New Graduate Course Approval Cover Form  
Montana State University

This four-page form collects basic information about the proposed new course, provides information on the approval process, and includes all required approvals. Additional information (see INFO sheet) is also required as part of the New Course Packet.

Proposed New Course Information

Requested Rubric, Course Number, Core Designation (if needed): BIOE 516

Course Title: Advances in Ecological Modeling

Abbreviated Course Title (≤ 30 chars):

First Semester to be Offered: Spring 2015

Submitted by: Dr. Ben Poulter

Submitter's Contact Info: Phone, Email: 406 551 3969 benjamin.poulter@montana.edu

Instructor: Dr. Ben Poulter

Department: Ecology

College: Letters and Science

New Graduate Course Review Process

Instructor completes the New Course Packet.

Department Head's signature indicates that course has been approved by the process used within the Department.

The Chair of the College Curriculum Committee signs to indicate College academic approval (if required).

The College Dean signs to indicate that adequate resources are available to offer the course. Supporting information (Dean's Statement) is typically required.

The New Course Packet (as PDF) is submitted to the Graduate School for approval by the Dean.

Provost's Office reviews the new course request.

Approved new course sent to Registrar for inclusion in the Catalog and Schedule of Classes

Note: This diagram illustrates the typical flow path, but at any review step there can be a request for additional information or modifications. Careful review in early steps is the best way to speed the overall process. * Special topics courses (≤31) do not require review by the College Curriculum Committee, but cannot be offered more than two times without committee review.

APPROVALS

Submitter: Ben Poulter  
Date: August 20, 2014

Department Head:  
Date: 8/21/14

Chair, College Curriculum Comm.:  
Date: 9/7/14

Graduate School Dean:  
Date: 9/22/14

Assoc. Provost:  
Date: 
INFORMATION NEEDED FOR COMMON COURSE NUMBERING

The process for identifying a common course number for a new course is as follows:

1. Course learning outcomes are prepared for the new course.
2. The person submitting the new course request looks at the CCN website to see if a course with similar outcomes already exists in the MUS system.

   www.mus.edu/Qtools/CCN/ccn_default.asp

   • If a course exists with at least 80% of the same outcomes, the course is considered “equivalent” to the proposed new course, and the new course should use the existing rubric and course number.
   • If no “equivalent” course is found, the person submitting the new course request should identify a unique course number that has not been used by any other course in the MUS system.

3. The requested rubric and course number are submitted as part of the new course packet.
4. The Provost’s Office submits the learning outcomes and the requested rubric and course number to the MUS to have a course number assigned to the course. (This will typically be the requested course number, but it could be changed.)
5. The assigned common course number is reported back to the person submitting the new course request.

Requested Rubric, Course Number, Core Designation (if needed):

Course Title: BIOE 516
Abbrev. Course Title (≤ 30 char): Advances in Ecological Modeling
Credits: 3
Department Offering Course: Ecology
College: Letters and Science

Is this course “equivalent” to a course in the MUS System?: ☐ Yes ☑ No

Learning Outcomes for the Course:

Ecological modeling approaches are evolving rapidly and require a background in a range of skills. This course is designed to cover current topics in ecological modeling and will change in focus from year to year. Topics covered include modeling the role of disturbance in natural ecosystems, including fire, insects, wind, disease, advances in scaling from the individual plant to landscapes, advances in light modeling and representation of forest canopies in models, nutrient cycling, high-latitude processes, etc. Students will cover the progression of scientific literature for each topic. A computational component of the course will introduce students to programming in C, C++, or FORTRAN as a way to fully understand the topics covered. Evaluation will take place as exams, presentations, and class project.
INFORMATION REQUIRED BY THE REGISTRAR

The data needed to enter the new course into the MSU Catalog and Schedule of Classes is collected on this page. Once the new course has been approved, this page is automatically forwarded to the Registrar for data entry.

