SELF-EVALUATION REPORT

FOR

ACCREDITATION

By

The Society of American Foresters

2006

VOLUME III
APPENDICES C-E

Department of Forest Sciences
School of Natural Resources and Agricultural Sciences
University of Alaska Fairbanks
HANDBOOK

SENIOR THESIS
IN
NATURAL RESOURCES MANAGEMENT

School of Agriculture and Land Resources Management
Department of Plant, Animal and Soil Sciences
Department of Forest Sciences
Department of Resources Management

Effective September, 2002
# SENIOR THESIS TIMELINE

The weeks listed below are approximate dates. Specific due dates will be handed out in the workshops at the beginning of each semester. The calendars will vary slightly due to timing of holidays and number of students enrolled.

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<th>NRM 405</th>
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<td>WEEK 1-2 or earlier</td>
<td>Complete Introductory Workshop and Proposal Writing Workshop</td>
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<td>WEEK 1-3 or earlier</td>
<td>Choose a topic and thesis advisor. Have <strong>required</strong> meeting with advisor and advisory committee</td>
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<tr>
<td>WEEK 3 or earlier</td>
<td>Submit topic to advisory committee for approval (must have attended the Introductory workshop first) Return committee signature form to office.</td>
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<td>WEEK 2 or earlier</td>
<td>Complete Thesis Writing Workshop</td>
</tr>
<tr>
<td>WEEK 1-2</td>
<td>Receive time for oral presentation/poster. Meet with advisory committee (required). Return committee signature form to office</td>
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<tr>
<td>WEEK 10 or earlier*</td>
<td>Submit first draft of thesis to coordinator</td>
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<td>WEEK 11</td>
<td>Receive grade on first draft</td>
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<tr>
<td>WEEK 11-14*</td>
<td>Oral thesis presentations (mandatory attendance for all second semester students)</td>
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| Last Day of Regular Classes | Submit Thesis to Committee |

* students must submit the draft proposal or draft thesis to their committee and receive a grade from all committee members by the deadline established for their presentation or it will be cancelled. Presentations cannot be postponed or dates changed unless there is a verifiable family or medical emergency. Students must contact the course coordinator **prior to** the presentation if such an emergency exists.

** Students cannot sign up for the second semester with an "I" (incomplete) grade during the first semester. All requirements for completing an "I" must be fulfilled before the first class period of the following semester or the coordinator will initiate a withdrawal.

**NOTE:** NRM 405-6 is NOT offered during summer sessions. You may complete research during the summer, but credit must be taken during fall or spring semesters; presentations cannot be given in summer.
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INTRODUCTION

NRM 405-6, Senior Thesis in Natural Resources Management, is required of all students majoring in Natural Resources Management. The purpose of the course is to provide an opportunity for you to bring together the knowledge you have acquired through course work, internships and work experience; to use that collective knowledge in formulating a question in natural resources management; and to demonstrate competency in problem solving, analysis and written and oral communication. The senior thesis is a research report that includes the following major components:

1) identifying and defining a question on some aspect of resources management,
2) attempting to answer the question by conducting an experiment, gathering survey data, analyzing existing literature, etc.,
3) discussing and/or defending your conclusions and supporting them with existing literature,
4) and sharing your findings with others.

These components differ from a term paper by adding an element of creativity and independent thought. The thesis goes beyond reporting what others have done and allows you to formulate your own question, research it, and defend your conclusions.

Effective communication is one the most important skills that every student of natural resources management should master. Regardless of the area of specialization, the ability to write and speak clearly in your field of expertise is essential. The senior thesis course provides an opportunity for you to practice good writing and speaking skills within the context of natural resources management. Your efforts will be judged both on content and your ability to effectively communicate with your peers and faculty.

COURSE REQUIREMENTS AND GRADES

NRM 405-6 is for Natural Resources Management majors and minors only. In order to enroll in NRM 405-6 for credit, you must be a senior or second semester junior and have satisfactorily completed one NRM intensive writing course and all NRM core courses. If these criteria are not met, you must receive permission from the course coordinator to enroll.

