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**GEO6119 Proposal Writing in Geography**

**PROPOSAL WRITING IN GEOGRAPHY, GEO 6119**

**UNIVERSITY OF FLORIDA, DEPARTMENT OF GEOGRAPHY SPRING 2016**

Please note that this syllabus is being constructed, WILL change before the class begins, and MAY change as the semester progresses.

Most Recent Revision: 2 January 2020

Instructor: Dr. Michael W. Binford

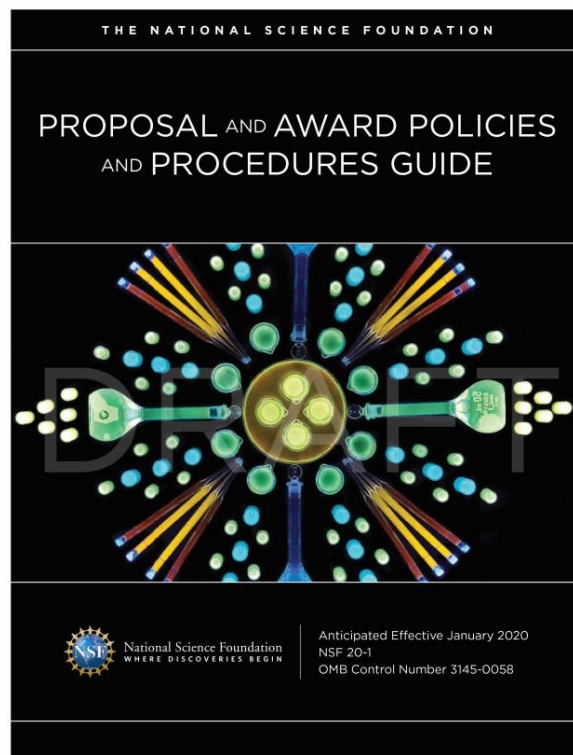
Office Location: 3131 Turlington Hall

Office Hours: Tuesdays 2:00 – 3:00 PM and Wednesdays 10:00 – 11:00 AM

Also, feel free to e-mail me or stop by my office

Phone: 392-0494 but I don't use the phone very well

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## **COURSE DESCRIPTION**

Research design, research ethics, proposal writing and proposal evaluation for geographic studies

## **PREREQUISITES**

This course is intended for advanced (second year or beyond) graduate students in Geography who have general ideas of the thesis or dissertation research. This course will develop those ideas using literature, help students frame questions and hypotheses incorporating theory, discuss data collection and methods, etc. Students outside the discipline can enroll, but the proposed research should be of a nature where geography graduate students and the instructor can evaluate proposal content (e.g. environmental or earth sciences, forestry, etc.). You should discuss any questions and concerns with the instructor.

## **COURSE OBJECTIVES**

The course will provide a forum for discussion, shared experiences, and intellectual resources for graduate students to be able to write effective, successful research proposals.

The purposes of this course are: 1) to examine the early stages of research (research question definition, library research, planning, research design, variable selection, proposal writing); 2) to learn to conduct ethical practice of research; 3) to write a research proposal in National Science Foundation (NSF) format; and 4) to learn the process of constructive criticism in reviewing other's proposals (your proposal will be evaluated by three peers and the instructor).

## **POLICY ON ATTENDANCE AND CLASS DEMEANOR**

This class is about your own graduate research and missing class is not a good idea. Participation is 40% of the grade. The panel review is an additional 20% and your presence is necessary. Early semester absences can be excused but they should be minimal and reasonable. Given that this class has a proposal deadline and a panel review, incompletes are not viable options. If you miss more than one class or cannot make one of the critical meetings at the end of the semester, your grade will be affected. If you have a documented absence (illness, medical or family emergency) towards the end of the semester, I will consider giving an incomplete and work with students to create a contract where alternative projects are assigned. Similarly, tardiness and creating distractions (cell phones, texting, laptop usage when not part of the class purpose) are not advisable.

