**Field Research Methods**

July 2 – 12, 2017

**Course Syllabus**

**Course Description:**

This course will help try to meet the needs in Guyana for research and analysis on priority themes for environmental management and conservation determined through government and civil society directives. We also hope that the course experience provides a foundation for future collaboration among all researchers involved. The course should be appropriate for graduate students, fourth year undergraduate students, researchers, and junior faculty interested in honing their research skills and accessing international journals.

**Course Instructors:**

Dr. Francis E. (Jack). Putz (fep@ufl.edu)

*Distinguished Professor, Department of Biology, University of Florida*

Graduate Teaching Assistant

**Student Learning Outcomes:**

This course focuses on strengthening skills for the design and evaluation of field studies and the collection, analysis, and communication of scientific data and information. It has a strong emphasis on training participants in hypothesis formulation, use of correct data collection methods and analytical techniques, and scientific writing for natural resource management and conservation. At the very least, all participants will come away with an improved sense of what constitutes good science and an improved ability to design field research projects that closely match research objectives.

**Course Format:**

Using a combination of readings, lectures, discussions, and, most important, field exercises, course participants will hone their research skills from hypothesis formulation to manuscript preparation. Individual and small group field research projects will be designed and carried out on topics of relevance to forest ecology, conservation, and management with a strong underpinning on economics. The collected data will be analyzed statistically and presented both orally and in a written form suitable for submission to an international, peer-reviewed journal (Forest Ecology and Management). An inter-disciplinary applied perspective will be employed throughout the course so that participants become more comfortable working in complex socio-ecological systems. The general philosophy is that people improve their abilities to design and implement scientific studies by doing science. Their ability to communicate the results of their science is most effectively enhanced through repeated written and oral presentations with ample feedback.

A typical day during the course will include field-work in the morning, during which each participant individually or in small groups collects the data need to test a hypothesis formulated the night before. The early afternoon of that day will be dedicated to guided data graphing and analysis with time allocated for reading. Then come the oral presentations (3 minutes each), followed by time allocated for drafting a short (2-3 page) manuscript prepared as if for submission to Forest Ecology and Management. Each of these manuscripts will be edited by course staff and returned to the author(s) for resubmission. After dinner there will be a lecture/discussion that provides preparation for the next day’s field problem including consideration of issues related to hypothesis formulation and experimental design.

**Recommended Readings:**

Browse through some of the previous research conducted at the Pibiri Forest Reserve under the Tropenbos-Guyana programme: <http://www.tropenbos.org/publications?output_country=Guyana>

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| **Date** | **Activities** |
| 02/07/2017 (Day 1) | * Morning (leave from from UG at 0800 h): Travel to Mabura sawmill, quick visit, continue on to field site at Pibiri.
* Late Morning: Settle in, fire up computers, introduction to the course, and discussion of some potential research projects.
* Afternoon: Visit potential field sites.
* Evening: Start on experimental pitfalls and statistical conundrums.
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| 03/07/2017 (Day 2) | * Morning: In field making observations, generating hypotheses, discussing potential projects, collecting preliminary data.
* Afternoon: Write up the “best” hypotheses following a journal’s template [Forest Ecology and Management]; include a graph of expected results.
* Evening: Continued grappling with statistics, start with R.
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| 04/07/2017 (Day 3) | * Morning: Collect more preliminary data, reconsider and reformulate hypotheses and research methods, start over if needed.
* Afternoon: Deal with preliminary data, draft methods sections, start generating graphs, collect relevant literature.
* Evening: More fun with R (but with your data).
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| 05/07/2017 (Day 4) | * Morning: Field work on refined projects.
* Afternoon: More analysis and writing.
* Evening: Oral presentations of results to date.
* Sample size determination and basic statistics.
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| 06/07/2017 (Day 5) | * Morning: More field work/writing
* Afternoon: More analysis, second drafts of manuscripts.
* Evening: Updates on studies, more R.
* Analysis of sustainability using matrix projection methods.
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| 07/07/2017 (Day 6) | * Morning: Finish up field work (at least preliminarily).
* Afternoon: Revise manuscripts, update results, generate “final” figures.
* Evening: Economics of forest carbon credits/REDD and payment for ecosystem services.
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| 08/07/2017 (Day 7) | * Morning: Revise manuscripts and go back to the field to fill in gaps (as needed).
* Afternoon: Presentations of projects.
* Sustainability from multiple perspectives.
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| 09/07/2017 (Day 8) | Morning: complete any final field data queriesLater Afternoon: Return to Georgetown |
| 10/07/2017 (Day 9) | * Participants will prepare for symposium by reviewing their work and notes.
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| 11/07/2017 (Day 10) | * Morning: Symposium to which faculty, students, and other invited government officials, researchers and law makers will be invited.
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