Assigned Rubric, Course Number, Core Designation (if needed):

Course Title (for Catalog):

Course Title (for Schedule of Classes, 30 characters, max.):

First Semester to be Offered:

Restricted Entry/Consent of Instructor Required:

Instructor’s GID (last 4 digits only):

Department Offering Course:

College:

Is the requested course number available? (x4155 to check):

Frequency of course offering:

Semester(s) offered (check all that apply):

Summer Options (check all that apply):

Credits by mode of instruction:

Primary Mode(s) of Delivery:

Time and Location – Call the Registrar’s Office at x4155 to find a time and location for the course.

Assigned Day(s):

Assigned Time(s):

Assigned Building:

Assigned Room:

Capacity (room capacity, or enrollment “cap”):

Co- and Pre-Requisites – Courses numbered 200 and above are normally expected to have prerequisites. When listing multiple prerequisites, please separate courses with “and” if both are required, or “or” if only one is required.

Prerequisite(s):

Co-Requisite(s):

Course Description – Provide a course description of 40 words or less for the MSU Catalog.

Advances in numerical modeling of disturbance, demography, and ecophysiology will be introduced with lectures and applied computational examples.
DEAN'S STATEMENT

The reviewing committees are being asked to take a closer look at the resources required for each proposed new course. In many cases new courses will replace existing courses and the new course request is effectively resource neutral, however that is not always the case. For example, a new elective course that would result in distributing an existing student population across a larger number of courses would represent a significant increase in expenditures for the new course, and no increase in total student credit hours. A funding mechanism for such a course would need to be identified. The Dean's Statement is the place to document how the costs of the proposed new course will be covered.

Part of faculty member's workload. No additional resources needed. MM 4/25/14
Ecological modeling is a rapidly advancing field with new conceptual approaches developed each year for simulating carbon, water, nutrient, and disturbance processes. As new understanding of ecological processes evolve from measurements, experiments, and satellite observations, ecological models must remain adaptive and flexible to remain state-of-art. Advances in ecological modeling are critical for reducing uncertainty in projecting future climate change and climate change impacts in terrestrial ecosystems. The topics of this course will change year-to-year and build from the foundations of ecological modeling covered in BIOE514. Topics include i) modeling of disturbances, such as fire, insects, disease, and how vegetation models simulate these events and secondary succession, ii) issues related to demography and scaling from the individual plant to landscapes, iii) representation of physiological processes such as water use, carbon allocation, and the implementation of isotopic approaches within model frameworks, iv) coupled nutrient limitations, i.e., P and N, and v) regional processes, such as high-latitude features, i.e., permafrost, peatlands, etc. Scientific literature will be used to cover the topics using recent papers as well as fundamental historical publications. Students will be evaluated by exams, presentations, and individual projects where programming in C, C++ or FORTRAN will be demonstrated.

Month 1:
- Forest Gap Models
  - JABOWA
  - FORCLIM
- Individual Based Models
  - SORTIE
- DGVM models
  - LPJ
- Demography Models
  - ED
- Scaling linkages

Month 2:
- Forest dynamics
- Forest structure
  - Cohorts
    - SGVM
    - DLEM

Month 3:
- Downscaling
  - ORCHIDEE-FM
  - Haverd’s progress
  - Siedl’s progress
  - Melton’s progress
- Aggregation
  - LM3V
  - PPA

Month 4:
- Computational issues
  - Coding exercises with PPA model
Assistant / Associate Deans’ Council
Thursday, September 11th, 2014
9:00 – 10:00 a.m.
415 Reid
Minutes

1. Tony Campeau: CiM-Curriculum Management
   - COURSES PROPOSALS
   - Editing next catalog: nextcatalog.montana.edu
   - nextcatalog.montana.edu/programadmin or courseadmin
   - Everything for proposing new programs and courses is online and sent electronically to all the appropriate folks.
   - Core is included in this.
   - Changing a course: you can see every page in the catalog and every course that refers to the new course or program.
   - Associate Provost can bypass work flow for little fixes and changes like spelling errors, etc.
   - Proposer can see where it is, who has it in their queue, where it is sitting, etc.
   - Can suggest changes and send back to originator as “proposed” changes.
   - Whoever would have filled out the paperwork with the current system is the one who will have access to fill these out electronically.