## **ASSIGNED READINGS**

**The Firestein book ("Ignorance") is required. All of the other books are "recommended" although I urge you to have a copy of the Friedland and Folt book. They are all inexpensive. It is very important that you have access to several of them during the class. Which ones will depend on your own area of research. It will be your responsibility to find them in whatever form or from whatever vendor that you can.**

Firestein, S. 2012. Ignorance: How It Drives Science. Oxford University Press, Oxford, UK. 195 pp.

Friedland, A.J. and C.L. Folt. 2009. Writing Successful Science Proposals. 2<sup>nd</sup>Ed. Yale University Press. 201 pp.

Blaxter, L., Hughes, C., and Tight, M., 2006, How to Research, Open University Press, Buckingham, UK, 287 pp. (3rd edition) \$25

[Hillel, D., 1987, On the tortuous path of research: Soil Science, v. 143\(4\), pp. 304-5.](#)

Kitchin, R. and Tate, N.J., 2000, Conducting Research in Human Geography: Theory, Methodology and Practice, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4). \$35

[National Academies of Science, Engineering and Medicine, 2009, On Being a Scientist: a Guide to Responsible Conduct in Research. Third Edition, Committee on Science, Engineering, and Public Policy \(COSEPUP\), free download available for personal use](#)

Valiela, I., 2009, Doing Science: Design, Analysis and Communication of Scientific Research, Second edition, Oxford University Press, Oxford, UK, 352 pp. \$40/\$10

Other articles and books, based on topic(s) of the week 2 **ADDITIONAL HELPFUL READINGS** (Available from instructor or library, there are many more books and articles; our class website will have pdfs of several articles concerning methods and more)

Clifford, N. and G. Valentine, eds., 2003, Key Methods in Geography, Sage Publications Ltd., 592 pp.

Eyles, John and Smith, David M., 1988, Qualitative Methods in Human Geography, Polity Press, Oxford, UK, 272 pp.

Flowerdew, R., and Martin, D., 1997, eds., Methods in Human Geography: A Guide for Students Doing a Research Project, Longman, Harlow, Essex, England, 296 pp.

Gatrell, J.D., G.D. Bierly, R.R. Jensen, 2005, Research Design and Proposal Writing in Spatial Science, Springer, 216 pp.

Holloway, S.L., S. P. Rice, and G. Valentine, 2003, Key Concepts in Geography, SAGE Publications, Incorporated, 360 pages.

Lindsay, James M., 1997, Techniques in Human Geography, Routledge, London, 209 pp.

Rogers, A., Viles, H., and Goudie, A., 1992, *The Student's Companion to Geography*, Blackwell, Oxford, UK, 386 pp.

Schumm, S.A., 1992, *To Interpret the Earth: Ten Ways to Be Wrong*, Cambridge University Press, Cambridge, UK, 131 pp.

**GRADING SCALE:**A = 90 or above, 4.0; A- = 87-89.0, 3.67; B+ = 84-86.9, 3.33; B = 80-83.9, 3.0; B- = 77-79.9, 2.67; C+ = 74-76.9, 2.33; C = 70-73.9, 2.0; C- = 67-69.9, 1.67; D+ = 64-66.9, 1.33; D = 60-63.9, 1.0; D- = 57-59.9, 0.67; E = 56.9 or below, 0.0; **Note: A grade of C- is not a qualifying grade for major, minor, Gen Ed, Gordon Rule or College Basic Distribution credit.**

## **ASSIGNMENTS AND GRADING:**

### **FIRST PROPOSAL REVIEW (5%)**

Unless you have reviewed NSF-style proposals before, you will have little idea how to do this. So, this first-week exercise will be to read two NSF Dissertation Improvement Grant proposals (one successful, one not), read NSF guidelines on how to review proposals, and write a review of each one in NSF format. Indicate which of the proposals was successful. Due Date: Class Meeting Week 2.