Letter grades will be given when the course is taken for credit. Grades for all written projects will be the average of three grades received from each member of the advisory committee. Grades for presentations will consist of one grade from each committee member plus an average grade for all other faculty members participating in the session.

NRM 405:

<table>
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<th>Component</th>
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<td>Attendance at First Workshop</td>
<td>10</td>
</tr>
<tr>
<td>Required committee meeting</td>
<td>10</td>
</tr>
<tr>
<td>Topic description</td>
<td>25</td>
</tr>
<tr>
<td>Draft proposal</td>
<td>100</td>
</tr>
<tr>
<td>Proposal presentation</td>
<td>100</td>
</tr>
<tr>
<td>Attendance at all proposal presentations</td>
<td>10 (each session)</td>
</tr>
<tr>
<td>Final Proposal</td>
<td>100</td>
</tr>
<tr>
<td>Annotated Bibliography</td>
<td>50</td>
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<tr>
<td>Total points</td>
<td>405+ (depends on number of presentation sessions)</td>
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NRM 406:

| Attendance at second workshop | 10 |
| Required Committee meeting | 10 |
| Draft thesis | 150 |
| Final thesis | 150 |
| Thesis Presentation | 100 |
| Attendance at all thesis presentations | 10 (each session) |
| Submission of final thesis on disk | 10 |
| Submission of permission to publish form | 5 |
| **Total points** | **445+** (depends on number of presentation sessions) |

During each semester grades will be assigned as follows:
- 90-100 percent of total points: A
- 80-89: B
- 70-79: C
- 60-69: D
- 59 and below: F

**Incomplete grades** will be given only in cases where satisfactory progress in the class has been achieved, and circumstances beyond the student's control (verifiable family or medical emergencies) prevent completion of course requirements. All incompletes must be approved by the coordinator and the advisor. Grades for NRM 405 must be changed from an incomplete to a letter grade before the first day of class of the second semester or you will not be permitted to enroll in NRM 406.

All papers and presentations will be evaluated on content as well as written and oral communication skills. All papers will be edited and points deducted for inaccurate spelling, punctuation, poor grammar, and inaccurate or incomplete format as specified. Oral presentations will be graded on content as well as presentation effectiveness. Posters, videos, slides, etc. will be graded on content, layout, and effectiveness in communication. Written supporting materials also will lose points for inaccurate spelling and poor grammar.

**Deadlines** for proposal and thesis presentations cannot be changed or postponed unless there is a verifiable family or medical emergency. A graded draft proposal or draft thesis must be on file in the coordinator's office prior to the presentation date or the presentation will be cancelled. The course coordinator must be notified prior to the presentation date in the event of an emergency. No shows and students who do not make prior arrangements, receive no credit.

**Students with recognized learning disabilities.** Anyone enrolled in NRM 405 or 406 who has a recognized learning disability that may interfere with his/her ability to perform any of the work in these courses must contact the UAF Center for Health and Counseling and the course instructor within the first two weeks of the class to arrange for appropriate assistance.

**Prior Research:** Research completed by the student prior to enrollment in NRM 405 will not be accepted. The Introductory workshop, acceptance of a thesis topic by the full advisory committee, draft and final proposals and proposal presentation must be completed prior to conducting the research project for senior thesis credit.
ORIENTATION WORKSHOPS

The first workshop will introduce NRM 405; outline the responsibilities of the course coordinator, faculty advisor and student; review grading policies; and outline components of the proposal and proposal presentation. The second workshop will review policies pertaining to NRM 406, the senior thesis; how to write a senior thesis; how to make an effective presentation; and how to use visual aids such as slides and overheads.