   ➢ PROGRAM PROPOSALS: Same idea as courses.
   - Word format for bulleted lists
   - * = wildcard for searches
   - If you are going to change program requirements, edit the program, it will also have workflow. Again, could be bypassed by Associate Provost for small issues.

   ➢ This is now the process for all future catalog changes

2. David: all departments should have a curriculum committee

3. David Singel-Ad Astra: go to calendars and you can click on the room and check out the specifics on the room. Sometimes there is a picture of the room.
   ➢ Go to schedule and you can pick what you need and search
   ➢ Overcrowding: fire code issues, instructors need to have these folks find a chair and not sit on the floor or stairs.
     - New policy: there will be a walk through prior to class starting to make sure all the chairs are where they belong and the rooms have the appropriate capacity.
     - Some instructors have a max cap over the room cap. Report of overfull classrooms on Ad Astra is a ten page report. Enrollment greater than room cap. When raising the cap, need to think about the room capacity.

   ➢ Will be sent out to the Deans

4. Carina Beck: Update on Career Week Activities—See attachment
Career week is coming, October 15th-17th. If you want to influence the schedule now is the time.

- 159 employers attending: SUB Ballrooms
  - Can fit more in on the 16th
- Employers come to MSU to recruit diversity in the workplace. If you have candidates that fit that profile, send them over.
- Veterans: Employers with gov’t contracts come to MSU

Business
- Career Fair, Oct 16th: Full day of events through 3pm
  - Would like to have 2500 students to attend.
  - Looking to hire May Grads and Interns
- Spring event will be in May instead of March due to remodel of SUB Ballrooms
- 17th of Oct is interview day.
- Oct 9 etiquette dinner
- Career week will be associated with this: two weeks starting on Sept 29th
- “Hire a Bobcat” mycatcareers.com is an outreach tool to see who is hiring and what they are hiring for. 4600 employers in the directory currently. Gives good sense of what is out there. Can pick by state.
- Internship with credits: up to instructor and employer. Employers are usually open to it. Should go to advisor.
- Glitch in system will be fixed soon: When you click on the name, it will have info about what they are hiring for.
- How do organizations get on the site?: hireabobcat.com
- MSU will beat the Career Fair for the first year ever.
- Recruiting video without sound for departmental monitors? Sounds like a great idea.

5. Nora Smith: Errata
   - Tourism in Montana is a 3.6 billion industry. Agriculture in Montana is a 4.2 billion industry, (includes all aspects of Agriculture).

6. Diane Donnelly: Almost 500 students have been through the advising center in first two weeks of class. 50% are University Studies students. The rest are from across the board. They are coming in for advising, drop adds, changing majors. A lot of engineering, pre law, etc.

7. We are being abandon: Melody is going to retire. ☹️ The 17th of November, her party will be in the Leigh Lounge. Please come and send Melody off in style!
NEW GRADUATE COURSE NARRATIVE
Updated: 12/31/2013

REQUIRED DOCUMENTATION FOR REVIEW OF NEW GRADUATE COURSES

1. Course Description:
   a. What are the special goals or purposes of the course that support a “graduate” level of the course?
   Ecological modeling is advancing very rapidly across all areas including vegetation dynamics, soil processes, climate feedbacks, representing of radiation attenuation, and in computer science approaches for handling model realism. A graduate level course is required to ensure that students have the opportunity to learn these advanced methodologies to make them competitive for post-doctoral or professorship positions when they graduate.

   Importantly, the course is offered via video connection to students at the University of Montana in Missoula with arrangements currently being made between Dr. Dave Roberts at MSU and Dr. Maury Valett at UM.
   b. Is this course intended to be a required part of a new degree curriculum option, major, or minor?
   Not presently.
   c. Provide a course syllabus containing all major topics to be covered.
   Please see attached.
   d. List required texts or other required references.
   Ecological Climatology, Gordan Bonan
   Primary literature