### **WEEKLY READINGS AND LOG (15%):**

PART 1: From twenty to over one hundred pages of possible readings are assigned each week, and you should also be doing reading related to your research. Assigned readings have practical advice, and some of you may be somewhat to very familiar with different weekly topics. Physical geographers may prefer to read Valiela's "Doing Science" or Friedland and Folt's "Writing Successful Science Proposals" (my preferred text); social or human geographers may select another book. Based on your prior background and experience, it is OK to skim these and/or opt for something else on the list (see above list of additional helpful readings, others could be looked at) and/or readings not on the list but pertaining to the weekly topic. The bottom line is to find something helpful and share in class (and in the log) what you read (some key points, quotes, helpful tables and graphics and ideas) and what new insights you have. We will discuss the readings the SAME week that the topic is presented, so read this list IN ADVANCE of class. A bullet listing of ideas or a half-page of text for each week should suffice. PART 2: Concurrent with these readings, you should set aside time for research and reading related to your potential/chosen research topic(s). Also keep and submit a log of tasks related to your own research to keep you on-task and motivated. Students should be reading a minimum of 2 journal articles per week, and skimming or reading the abstracts of several more. Towards the end of the semester, you will turn in your WEEKLY LOGS as a Word file electronically. Due Date: Each Week

### **PARTICIPATION AND DISCUSSION: CLASS (10%)**

Your involvement (comments, ideas, questions, and experiences) in discussions about readings and various facets of geographic research will improve the class experience and result in a high participation grade. Unexcused absences or lack of participation in other capacities will result in a low participation grade. 3

### **RESEARCH ASSIGNMENTS RELATED TO YOUR TOPICS (2, 20% total as follows)**

Assignments intended to show components of how to design a research project and to propel you towards your own research by giving you deadlines for specific tasks.

## **TOPIC SELECTION AND DEVELOPMENT (10%)**

Begin by choosing a subfield and potential research topics. Then develop at least four research questions from these. Assess and discuss the viability of each question based on resource, feasibility and other issues discussed in class and then narrow down your list to the top two that would be “doable” within a year and with \$12,000 or less of funding (this number is chosen because of NSF DDIG funding constraints). Find a minimum of three articles relevant to each of your top two questions and list the complete citations. Discuss primary data that would be collected and identify secondary data (from the internet, govt. documents) that might complement your proposed study. Send a digital file of your document to the instructor, who will post the papers for everybody to read. We will discuss all ideas, and you will be the discussion leader for the strengths and weaknesses of each of your ideas. Within one month from the start of the semester, you will then have a few possible research questions to investigate. These should be refined, improved, and fleshed out over the course of the semester. **Due Date: Week 4 meeting**

The grading rubric is as follows: 20% thoughtfulness and originality of ideas, having set a framework which identifies this as an important and unique research problem by using appropriate narrative and citations from the literature; 20% organization, structure and appearance including use of headings and subheadings, consistency, 20% writing quality and grammar, aiming for coherent sentences, appropriate sequence, use of transitions, free of errors, 20% quality, quantity, completeness of references and citations and coherence with how the three selected relate to your proposed research questions, 20% depth of discussion about primary data to be collected and secondary data used including variables used, scale, spatial character, timing, frequency and length of data, and other relevant data issues.

## **RESEARCH PAPER REVIEW (10%)**

This is designed to create a working method by which you can synthesize articles related to your research, now and possibly in the future. Find and review two research papers that are published in peer-reviewed scientific journals pertinent to your research topic. Use subheadings to structure your review. Begin with a full citation of the article. You will evaluate objectives, research hypotheses, variables, sampling, methods, results and interpretation, graphics and tables, etc. For each article: 1) Discuss the initial idea(s), objectives and/or hypotheses of the paper. What is the applied and theoretical significance of this work? ; 2) Discuss the key variables involved. What scale of measurement is used for each? Are the operational definitions clear or unclear? Are there changes or improvements that you would suggest? ; 3) Discuss the chosen spatial and/or temporal sampling strategies for evaluating study variables in the context of a designated research question. Are they appropriate to answering the chosen question? Is there anything you would do differently? ; 4) What is your opinion of the research methods being used?; 5) Discuss the instruments and techniques used to measure the variables. Discuss whether a similar study would be feasible for a student like yourself considering cost, personnel, training and other issues; 6) What were the main results of the study? Does the interpretation seem valid based on the data and analysis?; 7) What is your opinion of the graphics and tables? Discuss any other comments about what you think the author(s) did well and what you think the author(s) could

have done better. How would you suggest improving the research study? Include a copy of each article. **Due Date: Week 8 meeting**