You may elect to participate in these orientation workshops any time prior to your senior year, and may attend more than once. The course coordinator will maintain a permanent file in which the date of your attendance at workshops will be recorded. Although you might complete the workshops early, you will not receive credit until you enroll for credit. The workshops must be completed before submitting a topic description, proposal and thesis for credit. If you attend a workshop early, perhaps as a freshman, be aware that the handbook changes every September. You are responsible for learning of any changes by reading the handbook or attending another workshop. After the first two weeks of class, the course coordinator will meet with students as needed to answer questions and help solve problems that may arise.

TEAM MEMBERS

The course coordinator is the SALRM faculty member in charge of the course. The coordinator will conduct all workshops, schedule presentations, and facilitate functions of the advisory committee. The coordinator will assist you, if necessary, in finding an advisor.

During the scheduled class time and posted office hours, the coordinator will answer all questions regarding the processes and policies of NRM 405-6. The coordinator will maintain all NRM 405 files and submit final grades. The coordinator will establish the deadlines for completion of individual components of the two-semester thesis and will ensure that all requirements and standards are met. Presently the coordinator is:

Fall semester: Dr. Dave Valentine  Spring semester: Dr. Pat Holloway
309 O'Neill                  Georgeson Botanical Garden
474-7614 ffdwv@uaf.edu       474-5651 ffpsh@uaf.edu

The thesis advisor is a SALRM faculty member whose area of interest most coincides with your research interests (Appendix 2). This person need not be your academic advisor but should be the person most familiar with your project area. Your thesis advisor will be your major contact during the two semesters and will provide guidance in defining the topic, designing the project, preparing drafts and final products. This faculty member will work with you to ensure that the selected project is feasible given time and economic constraints.

Your advisor will help you formulate ideas for your thesis and generate discussion. You are responsible for meeting all deadlines and completing all written and oral assignments. Your advisor can provide assistance by helping you refine your ideas and locate equipment to complete an experiment. Do not expect your thesis advisor to correct spelling and grammatical errors. If you have questions regarding writing skills, contact the UAF Writing Center for editorial assistance.
A faculty member may not advise more than three students during a semester. Therefore, you should solidify your ideas and make contact with a potential faculty advisor as soon as possible. It is strongly recommended that you set up a weekly meeting with your thesis advisor to help keep you and your advisor on track with the timelines and to make sure the lines of communication are always open.

The advisory committee is composed of three faculty members, your advisor, and two others who have an interest or expertise in your chosen thesis topic area. This committee will approve your topic and grade all written and oral projects during the two semesters. The committee will ensure that the high standards developed by the SALRM faculty are maintained. You will have access to every member of the committee for advice and support while completing your project.

One member of the committee can be a non-SALRM faculty member, but they cannot chair a committee. Faculty from other departments, agency personnel, private researchers, etc. may be included on the committee with the approval of the coordinator and the advisor. Technicians and graduate students from SALRM, other university departments, agencies and public organizations may be included as additional, non-grading members of a committee but cannot replace a faculty committee member. Participation by UAF graduate students and technicians is strictly voluntary and must be approved by the appropriate supervisor and department head. Remember, a person does not have to be a member of your committee to lend assistance, advice, or support.

It is required that you set up a meeting with your committee and advisor within the first three weeks of each semester so that all committee members can have input at one time into your topic area and can help you with methods. Make every effort to keep all members of your committee well informed of your progress. Don’t wait until the last minute to get help. Also, recognize that your committee members are very busy with lots of other classes and research. It is up to you to keep them informed of your progress and all timelines. Hand in the committee form (pg 18) to the secretary in 303 O’Neill immediately after that meeting.

The course coordinator will attempt to solve problems that may arise between you and your committee. If the problem cannot be resolved, an appeal committee will be formed that will include one chairperson (selected by the three department heads) and one person from each of the three departments in SALRM (selected by the department heads). The committee decision is final.

PRIOR RESEARCH:
Research completed by the student prior to enrollment in NRM will not be accepted. The Introductory workshop, acceptance of a thesis topic by the full advisory committee, draft and final proposals and proposal presentation must be completed prior to conducting the research project for senior thesis credit.