2. Level of Offering:
   a. Has the course been offered previously as a 591?
   No
   i. If so, when?
   ii. What was the enrollment?
   iii. What level of students took the course?
   iv. What were the evaluations?
   b. Does the course represent an upgraded version of an undergraduate level course?
   No
   i. If so, how has the course been changed to justify offering it at the graduate level? (Be specific)
   c. What are the prerequisites for this graduate course? (List exact MSU courses - e.g. ESCI XXX or equivalent)
   BIOE 514
   d. What performance requirements are placed on students, which make this a graduate course?
   i. Specifically state the written requirements or products of this course.
   Readings – 3-5 primary literature articles will be read each week
Presentations – students will coordinate presentations on the papers and lead discussions
Computer coding – spring 2015 will focus on coding the 'perfect plasticity assumption (PPA')
   ii. How will the student=s learning be assessed and graded?
Quizzes – every 2 weeks
Participation – engagement in discussions, leading a presentation of paper
Project – related to the PPA computer coding example

3. Relationship to other courses, curricula, and Departments:
   a. Does this course build on or interrelate with other courses in your curriculum or related curricula? If so, which one(s)?
   Yes, the course builds off of BIOE 514
   b. Does this course replace one or more courses that will not be offered? If so, which one(s)?
   No
   c. Will this course be co-convened with an undergraduate course? If so, what additional requirements will students enrolled in the graduate course be expected to fulfill?
   Yes, consent of instructor for upper level undergraduates who have taken BIOE 514
   d. Do the topics in the proposed course duplicate or reiterate those in other courses in this or any other department? If so, how do the coverages and education experiences differ, and how are these duplications or reiterations justified?
   No
   e. When the course is to be co-sponsored, taught by faculty from more than one department, or when content overlaps areas of common concern, the concurrence of all department heads and deans involved must be indicated. What liaison has been conducted with other departments? State reactions, both favorable and unfavorable.
   NA

4. Students Served:
   a. Does the proposed course serve:
      i. Majors only?
   No – the course is relevant to majors in Ecology, Land Resources, Plant Biology, Computer Science
      ii. Non-majors only? State area(s) or discipline(s) to be served.
   The course includes quantitative and critical thinking skills relevant to non majors
      iii. Both majors and non-majors? Indicate what specific efforts will be made to make the course materials relevant to all disciplines served. How are faculty and students in the other areas to be served being made aware of this course?
   Faculty are made aware by advertising the course on internal departmental listservs

5. What is the anticipated course enrollment?
   10-15 students at MSU and UM

6. Resources (including instructor):
   a. Are department financial resources sufficient for offering this course?
   Yes
   b. Does the instructor have the requisite academic training to offer this course?
i. Describe these qualifications briefly and include a vita (if the instructor is non-tenured).

See attached
   c. Are the library holdings adequate to support this course?

Yes

7. Course Evaluation:
   a. How will the students evaluate the course and instructor?
   b. How will the department evaluate the course and instructor?

   Mid-term and final evaluation forms will be provided

   Faculty will be invited to join the course and make evaluations

8. Other Supporting Material: Include any additional information you feel is needed to support this request.

Note: When using the December 2013 New Graduate Course form, it is not necessary to also submit a Graduate Course Change form, as required in the past.
Advances in Ecological Modeling (BIOE 516): Challenges in scaling vegetation dynamics (SP15)

Ecological modeling is a rapidly advancing field with new conceptual approaches developed each year for simulating carbon, water, nutrient, and disturbance processes. As new understanding of ecological processes evolve from measurements, experiments, and satellite observations, ecological models must remain adaptive and flexible to remain state-of-art. Advances in ecological modeling are critical for reducing uncertainty in projecting future climate change and climate change impacts in terrestrial ecosystems. The topics of this course will change year-to-year and build from the foundations of ecological modeling covered in BIOE514. Topics include i) modeling of disturbances, such as fire, insects, disease, and how vegetation models simulate these events and secondary succession, ii) issues related to demography and scaling from the individual plant to landscapes, iii) representation of physiological processes such as water use, carbon allocation, and the implementation of isotopic approaches within model frameworks, iv) coupled nutrient limitations, i.e., P and N, and v) regional processes, such as high-latitude features, i.e., permafrost, peatlands, etc. Scientific literature will be used to cover the topics using recent papers as well as fundamental historical publications. Students will be evaluated by exams, presentations, and individual projects where programming in C, C++ or FORTRAN will be demonstrated.