The grading rubric is as follows: 20% article selection...did you find two helpful research articles in refereed journals that can be used as models to evaluate sampling, variables, graphics, tables, etc.; 20% ability to pick out key ideas, objectives, hypotheses, and significance; 20% discussion of sampling issues, instruments and techniques; 20% discussion of results, interpretation, and graphics; 20% overall critical review, organization, grammar, and inclusion of article copies 4

### **PROPOSAL SUBMISSION IN NSF FORMAT (35%)**

Prepare a 10-12 page proposal with budget according to NSF guidelines for DDIG (2 pages of figures with minimal text can be added to the 10 pages of narrative, font sizes, margins, etc.). As discussed in class, a good proposal begins with passion and a good idea, responds to a fundamental need, is informed by the literature, enunciates its goals clearly, poses research questions, has a well-developed research design, speculates about outcomes, discusses significance and relevance, portrays excitement and enthusiasm, follows a coherent structure, and instills confidence. In addition, there should be a 1-page project summary which explicitly includes a section on intellectual merit and broader impacts. The budget page and one page biosketch should be attached and are not counted in the 12 page limit. Use subheadings, bold, italics, to help organize the proposal as discussed in class on week 4. E-mail to me so it can be posted on the class website. Your grade is based on my evaluation, not that of your peers, although I will review their comments. **Due Date: Week 12**

The grading rubric is as follows: Intellectual Merit (20%) Is the research topic/problem clearly stated? Is there enough specificity to understand the nature of work planned?; Does it advance knowledge within field or across different fields?; Are the hypotheses clear, concise and specific?; Are creative and original concepts brought forwards?; Literature Review and References (20%) Is the research placed within its proper context or perspective?; Are the hypotheses adequately tied to previous research?; Is there sufficient literature cited to understand the relevant theories?; Is the literature summary adequate in scope, detail and clarity?; Are there at least 20 references from refereed journals?; Organization and Structure (20%) Is the proposal logically organized and structured?; Are bold and italics used to bring attention to key statements?; Are subheadings used so that the reader can find important components?; Are the different facets of the project tied together?

Methods and Variables (20%) Are both the variables and findings of previous research clearly explained?; Are the variables and concepts of the planned research clearly explained?; Where will the data come from (primary or secondary sources)? How is/will each be measured?; Has the spatial framework been clearly defined? Is it appropriate for the given problem?; Are special instruments required? Are there contingency plans for breakdowns, etc.?; For questionnaires... does each question have a clear purpose and relation to a hypothesis?; What statistical tests and models will be used?;

What are the data requirements of the statistical techniques?; Budget, Timetable and Background (10%) Is the proposed time framework adequate for the completion of this research?; Does the detailed timeline seem reasonable for the components involved?; Are there any confounding situations associated with the planned time framework?; Is there a contingency plan if problems occur?; Are different components of the budget (salaries, travel, equipment, expense) itemized?; Does the budget seem reasonable? Does it follow guidelines (what NSF requires)?; Does the biosketch support the competence of the researcher? ; Broader Impacts (10%) Does this promote teaching, training, and learning?; Does this broaden the participation of underrepresented groups?; Does this enhance the infrastructure for research and education? ; Will it be disseminated broadly to enhance scientific and technological understanding?; Are the benefits to society clearly stated?

### **PROPOSAL PANELIST (15%)**

Everyone will be assigned 3 proposals to review. Make copies of each review and e-mail an electronic version to the instructor. A good proposal review summarizes the proposed project in a few sentences, notes strengths and weaknesses in the fundamental ideas, literature review, data available or to be collected, spatial and/or temporal sampling, methods, proposed analysis and writing. It provides constructive suggestions and specific helpful comments that, if addressed, will improve the proposed project or gives clear advice and ratings in such a way that the author is not deluded about any shortcomings or concerns. Each proposal review should be about one page in length, and written using criteria and ratings discussed in class developed by the NSF (including intellectual merit and broader impacts). A sample form will be distributed electronically. Panelists will participate on an in-class panel where each proposal author leaves the classroom while their project is being discussed by reviewers. One of those reviewers (assigned by instructor) will write the panel summary. Reviewers will not be identified on the comments given back to the proposal authors, and the ratings will be grouped by the instructor to maintain confidentiality. **Due Date: Week 14 meeting 5**

