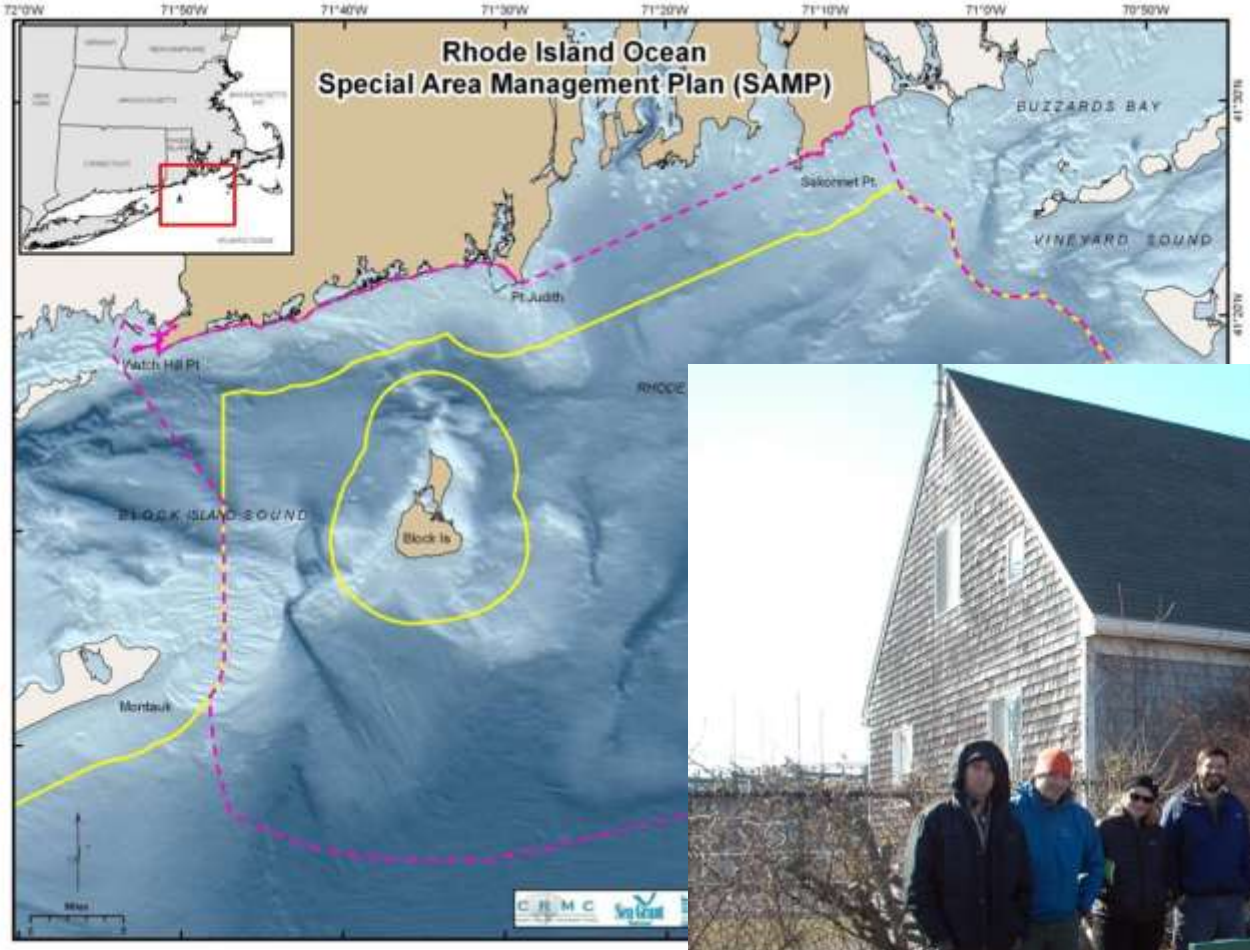
Abstract: Wind power technology is advancing rapidly: the materials, design methods, and fabrication technologies used to manufacture machines and components of wind plants as well as the whole plants themselves; the operational strategies used to optimize energy capture, maintenance strategies, and power system support capabilities; and the overall facilitating technologies involved in better siting and integration of wind power into the operation of the power system. **Read more »**

Commercial Wind Energy Development in the Northeast United States
Thursday, March 15, 2012 - 12:30pm

ldlife Service

Interdisciplinary Conferences

Studio Class



Other Accomplishments?