Month 1:
- Overview
  - Purves and Pacala
- Forest Gap Models
  - JABOWA
  - FORCLIM
- Individual Based Models
  - SORTIE
- DGVM models
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Month 2:
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- Forest structure
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- Downscaling
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- Aggregation
  - LM3V
  - PPA

Month 4:
- Computational issues
  - Coding exercises with PPA model
BENJAMIN POULTER, Ph.D.

Montana State University
Institute on Ecosystems &
Department of Ecology
Bozeman, MT 59717
United States of America

Email: benjamin.poulter@montana.edu
Lab Website: http://www.poulterlab.com
IoE Website: http://montanaioe.org/about/people/affiliated/poulter-ben

Research interests: Global change; Terrestrial carbon cycle; Disturbance ecology; Ecosystem modeling; Remote sensing;

CURRENT POSITION

Assistant Professor, Department of Ecology and Institute on Ecosystems, Montana State University, Bozeman, Montana, USA. January 2014-present.

Guest Scientist, Swiss Federal Research Institute WSL, Zurich, Switzerland. May 2011-present.

Guest Scientist, Peking University, Beijing. October 2011-present.

EDUCATION

Ph.D., Duke University, Durham, North Carolina USA, May 2005
Dissertation: Interactions between landscape disturbance & gradual environmental change: Plant community migration in response to fire & sea level rise.
Committee: NL Christensen (Advisor); JS Clark; PN Halpin; A Murray; SH Pearse

B.S., University of Idaho, Moscow, Idaho USA, December 1997
Major: Natural Resource Ecology and Conservation, Minor: Philosophy

FELLOWSHIPS

2011-2012 – Chinese National Science Foundation Young Foreign Scholars Fellowship
2009-2011 – EU Marie Curie FP7 Incoming International Fellowship
2006-2008 – EU Marie Curie FP6 Incoming International Fellowship (declined)
2002-2005 – NASA Earth System Science Graduate Fellowship
2002-2003 – FK Weyerhaeuser Forest History Society Fellowship

RESEARCH EXPERIENCE


Adjunct Associate Research Professor, Lamont Doherty Earth Observatory, Columbia University, New York. May 2011-2013.

Marie Curie Fellow, Swiss Federal Research Institute WSL, Zurich, Switzerland, Drs. NL Zimmermann and H Lischke. July 2009-April 2011

Marie Curie Fellow, Potsdam Institute for Climate Impact Research (PIK), Earth System Science, Potsdam, Germany.
- ‘PRIMAP’ Project, Drs. W Hare and M Meinshausen. Spring 2009.

Post-Doctoral Research Scientist, Nicholas School of the Environment and Earth Sciences, Duke University, Durham, NC. Summer 2005 to Summer 2006

Graduate Research Student, Nicholas School of the Environment and Earth Sciences, Duke University, Durham, NC. Spring 2002 to 2005

Research Assistant, The Nature Conservancy, Durham, NC. Summer 2002

Research Technician, Department of Plant Biology, Carnegie Institution of
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Washington, Stanford, CA. Dr. C Field. October 1999-July 2000

PUBLICATIONS  Peer Reviewed


(63) Zweischier, J, AM Michalak, C Schwalm, MD Mahecha, DN Huntzinger, M Reichstein, G Berthier, P Ciais, RB Cook, M Huang, A Ito, H Lei, C Li, J Mao, B Poulter, X Shu, B Tao, H Tian, W Wang, Y Wei, J Yang and N Zeng. 2014. Impact of large-scale climate extremes on biospheric carbon fluxes: An intercomparison based on MsTMIP data. Global Biogeochemical Cycles.


(55) Balzarolo, M, S Bousetta, G Bousetta, A Beijaars, F Maignan, J-C Calvet, S Lafont, A Babu, B Poulter, F Chevallier, C Szczypta, and D Papale. 2014. Evaluating the potential of large scale


(45) Yue, C, S Luyssaert, P Cadule, JW Harden, J Randerson, V Bellassen, T Wang, S Piao, B Poulter, N Viroy. 2013. Simulating boreal forest carbon dynamics after stand replacing fire


(33) Babst, F, M Carrer, B Poulter, C Urbinati, B Neuwirth, and D Frank. 2012. 500 years of regional forest growth variability and links to climatic extreme events in Europe. Environmental Research Letters, 7 045705.