### **WEEKLY SCHEDULE, AGENDA AND READINGS**

**Week 1 INTRODUCTION TO RESEARCH -- 6-slide Handout of presentation**

REVIEW TWO PROPOSALS FOR NEXT WEEK: 1. [Gaughan](#), 2. [Pricope](#). Read [NSF guidelines](#) especially **Merit Review Principles and Criteria** on page III-1; write reviews; upload to assessments.

Introduction to the class, semester and syllabus

Background ideas on research

Good and bad practices in research: A card game



READINGS: Read the list for each week in advance of class (see Week 2). For this week, read Firestein, S. 2012. Ignorance: How It Drives Science. Oxford University Press, Oxford, UK. 195 pp.

**Week 2 RESEARCH QUESTIONS, SUBFIELDS, LITERATURE SEARCHES IN GEOGRAPHY -- 6-slide Handout of Presentation.**

Before Class: Read Reviews of two proposals

"Panel Session"

How to start developing a good research question.

Discussion about readings, Questions and Answers, Conceptual Diagram

Effective literature searches and key words

Writing a literature review

Secondary data sources

READINGS:

Hillel, D., 1987, On the tortuous path of research: *Soil Science*, v. 143(4), pp. 304-5.

Chapter 1, *Thinking About Research*, pp. 1-28 in Kitchin, R. and Tate, N.J., 2000, *Conducting Research in Human Geography: Theory, Methodology and Practice*, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4).

Chapter 1 (*Thinking about Research*, pp. 1-20) and Chapter 4 (*Reading for Research*, pp. 92-116), in Blaxter, L., Hughes, C., and Tight, M., 2006, *How to Research*, Open University Press, Buckingham, UK.

Chapter 12 (*References in Detail: How Many and How Recent?*) in Friedman and Folt. 2009. *Writing Successful Science Proposals*. 2<sup>nd</sup>Ed. Yale University Press

Reading from <http://www.criticalthinking.org/> (How to Read); begin with <http://www.criticalthinking.org/pages/critical-thinking-the-art-of-close-reading-part-one/509>.

Randolph, J. 2009. A Guide to Writing the Dissertation Literature Review. *Practical Assessment Research & Evaluation*, 14(13). Available online: <http://pareonline.net/getvn.asp?v=14&n=13>.

Chapter 3 (Section 5), *Obtaining and Using Secondary Data*, pp. 60-69 in Kitchin, R. and Tate, N.J., 2000, *Conducting Research in Human Geography: Theory, Methodology and Practice*, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4).

[Coffin 2007 - a dissertation literature review that was also a publishable journal article.](#)

**Week 3 TOPIC SELECTION AND EARLY CONSIDERATIONS; SECONDARY DATA; 6-slide handout of presentation pdf**

[Great Illustration of What a Ph.D. is](#)

Discussion about readings

What is your planned thesis or dissertation topic? Concept map or conceptual diagram?

What did you learn from reading, your 3 questions and advisor's answers, and the concept diagram? Describe

Bibliography? Reference Manager choice? Keywords?

Early considerations in research

Topics: scope, feasibility, assumptions

Research hypotheses and conceptual models

READINGS:

Chapter 2 (Getting Started, pp. 21-52) and Chapter 3 (Thinking about Methods, pp. 53-98) and Chapter 4 (Reading for Research, pp. 99-131) in Blaxter, L., Hughes, C., and Tight, M., 2006, How to Research, Open University Press, Buckingham, UK, 260 pp.

Chapter 2, Planning a Research Project, pp. 28-44 in Kitchin, R. and Tate, N.J., 2000, Conducting Research in Human Geography: Theory, Methodology and Practice, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4).

Chapter 1: Obtaining Scientific Information, pp. 1-31, Valiela, I., 2009, Doing Science: Design, Analysis and Communication of Scientific Research, Oxford University Press, Oxford, UK, 352 pp.