- Our accomplishments over the last year
  - Students!
  - Establishing a presence
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Meeting Agenda

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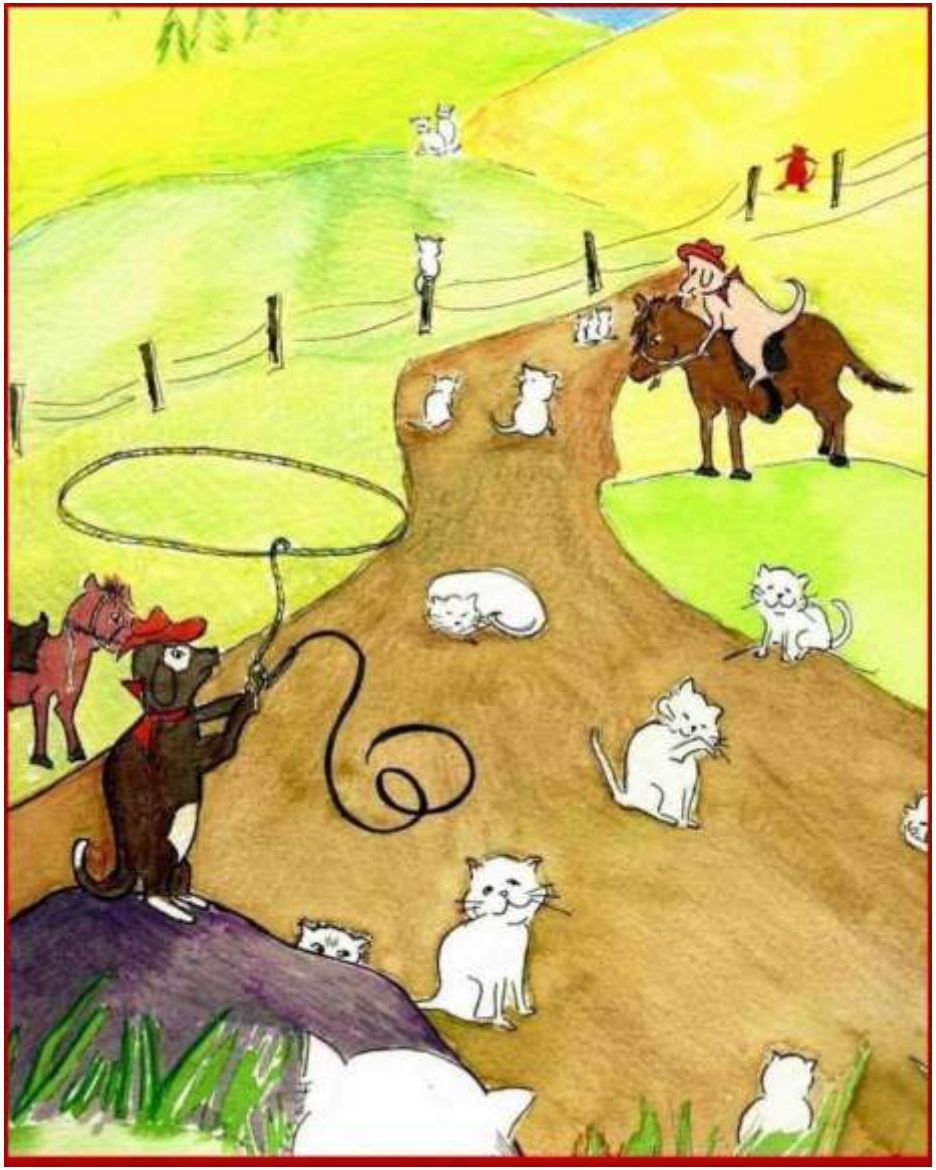
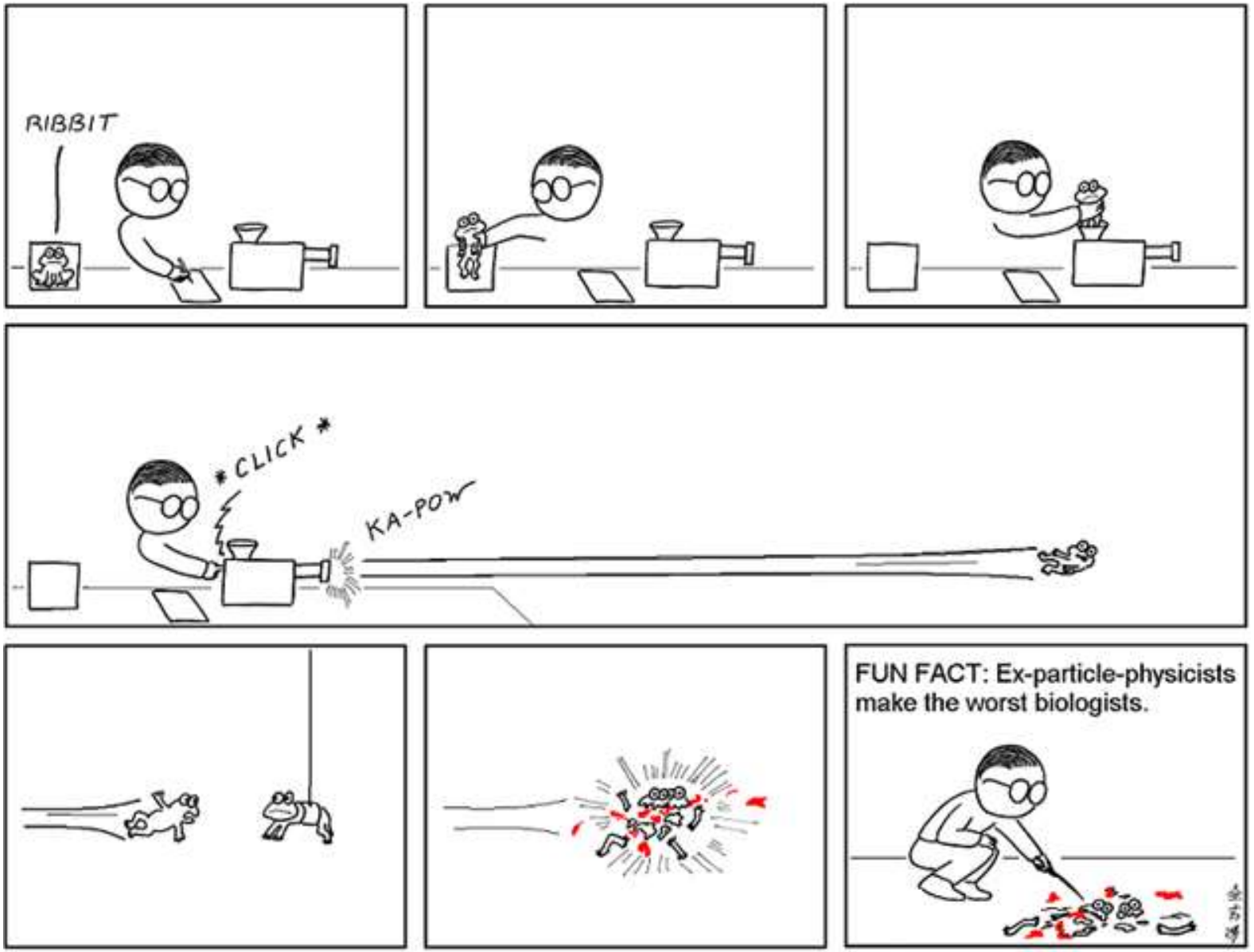
- **Challenges**
  - **Interdisciplinary research**
- Goals for next year