**Book Chapters and Sections**


**Technical Reports, Conference Proceedings, and Letters**


Benjamin Poulter, Curriculum Vitae


In Review


Benjamin Poulter, Curriculum Vitae


GRANTS

(15) NASA ROSES (Diagnosing Climatic Variability in CO2 Exchange) CO-I with C Schwalm, D Huntzinger (Northern Arizona University), $10k, 2012-2015
(14) MAOILICA Swiss National Science Foundation, Collaborator with ETH University, ($50Kchf subcontract) 2012-2015
(13) National Commission for Energy Policy, Economic Impacts of Sea Level Rise and Hurricanes in Coastal North Carolina, $50,000 (Co-PI with Drs. John Whitehead (Appalachian State University), Chris Dumas (University of North Carolina – Wilmington), and Paul Bl (Eastern Carolina University)), 2006-2007
(12) Environmental Defense, Habitat modeling of river herring spawning areas, $19,388 (Co-PI with Dr. PN Halpin), 2006-2007
(10) NC Division of Coastal Management, Dendrochronology of Atlantic white-cedar (Co-PI with Dr. N. Pederson, $18,000), 2005-2006
(9) Environmental Defense, Conservation GIS (Co-PI with Dr. PN Halpin), $25,420, 2005-2006
(8) Environmental Defense, Sea level rise inundation mapping, $3,750, 2005
(7) Environmental Defense, Building GIS data library, $2,000, 2004
(6) North Carolina Seagrant minigrant (Co-I with Dr. N.L. Christensen), $5,000, 2004-2005
(5) Center For Environmental Solutions minigrant, $5,000, 2002-2003
(4) National Center for Earth Surface Dynamics, NSF Student Travel Grant, $600, 2004
(3) NASA Earth System Science Conference Travel Support, $300, 2004
(2) Center For Canadian Studies Conference Travel Support, $300, 2004
(1) Nicholas School of the Environment Conference Travel Support, $1,000, 2003-2004

AWARDS

Honorable Mention (Talk), Estuarine Research Federation Biennial Conference, 2005
Outstanding PhD Student (voted by peers), Nicholas School of the Environment, 2005
Student Award, International Association of Geomorphologists, 2004
Outstanding PhD Student (voted by peers), Nicholas School of the Environment, 2003
Golden Key Honor Society (member), 1997
George Savage Essay Winner The Virtual Forest, University of Idaho, 1997
Martin Institute for Peace Essay Competition Winner, University of Idaho, 1996

TEACHING EXPERIENCE

Lecturer
Montana State University
- Ecological Modeling, Fall 2014
  - 14 graduate students
- Advances in Ecological Modeling, Spring 2015
Peking University, Beijing, China, Earth System Modeling Winter School, March 2013
- 40 students (undergraduate and graduate)
- Lecture on gap dynamics and vegetation models
Brazilian Symposium for Remote Sensing, Foz do Iguacu, Brazil, April 2013
- 40 students (undergraduate and graduate)
- Lecture on tropical vegetation modeling
Peking University, Beijing, China, Earth System Modeling Winter School, Feb. 2012
- 40 students (undergraduate and graduate)
- Lecture on modeling photosynthesis, earth system model data management
Johannes Gutenberg University, Mainz, Germany, Remote Sensing, January 2011
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- 10 graduate students
- lecture on spatial analysis, remote sensing classification methods


**Visiting Lecturer**

University of North Carolina, Chapel Hill *Ecological Analysis and Applications*. Fall 2005

**Invited Guest Lecturer**

Survey in Biology, Montana State University, Fall 2015
Biogeochemistry and Global Change, Montana State University, Spring 2014
Climate change ecology, Montana State University, Spring 2014
Bioclimatology, Montana State University, Spring 2014
Ecosystem Modeling, ETH-Zurich, Spring 2010
Introduction to Geography, University of North Carolina, Chapel Hill. Spring 2004
Integrating Environmental Science and Management, Duke University, Fall 2005