Theory, Background and History, Research Question (From U. California Berkeley) 6

**Week 4 Research Topics and Questions and SCIENTIFIC ETHICS pdf file; 6-slide handouts**

Class discussion of on selecting and developing topics (discussion of Asst. 1)

STUDENTNAME Topics and Research Questions

STUDENTNAME Topics and Research Questions

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### **ASSIGNMENT due (Topic selection and development)**

Begin discussion about scientific ethics.

#### **READINGS:**

[National Academies of Science, Engineering and Medicine, 2009, On Being a Scientist: a Guide to Responsible Conduct in Research. Third Edition, Committee on Science, Engineering, and Public Policy \(COSEPUP\)](#), free download available for personal use.

University of Florida [regulation 6C1-1.0101 Policy for Dealing with Conduct in Research](#).

Use this week to read and research about your likely research topic, and to select, refine and/or revise your research questions and approaches.

### **Week 5 PROPOSALS: AN INSIDE PERSPECTIVE**

Discussion about readings - scientific ethics.

Where to look for funding

Presentations created by NSF Program Officers: [Gholz: The Nitty-Gritty: Tips for a Better NSF Proposal](#); [Bauer and Baerwald: Proposal Development and Evaluation](#). {NOTE THAT WE WILL GO OVER THIS PRESENTATION IN CLASS} [NSF Proposal and Award Policies and Procedures 2020](#);

[NASA ROSES \(Research Opportunities in Space and Earth Sciences\)](#) via NSPIRES (NASA Solicitation and Proposal Integrated Review and Evaluation System); NOTE: ROSES 2014 was released on 18 February 2014!

Review DSR FYI & other sources of announcements: [UF Office of Research](#); [UF Division of Sponsored Research](#); [UF Research Program Development Office](#); [Proposal Processing and Pre-Award Services](#);

Proposal Development

Proposal Evaluation

The tasks of panelists and panels

## READINGS:

Chapter 7 (Section 3, The Proposal): Other Means of Scientific Communication, pp. 174-185, Valiela, I., 2009, *Doing Science: Design, Analysis and Communication of Scientific Research*, Oxford University Press, Oxford, UK, 352 pp.

Hengl, T. and Gould, M., 2002. Rules of thumb for writing research articles.

[http://www.slideshare.net/alena\\_romanenko/hengl-gould-2002-rules-of-thumb-of-writing-a-research-article](http://www.slideshare.net/alena_romanenko/hengl-gould-2002-rules-of-thumb-of-writing-a-research-article)

Examples of reviews (of DDIG proposals): [Pricope NSF DDIG Proposal](#); [Pricope NSF Context Statement](#); [Pricope NSF Panel Statement](#); [Pricope Review 1](#); [Pricope Review 2](#); [Pricope Review 3](#)

Example of reviews (of complicated, collaborative proposal by senior scientists): [Cambodia-Mekong 2010 Proposal](#); [Panel Statement 1](#), [Panel Statement 2](#), [Review 1](#), [Review 2](#), [Review 3](#), [Review 4](#), [Review 5](#), [Review 6](#), [Review 7](#), [Review 8](#)

## **Week 6 [More on Proposals and then VARIABLES pdf file](#); [6-slide/page pdf file](#)**

More about Proposals from NSF Program Directors: Bauer and Baerwald, Gholz

Discussion about readings

Variables and levels of measurement

Conceptual and operational definitions

Accuracy, precision, validity, reliability

Data categorization and classification

Cause and effect, dependence/independence

## RELATED READINGS:

Chapter 2: Elements of Scientific Data and Tests of Questions, pp. 32-51, Valiela, I., 2009, *Doing Science: Design, Analysis and Communication of Scientific Research*, Oxford University Press, Oxford, UK, 352 pp.

Chapter 3, Section 2, Classifying data types and measurement scales, pp. 45-47, in Kitchin, R. and Tate, N.J., 2000, *Conducting Research in Human Geography: Theory, Methodology and Practice*, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4).