CHOOSING A TOPIC

Use your classroom discussions and work experience to identify a topic area that interests you. Talk to other students, your academic advisor, and other faculty members about your idea. The specific topic is your choice, but it must be approved by your advisory committee.
Find a faculty member whose interests are most closely associated with your project. Appendix 2 lists all SALRM faculty and their research specialties. Your faculty advisor will assist you in refining your ideas and, most importantly, will make sure the project is feasible in the short amount of time. Complete a thesis topic description form (page 17), and submit it to your committee by the deadline. At the same time, complete the committee signature form, and return it to the coordinator.

The thesis project may or may not involve an experiment or laboratory research. Also, it may or may not represent original research. However, the topic should have a level of complexity that distinguishes the senior thesis from a term paper. The topic should be one that provides for independent thought and critical analysis.

A paper reviewing the published methods of germinating white spruce seeds is a good term paper, but it is not acceptable as a senior thesis. A paper based upon an experiment comparing several methods of germinating white spruce seeds at different temperatures could be a good thesis. A comprehensive review of the literature on a particular topic is appropriate as long as it contains an analysis or critical review of the literature. For instance, an outline of the literature relating to land use practices in the Tanana Valley would not be sufficient for a senior thesis. However, a critical comparison of land use practices on public and private lands could be appropriate. Make sure you can formulate your topic into a hypothesis or question.

EXAMPLES OF POSSIBLE TOPICS

The SALRM faculty compiled the following list of topics that might be explored in a senior thesis. This list should serve as a catalyst to help develop your own ideas. Your chosen topic should reflect your own interests and should be discussed and finalized with your thesis advisor.

What are the similarities and differences in the resource planning process of a native corporation and a public agency?
Compare and evaluate the public involvement process of two resource plans.
Is GIS an effective tool in resource planning processes?
How effective are the interpretive programs for a public entity such as Creamer's Field Wildlife Refuge?
Survey potential wilderness users to compare perceived needs and appropriate management classes.
How effective is the public hearing process in decisionmaking at the Alaska Division of Forestry?
What is the best percentage of crab meal in diets of swine?
What are the animal rights issues in Alaska, and are they effectively addressed in public hearing and laws?
What are the controversies surrounding the use of chemical growth promoters in beef and swine production?
What are the effects of 24-hour photoperiod on flower initiation, growth and development of a specific plant?
How can seed germination for a horticultural crop be changed by preconditioning seed treatments?
How effective is the elementary and secondary school curriculum in natural resources management?
Are the needs for urban forestry in the Fairbanks area being met?
How effective are renewable resources management strategies of Alaska native corporations?
What are the fuel wood management strategies for state forest lands in Alaska and are they being met?
What are the best conditions for seed germination of Alaska wildflowers?
Develop a strategy for Alaskan agricultural product marketing and test its effectiveness.
How does agricultural development differ among countries in the circumpolar north?
What are the forest tree stand age characteristics of pure white spruce stands in Rosie Creek?
What are the relationships between forest tree crown width/diameter and height?
Do nitrogen-fixing bacteria occur in Alaska native legumes? Can they be isolated?
How does increased atmospheric carbon dioxide affect plant nutrient requirements?
How do consumer perspectives of Alaska-grown food products compare with imported products?
How much vitamin A is in Alaska-grown carrots, and how does it compare to imported products?

THE TOPIC DESCRIPTION

Formulate a tentative title for your project and write a description of your topic in 150 words or less. The description should include your objectives, question or hypothesis and your approach (methods). Provide enough detail so your committee can understand what you want to do and how you will do it. This topic description may be written or refined jointly by you and your committee members during the required meeting at the beginning of the semester. Your committee will evaluate the feasibility of the project based on time and economic constraints and help you refine your ideas. Use the form on page 17 or type your own, and submit one copy to each of your committee members and one copy to the coordinator.