**Teaching Assistant**

*Fundamentals of Geospatial Analysis*, Duke University, Fall 2004
*Geospatial Field Data Collection*, Duke University, Spring 2004 and 2005
*Principles of Ecosystem Management*, Duke University, Summer 2002 and 2003

**Short-courses (lead)**

ArcView, Environmental Defense, Raleigh, NC. Spring 2005
Global Positioning Systems, Duke University. Spring 2004

**Committee Member/Supervisor**

Post-Doctoral Supervisor, Katie Ireland, MSU, 2014-present
Post-Doctoral Supervisor, Zhen Zhang, MSU, 2014-present
Post-Doctoral Supervisor, Daniel McInerney, LSCE, 2013-2014
Post-Doctoral Supervisor, Yi Yin, LSCE, 2013-2013
Post-Doctoral Supervisor, Elke Hodson, WSL, 2009-2011
PhD Supervisor for Leo Calle, MSU, 2014-present
PhD Supervisor for Kristen Emmett, MSU, 2014-present
PhD Supervisor for Nicolas Najdovski, MSU, 2014-present
PhD Committee Member for Angela Tang, MSU, 2014-present
PhD Committee Member for Arsene, Grenoble, France, 2013-present
PhD Committee Member for Miriam Pfeiffer, EPFL Lausanne, 2012-2013
PhD Committee Member for Marc Scherstjanoi, EPFL, Switzerland, 2009-2013
Masters Committee Member for Nicolas Nadjovski, UCL Belgium, 2012-2013
Masters Committee Member for Daniel Rosa, Humboldt State University, 2006-2008
Undergraduate Supervisor, Jared Hoy, MSU, 2014-present
Undergraduate Supervisor, JD Figura, MSU, 2014
Undergraduate Supervisor, Frances Ambrose, LSCE, 2014-present
Undergraduate Supervisor, Eliott Ricart, LSCE, 2013
Greencycles Research Training Network, PIK, Summer 2006 to 2009
Howard Hughes Fellowship Program, Duke University, Summer 2004
Nicholas School of the Environment and Earth Sciences, Duke University. 2003-2005

**EDITOR**

PLOS ONE (Academic Editor)

**REVIEWER**

*Journals (Ad-Hoc):* Oecologia; Regional Environmental Change; Environmental Science and Technology; Plant and Soil; Global Ecology and Biogeography; Agricultural and Forest Meteorology; Photogrammetric Engineering and Remote Sensing; Ecosystems; International Journal of Geographical Information Sciences; Environmental Research Letters; Journal of Geophysical Research; Ecological Modelling; Journal of Hydrology; Forest Ecology and Management; Biogeosciences Discussions; Journal of Environmental Management; Estuarine and Coastal Shelf Science; International Journal of Remote Sensing; Canadian Journal of Forest Research; New Phytologist; Philosophical Transactions of the Royal Society; Nature
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Knowledge; Atmospheric Environment; Trends in Ecology and Evolution; Global Change Biology; Earth Interactions; Oceans and Coastal Management; Climatic Change; Current Opinions in Environmental Sustainability; AGU Monographs; Polar Biology; Biogeochemistry; Global and Planetary Change; PLOS ONE; Remote Sensing; Global Biogeochemical Cycles; Biogeosciences; Nature Geoscience; Nature; Nature Climate Change;

Proposals: U.K. National Environmental Research Council (NERC); U.S. National Science Foundation (NSF); Netherlands Space Office; Maryland Sea Grant Program; French National Research Agency (ARN); National Oceanic and Atmospheric Administration (NOAA);

PROFESSIONAL AFFILIATIONS

Ecological Society of America; American Geophysical Union; European Geophysical Union;

INVITED PRESENTATIONS


(18) Poulter, B. Can we close the global carbon budget with ecosystem models: Attribution and challenges. Peking University, Beijing, China. November 2011.