[Concepts and Terminology, Research Design \(From U. California Berkeley\) 7](#)

## **Week 7 CATCHING UP: PROPOSALS, REVIEWS, VARIABLES**

Catching Up: On Good Proposals by NSF Program Directors - Bauer and Baerwald, Gholz

ASSIGNMENT due (Research Paper Reviews)

STUDENTNAME [paper 1](#), [paper 2](#), [reviews](#)

A Tale of Two Proposals

Discussion about readings: Variables

UFIRST Tutorial?

RELATED READINGS:

Chapter 5, Managing Your Project, pp. 117-140 in Blaxter, L., Hughes, C., and Tight, M., 2006, How to Research, Open University Press, Buckingham, UK.

Chapter 4: Principles of Research Design, pp. 84-105, Valiela, I., 2009, Doing Science: Design, Analysis and Communication of Scientific Research, Oxford University Press, Oxford, UK, 352 pp.

Chapter 3, Section 4, Sampling, estimation, and distribution, pp. 53-61, in Kitchin, R. and Tate, N.J., 2000, Conducting Research in Human Geography: Theory, Methodology and Practice, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4).

## **FIRST WEEK OF MARCH SPRING BREAK**

### **Week 8 TITLES, VARIABLES, PROJECT PLANNING; QUESTIONNAIRES AND HUMAN CHARACTERISTICS pdf file; 6-slide handout file.**

Short discussion about papers and reviews

Project components and tasks

Spatial geographic concepts and sampling issues

Temporal sampling issues in geography

Instruments, sampling tools and techniques

Titles: Good, Bad, and Ugly (see PPT-7)

Discussion about readings

Presentation: Human subjects and IRBs

Interviewing strategies and pitfalls

Questionnaire issues

Reviewing a sample questionnaire

RELATED READINGS:

Chapter 6 (Collecting Data, pp. 152-172) and Chapter 7 (Analyzing Data, pp. 173-206) in Blaxter, L., Hughes, C., and Tight, M., 2006, How to Research, Open University Press, Buckingham, UK.

Chapter 3, Section 3, Generating Primary Quantitative Data, pp. 47-53 in Kitchin, R. and Tate, N.J., 2000, Conducting Research in Human Geography: Theory, Methodology and Practice, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp.

**Week 9 DATA PRESENTATION, STATISTICS AND INTERPRETATION pdf file; 6-slide handout pdf file**

Discussion about readings

Presentation: Figures: Graphs and charts, maps and other diagrams, Descriptive statistics; Inferential statistics and hypothesis testing

RELATED READINGS:

Chapters 8-10: Presenting Data in Tables, Presenting Data in Figures, Case studies of Graphical Data Presentation (pp. 187-273) and Chapter 3: Statistical Analysis (pp. 52-83) in Valiela, I., 2009, Doing Science: Design, Analysis and Communication of Scientific Research, Oxford University Press, Oxford, UK, 352 pp.

Chapters 4-6 {NOTE - ALL THREE OF THESE CHAPTERS SHOULD BE REDUNDANT FOR EVERYBODY IN THIS CLASS} (Chap 4: Preparing, exploring and describing quantitative data; Chap 5: Analysing and interpreting quantitative data; Chap. 6: Spatial analysis), pp. 70-210, Kitchin, R. and Tate, N.J., 2000, Conducting Research in Human

Geography: Theory, Methodology and Practice, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4). 8

**Week 10 WRITING AND ORAL PRESENTATION IN GEOGRAPHY PDF FILE; 6-SLIDE/PAGE PDF FILE**

Discussion about readings

Preparing graphics for oral presentation

Good qualities in an oral presentation

[Good scientific poster design from Cornell](#)

Scientific writing

Journal quality and rankings

The tasks of reviewers and editors

Discuss of current status of individual projects

**RELATED READINGS:**

Chapter 8 (Writing Up, pp. 226-254) and Chapter 9 (Finishing Off, pp. 255-279) and Chapter 7 in Blaxter, L., Hughes, C., and Tight, M., 2006, How to Research, Open University Press, Buckingham, UK.