Challenge: Interdisciplinary Research



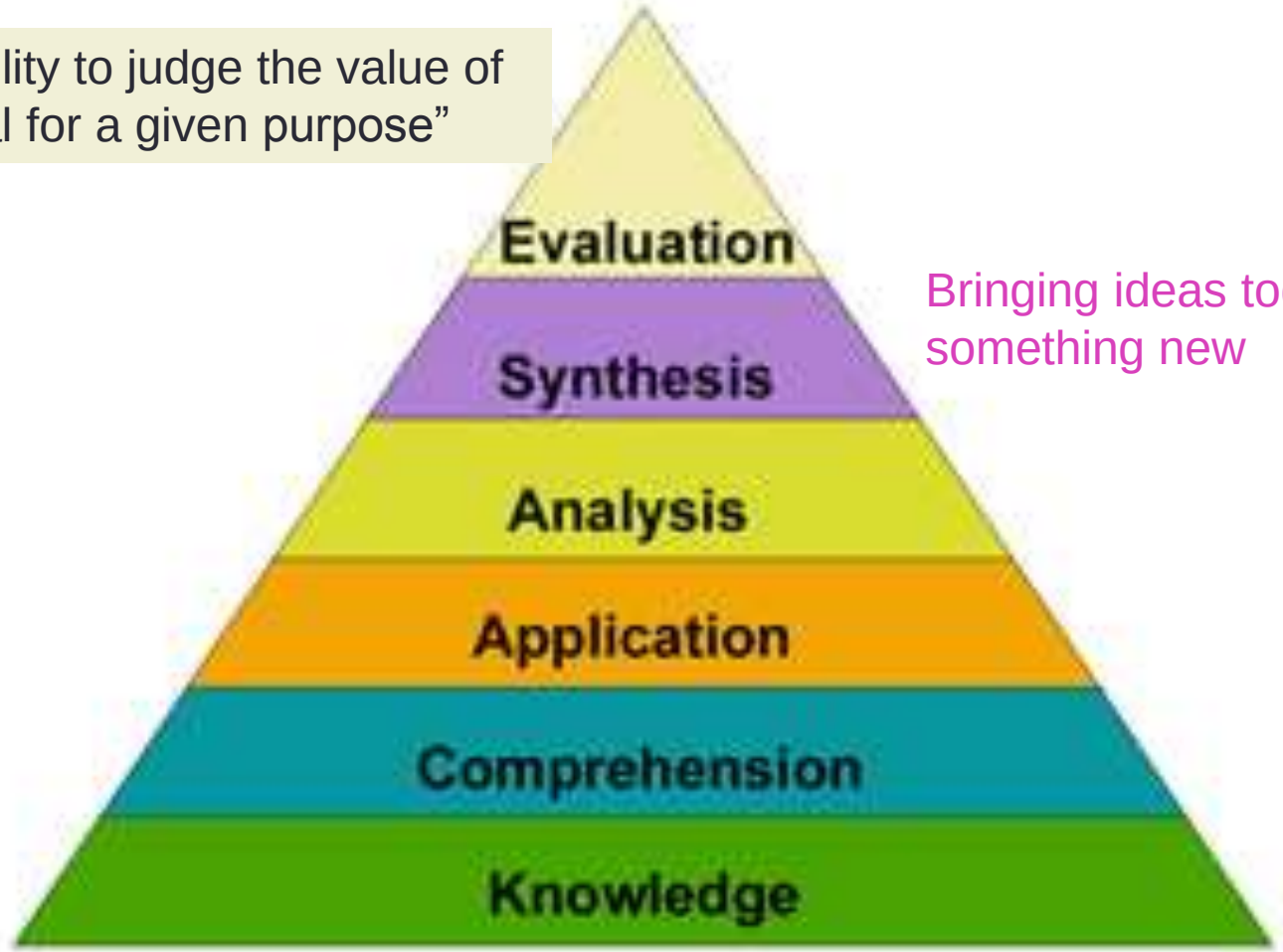
Interdisciplinary Research – what we don't want



Interdisciplinary Research: Bloom's Taxonomy

Interdisciplinary Research: Bloom's Taxonomy

"the ability to judge the value of material for a given purpose"



Bringing ideas together to create something new

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Goals

- Define a concrete goal to galvanize interdisciplinary research.

- Retreat
- Poster contest
- Continue and strengthen seminar series
- New courses
  - Ethics course
  - Environmental course
  - International field trip

- Others?

Concrete shared goal

- Example “chase a tornado down the street”
- Original goal was to work with Hull.
- Some suggestions:
  - Identify top *n* sites in New England (name a MW or a number of sites)
  - Evaluate three specific sites (Georges Bank, Georges (something), something nearer to shore)
  - Partner with someone to get some turbines in the water
  - Pick a case study site
    - Block Island
- Encourage interdisciplinary white papers?

Summary

- We have achieved a lot in our first 7.5 months!
- The major challenge in this project is getting people to work together across disciplines to create new knowledge
- We have some concrete goals for next year.