WRITING THE SENIOR THESIS PROPOSAL

Submit a typed (12 point or larger) proposal (plus grading sheet pgs 19 or 20) detailing the research project to be completed during the two-semester senior thesis course. The proposal should include the components listed below. The body of the proposal (items 4 through 6) is limited to two typed pages (may be single spaced). Use separate pages for the title page, timetable, literature cited and references. The total length of the proposal should not exceed 6 pages. Two copies will be graded, a draft and a final proposal. You may submit as many drafts as necessary to your advisor and committee prior to receiving a grade. Notify your advisor whether or not the draft is to be graded.

1) Title (Use sample title page, pg 16)
2) Author
3) Date

4) Introduction including
   Statement of hypothesis or question
   Importance or significance of the research
   Objectives

5) Review of previous investigations
6) Methods

7) Timetable (including research and course deadlines)
8) Literature Cited (only literature used in the body of the proposal)
9) References or working bibliography (a list of pertinent references not necessarily cited in your proposal)
THE PROPOSAL PRESENTATION

Prepare a fifteen minute oral presentation on your proposal. Present a brief summary of your project to your peers, your advisory committee and faculty. Your presentation should include a discussion of the hypothesis/question, importance or significance of your work, objectives, review of previous investigations and methods. In other words, your speech is the body of your proposal. The purpose of the presentation is to inform members of SALRM of your topic area and provide a forum for sharing ideas, methods, and sources of information that might help you succeed with your project.

ANNOTATED BIBLIOGRAPHY

Prepare a typed, annotated bibliography with a minimum of 15 references (more references means a higher grade) that you will be using as supporting material for your thesis. At least 8 of the references must be from primary sources. A primary source includes journals, proceedings, technical notes, and books in which original data are presented. It does not include reviews, surveys, and analyses written by other scientists who may have reviewed many primary sources in their book or paper. You must attach a copy of the article title page (first page of the article) of each primary source to the back of your annotated bibliography.

Two of the minimum 15 sources must be historical references published before 1975. Two others must be recent articles published within the past three years. The remaining references can be any year. Popular articles are not acceptable. References from professional publications, journals, books, theses, Internet sources and related materials must be cited appropriately using the format outlined in Appendix 4.

The citation must be followed by a short paragraph, outline or notes describing how the article will be important to your research. Annotations are notes, not necessarily in complete sentence form, that are reminders of information you want to use in your paper. They can be complete quotations, bits of data, an outline of methods, important conclusions, whatever you find that might be relevant to your project. Below are some examples of an annotated bibliography.


1973 subsistence survey of Yukon-Porcupine villages

good map on pg 10

Annual harvest of berries- 9000 pounds

annual harvest of wild vegetables - 200 pounds

cranberries = 90% of the berries


The medium for tissue culture is outlined in Chapter 3, pg 14.

protocol changes= pH change from 7.5 to 6.5

culture time changed from 6 weeks to 10 weeks

growing temperature = 21C, not 15C

good discussion of tissue culture procedures, pg 45
Carter, F. 1976. The education of Little Tree. Univ. of New Mexico Press, Albuquerque, NM.

"It is The Way," he said softly. "Take only what ye need. When ye take a deer, do not take the best. Take the smaller and the slower and then the deer will grow stronger and always give you meat." p. 9

This typed bibliography is due on or before the 10th week of the semester. Attach the appropriate grading sheet to the front of the document (pg 22) when submitting the bibliography for a grade.

**THE SENIOR THESIS**

Two copies of your thesis will be graded: a draft and a final thesis. You may submit as many drafts as necessary to your advisor and committee prior to receiving a grade. Notify your advisor whether or not the draft is to be graded. After the thesis is graded, one unmarked (all corrections made) and unbound copy of the thesis must be submitted to the course coordinator. This copy will be placed in your permanent student file. Attach the appropriate grading sheet to the draft or final thesis when submitting each for a grade (pages 23 or 24). You will not receive a grade until this final copy and all grading sheets are on file with the course coordinator.