Chapter 7 : Other Means of Scientific Communication, pp. 163-186, Chapter 5: Communication of Scientific Information: Writing, pp. 107-137, and Chapter 6: Communicating Scientific Information: The Scientific Paper, pp. 138-161, Valiela, I., 2009, Doing Science: Design, Analysis and Communication of Scientific Research, Oxford University Press, Oxford, UK, 352 pp.

Chapter 10, Writing-up and dissemination, pp. 270-289 in Kitchin, R. and Tate, N.J., 2000, Conducting Research in Human Geography: Theory, Methodology and Practice, Prentice Hall/Pearson Education Ltd., Harlow, England, 330 pp. (ISBN 0-582-29797-4).

[Schulman, E. R. 1996, "How to Write a Scientific Paper, Annals of Improbable Research, Vol. 2, No. 5 \(1996\).](#)

Hengl, T. and Gould, M., 2002. Rules of thumb for writing research articles.

[http://www.slideshare.net/alena\\_romanenko/hengl-gould-2002-rules-of-thumb-of-writing-a-research-article](http://www.slideshare.net/alena_romanenko/hengl-gould-2002-rules-of-thumb-of-writing-a-research-article)

Reading from <http://www.criticalthinking.org/> (How to Write)

**31 March: Week 11 [POLISHING THE PROPOSAL pdf](#); [6-slide pdf](#)**

Meeting for final proposal submission: Questions and Answers presentation

[Grant Proposal Guide: Proposal Preparation Instructions pp II-1 to II-41](#)

Continued discussion of last week's readings

[Biosketches and Budgeting from NSF GPG 2013](#)

[Gaughan biosketch from DDIG](#)

[Binford biosketch](#)

[Example budget template \(complicated\)](#)

[NSF template \(almost unusable\)](#)

[Budget Justification \(Gaughan DDIG - NOTE THAT THERE ARE NO F&A COSTS IN THIS BUDGET\)](#)

[Budget Justification \(Complicated Macrosystems Grant Proposal\)](#)

[Timeline and Budgeting](#) (From U. California Berkeley)

[UF F&A \(indirect costs\) agreement](#)

[Example budget justification \(beware - this is more complicated than you will use\)](#)

**Week 12 PROPOSAL REVIEW**

**ASSIGNMENT due (Proposals with Biosketches)**

At home: Read and review 3 proposals based on instructor's assignment

[Merit Review Principles from NSF Grant Proposal Guide](#)

DO NOT DISCLOSE YOUR ASSIGNMENTS/OPINIONS TO OTHERS

DO NOT DISCUSS PROPOSALS OUTSIDE THE CLASSROOM



## **14 April: Week 13 PROPOSAL EVALUATION: QUESTIONS AND ANSWERS**

[NSF Guide to Proposal Reviewers](#); Parts of pages III-1 to III-5

[Reviewer Guidelines for Class \(from NSF and stuff you have been seeing in the presentations\)](#)

[Proposal Reviewer Form](#)

[NSF Online Help guidelines for Panelists](#)

[Presentations slides on how to be a reviewer and a panelist pdf file](#); [6-slide pdf file](#)

[STUDENTNAME Proposal](#)

[STUDENTNAME Proposal](#)

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## **Week 14 IN-CLASS PANEL REVIEW-PART I**

ASSIGNMENT due (Proposal Reviews)

[STUDENTNAME Review 1](#), [Review 2](#), [Review 3](#); Panel Summary

[STUDENTNAME Review 1](#), [Review 2](#), [Review 3](#); Panel Summary

ASSIGNMENT due (Log of weekly readings and research task lists)

### **Additional Information**

Honor Code: Students are expected to abide by the UF honor code and ethical conduct, listed on the following website: <http://www.dso.ufl.edu/studentguide/studenthonorcode.php>

Students with disabilities: Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Other Concerns: Please be aware that the University Counseling Center (392-1575), the Student Health Care Center (392-1161) and Student Mental Health (392-1171) can assist students as they work through personal, academic and social issues. Please take care of your health and watch for swine flu symptoms and other contagious diseases. Provide advance notice and obtain documentation for excused absences where possible. Please keep your cell phones off during class time.

