



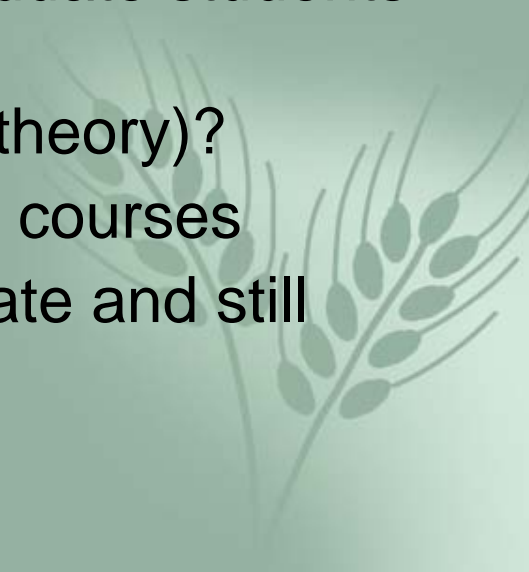
Educational Needs for Application of Climate Information

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Educational Needs (1)

- What is the status of current education for undergrad/grad/K-12 related to climate, agr. & nat. resources? Gaps?
 - Missing the holistic course, that puts together the basic pieces of the whole climate change issues for undergraduates
 - Lack of climate change courses for graduate students (need theory/technical for them)
 - Policy/applied courses vs (mechanism/theory)?
 - Cross-training or “good citizen” science courses
 - Can we stay out of the “politics” of climate and still discuss policy?
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Educational Needs (2)

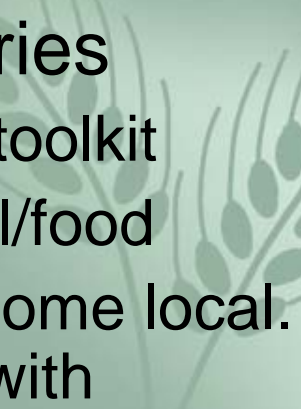
- How do we prepare students for climate-related issues with conseq to agr & nat resources?
 - Some have emphasis on phys & quant (FSU)
 - Resistance to changing courses (can faculty and admin adjust and implement?)
 - Students are finding jobs in areas closer to climate and policy (NGOs, companies)
 - More climate science PhDs than jobs?
 - Columbia Univ MS program for climate/society
 - Climate modelers need physics/math. Too much fluff.
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Educational Needs (3)

- Need to create collaborations for teaching courses across universities in era of distance education
 - Example: UF student taking a course from FSU?
 - Major barriers: Credit to faculty for teaching outside of his university. Or student getting credit for course taken outside. Resources for curriculum development.
 - UF's Interdisciplinary Major students: Departments dislike, don't count for "departmental" credit.
- Need to work with university presidents & provosts & chairs to share/give credit/facilitate.



Educational Needs (4)

- What new areas (jobs) should we be training students for? What courses needed?
 - AMS meteorologists need some climate background
 - Economics/industry
 - Risk/insurance/actuarial
 - How should climate change education programs balance issues related to local/regional impacts versus global impacts, especially differential effect on industrial vs developing countries
 - Yes, cover both. Students need math/biol toolkit
 - Climate signals are world-wide, prices of oil/food
 - Students want both, some international & some local. Engage with local service/learning course with city/district/industry.
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Educational Needs (5)

- Examples of successful educational programs that can be models to guide new programs
 - Service/learning course with city/district: water supplies and sustainability (USF/Clearwater)
 - Climate change course for undergrad (FSU)
 - Northern Illinois Univ -Design courses that train in climate and atmospheric sciences: problem solving, sustainability/ adaptation/ mitigation, climate engineering.
 - Columbia Univ MS program for climate/society

Educational Needs (6)


- Contrasts on education in global climate change
 - Tim Wheeler's vs. Mark Cane's
 - Science-heavy 4yr? Vs. Social sci focus 1yr
 - Professional options vs. Policy/Mgt
 - 1-year policy-course, good to expose engineers to policy side
 - Ruscher K-12 climate-literate student. Process of science is important. Earth sci not remedial.

Educational Needs (7)

- Regional approaches for cooperation to increase effectiveness of educational programs on climate, agr & nat resources
 - Share courses (send students short-term to other institution) or joint degrees (Reading & other)
 - Distance ed courses from anywhere in world
 - UF limits to 6 hr credit from elsewhere
 - Can we list same course for credit at UF?
 - Utah State-Ohio State (GIS), Iowa State (met course), Miss State (broadcast AMS)
 - Intensive 2-week course on specific topic (DSSAT course example)
 - Evening courses for K-12 (comm college, summer certifications)



Educational Needs (8)

- Regional approaches for cooperation to increase effectiveness of educational programs on **climate, agr & nat resources**
 - Alternative Programs (than DE or University)
 - Re-usable “learning” modules (pre-recorded lectures)
 - Intensive 2-week short courses
 - Evening courses
 - Workshops at professional/national meetings
 - “Use of Tools” courses (res/extension)
 - Games for K-12
 - (Make it profitable for teachers & students)
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Educational Needs (9)

- Who are the stakeholders for CIMR recommendations on climate education?
How to deliver?
 - Professional organizations
 - Curriculum comm at Depts/Deans/admin
 - K-12 teacher organizations
 - State DOE/legislative committees
 - NGO/Non-profit: “science into sound bits”
 - Student-training, scientist-OJT, meteorologists, government policy people
 - Survey stakeholders: What are the needs?

Educational Needs (10)

- What are 1-5 yr recommendations on climate education needs to stakeholders, e.g. univ admin, state & fed agencies, other
 - Re-format courses, RLO (pre-recorded lectures).
 - Identify gaps in University programs
 - Identify available DE courses, short-courses, and regular courses (other universities that give desired content)
 - Design/vision hybrid courses between US & FL universities (implement & expand in 5 yr) that give full academic credit. Student advisement