In addition to the hard copy, bring a computer disk to the main office (303 O'Neill) and give it to one of the administrative assistants. A copy of your thesis will be downloaded onto a permanent computer file. It must be formatted in Word, ClarisWorks, PageMaker or other common word processing/desktop publishing program and readable on a MAC or IBM-compatible computer. Please contact the office (474-7188) to make sure your software is readable. Your final thesis (with all corrections completed) will be stored permanently on disk for access by future students and faculty.

A portion or all of your thesis may be published by you and your advisor or committee at a later date. Selected abstracts will be published in *Agroborealis*, a publication of the School of Agriculture and Land Resources Management, and on the School's WEB page. You will receive full credit for anything that is published through the School. Abstracts will be published with the student as sole author and an acknowledgments of committee support. Publications resulting from the thesis will have the student as first author unless additional creative work or extensive rewrite is necessary for publication. Coauthors may include the major advisor, committee members, and any person who contributed substantially to the creative nature of the thesis.

When you hand in your thesis on disk, you will be asked to sign a "Permission to Publish" form (Appendix 5). This will allow the School to publish your abstract or for your major advisor to help you format your thesis for further publication. Please include an address and telephone number in case your thesis or a portion of it will be published at a later date. You will receive credit for ALL publications resulting from your thesis, and this information will be used to contact you after you graduate.

**THESIS STYLE**

Refer to Appendix 4 and workshop notes for information on how to cite literature. Discuss with your advisor how to handle footnotes, what abbreviations are acceptable for units of measure-
ment and other questions regarding writing style.

If you are interested in publishing your thesis, most agencies have guidelines dictating specific components and writing style. Your thesis may be written in the style outlined by a specific publication, but the style must be approved by your advisory committee. It is easier to write your thesis from the beginning in a particular style of the publication rather than rewriting your thesis later.

Most scientific journals review manuscript requirements in an "Instructions to Authors" section in the first issue published each year. These instructions usually are abbreviated, and will include an address for obtaining more information. Your thesis advisor can assist you in obtaining the appropriate instructions. Journals often have their own style manuals. Discuss with your advisor the appropriate style manual for the journal you have chosen.

THESIS FORMAT

The components listed below and on the next page are required for your thesis, and each must be clearly identified as section headings (in bold type).

1. Title page (use sample thesis title page on pg 16)
2. Abstract (on page by itself with heading)
3. Introduction including
   statement of question/objectives/hypothesis/problem
   importance or significance of research
   objectives
4. Literature Review
5. Methods
6. Results
7. Discussion and Conclusions (may be 2 separate sections)
8. Literature Cited

Title Page - The following information must be included on the title page: title, presentation statement, name of degree, your full name, names of your committee members, location, month and year. A sample title page is shown on page 16.

Abstract - In 150 words or less state the nature and content of the thesis in an abstract. This abstract should include the objectives/question/hypothesis of the study, an overview of the methods, the results and conclusions. It does not include any literature citations because it is work that you have done, not other people. This part of the thesis is often the most difficult to write. It is hard to condense your entire thesis into 150 words. Although the abstract contains small portions of your introduction, results, etc., these components do not normally follow in the same order as your thesis. Sometimes a single sentence may contain introduction, methods and objectives. Another might contain results and methods. On the next page are two examples of abstracts that give you an idea of how they are constructed to fit all your ideas in 150 words or less. Some people find it handy to use a worksheet to construct an abstract so that no essential components are left out. A sample worksheet may be found in Appendix 6.
Abstract Example 1

Introduction

Lingonberries from eight geographically-widespread selections were propagated by microshoots from tissue culture and conventional stem cuttings. Rooted plants were evaluated after two growth cycles to compare rhizome and daughter shoot production among selections and between propagation methods. Sixty percent or fewer of the plants from all selections produced rhizomes when propagated by conventional stem cuttings. Rhizome production among selections from microshoot propagation varied from 100 percent to zero. Overall, propagation by tissue culture produced the greatest number and biomass of rhizome and daughter shoots. However, significant variation among selections highlights the importance of evaluating individual clones in breeding programs for the ability to produce rhizomes rapidly from tissue culture. (110 words)