(16) Poulter, B. Deforestation and land use change effects on regional to continental scale carbon cycling. Princeton University, Land Cover Change Workshop, New Jersey, May 2011.


Benjamin Poulter, Curriculum Vitae


(12) Poulter, B. Quantifying the risk of Amazon forest dieback from climate, deforestation, and fire. Université Catholique, Louvain La Neuve, October 2010.

(11) Poulter, B. Modeling the sensitivity of seasonal GPP to water and light limitations in the Amazon Basin. Université Catholique, Louvain La Neuve, October 2010.

(10) Poulter, B, M Schaub, S Sitch, NE Zimmermann. Vulnerability of mountain biogeography and biogeochemistry to changes in climate, CO₂, and tropospheric O₃ in the Yunnan Province, southwest China. IUFRO Congress, Seoul, South Korea, August 2010.

(9) Poulter, B, Evaluating the risk of Amazon dieback to climate and land-use change. LSCE-IPSL, Paris, France, June, 2010.


(7) Poulter, B. Training DGVMs with tree rings to evaluate past and future CO₂ fertilization. DendroEcology Research Unit, Swiss Federal Research Institute WSL, February 2010.

(6) Poulter, B. Modelling the sensitivity of seasonal gross primary productivity to water and light limitations along a tropical forest moisture gradient. University of Vienna, Institut fur Geographie und Regionalforschung, April 2008.


ACTIVITIES

Forest Carbon Working Group, WHRC (Birdsey/Pan)
Carbon Calculator Advisory Group, Conservation Biology Institute, 2013-2014
Forest Age and Carbon Models, Convener for COST – GEOCARBON TERRABITES Workshop 2013
Intergovernmental Panel on Climate Change Fifth Assessment Report, Contributing Author, Working Group I, Chapter 6, 2012-present
NACP 4th All Investigators Meeting, Co-Chair Breakout Session on Forest Age, 2013
European Space Agency Climate Modeling User Group (CMUG) Representative (2012)
Global Carbon Project, RECCAP-TRENDY model data contributor, 2010-present
VEGECLIM, Belgium Science Program, Science Advisor 2010-present
MsTMIP model data contributor, 2011-present
North American Carbon Program (NACP) Regional and Site Synthesis, 2009-present
LBA-MIP, Amazon Basin model data comparison contributor, 2008-2009
GlobCarbon Project, European Space Agency, Frescati, Italy, December, 2008
JUTF Summer School on Uncertainty in Ecosystem Models. Aberdeen University, Scotland, July 2008
NASA Large Scale Biosphere Atmosphere Experiment Model Intercomparison Project, University of Maryland, USA. May 2008
Scientific session co-convener at European Geophysical Union, Annual Meeting (A Friend, R Betts, T Lenton), March 2008
NASA Large Scale Biosphere Atmosphere Experiment Model Intercomparison Project, Salvador, Brazil, September 2007
AIMES/QUEST Third Young Scholars Network Workshop (NSF/NCAR/NERC Modelling Land-Use Decision Making), Bristol, United Kingdom, April 2007
Marie Curie iLEAPS Workshop (Integrated Measurements over land ecosystem atmosphere boundaries), Helsinki, Finland, April 2007
Dissertation Initiative for the Advancement of Climate Change Research (DISCCRS): Monterey, California, April 2006
The Nature Conservancy Climate Change Initiative Workshop on Sea Level Rise Impacts on the Albemarle Peninsula, Manteo, North Carolina, May 2006
Climate Change Impacts in North Carolina. Organized by the Dean of the Nicholas School of the Environment and Earth Sciences, Duke University, NC, March 2004
Ecological Effects of Sea Level Rise. NOAA, Coastal Ocean Program, Beaufort, NC, 2004
Coastline Change, Coastal Development, and Coastal Ecosystems. Center For Global Change, Duke University, NC, Fall 2004

**SPECIFIC SKILLS**

**Programming skills**

**Field Experience**
Experienced with field sampling design and data collection, field and greenhouse experimental design and data collection, and with using technical field equipment (e.g. Licor 6400 gas exchange analyzer, Campbell Scientific equipment, GPS).

**Languages**
English, Basic French, Basic German