Methods

Objectives

Results

Conclusion

Abstract Example 2

Introduction

Current economic situations such as lumber mill closures in southeast Alaska have stimulated interest in commercial development of secondary forest products which includes resources other than wood pulp and saw logs. Twenty native species were identified as potential secondary forest products based on a score of their combined economic value and abundance throughout southeast Alaska. Details about the potential uses, ecological requirements, propagation and management related to the marketable attributes provided the foundation for scoring. Eleven of the 20 species were useful in wild berry markets, while six species could provide floral products. One species had value both as a floral product and tree seedling production for revegetation. Two of the top 20 species had uses as botanicals. There is substantial potential for development of secondary forest products in southeast Alaska primarily through wild berry harvesting.

Methods

Objectives

Discussion/conclusions

Results
Introduction, literature review, methods, results, discussion and conclusions - These sections contain the text of the thesis. There are no page requirements. Refer to the required text and notes from the workshops for the content of each of these sections. All figures and tables should be discussed in the text and should be located on a separate page immediately following their first mention in the text. They should be numbered consecutively, and an appropriate title should be included above each.

Photographs reproduced on a standard 8 1/2 x 11 inch sheet of paper or photocopied directly onto typing paper may be included. Small photographs may be dry mounted (not glued) for inclusion in the thesis.

Literature Cited - Only references cited and/or discussed in the thesis should be listed in the literature cited section. Refer to Appendix 4 and discuss with your advisor the appropriate methods of citation for books, periodicals, etc.

Optional sections - An acknowledgments section is optional in the senior thesis, but may be appropriate if you wish to acknowledge a funding agency or the assistance of an individual or your committee in developing your thesis. It should be located on a separate page just after the title page. It does not get graded, and should appear only in the final copy of your thesis.

An appendix may be included if supporting information such as a survey document are a necessary component of your thesis. All appendices should be titled and referred to as Appendix A, B, or Appendix 1, 2, etc. in the text. The appendix should be the last section of the thesis.

Margins - Provide a one-inch margin on the top, bottom and right side of the page for all text pages, figures and tables. The left margin should be 1 1/2 inches to permit binding.

Page numbers and spacing - All pages except the title page MUST be numbered. Numbers should occur within the margins listed above. All text should be double spaced except for the titles of figures and tables. Long quotes in block format and footnotes should be single spaced.

Paper and printing - The final thesis should be typewritten on one side of the paper only on white typing paper. Any simple, non-script font, 12-point size or larger is acceptable. Any dot matrix printer, inkjet printer, laser printer or typewriter may be used as long as the thesis is easily readable and "letter quality".

Spelling and Grammar - Your thesis will be evaluated both on content and on your written communication skills. Your thesis advisor, the advisory committee and the coordinator will reject any draft or final thesis that has not been edited for spelling, punctuation and grammatical errors. Many books have been written on "How to Write" and on the correct use of English. They are available in the bookstore and the Rasmussen Library. Some titles that have been especially useful are listed below. In addition, visit the UAF Writing Center. The tutors can provide invaluable assistance in editing and writing. Most assistants in the writing center know a particular style such as MLA. Make sure you take a copy of a style manual or this handbook to ensure they understand the style you are working with.
THESIS PRESENTATION

Within the 10-14th week of the second semester, you will present your thesis to the faculty and your peers. You will give a 25-minute formal presentation (plus 5 minutes for questions) that will include a short summary of your objectives, methods, results and conclusions. Your presentation must include visual aids such as slides, overheads, a video, poster, etc. Your presentation will not be acceptable without these visual aids. This presentation is a formal university seminar. It should be planned, organized and delivered with as much care as it takes to write the thesis. The audience may consist of all faculty, your student peers, guest lecturers and scientists, agency personnel and other members of the university community.
SUMMARY OF REQUIRED PAPERS

FIRST SEMESTER
1) Committee Meeting Report - one copy with original signatures to main office
2) Topic description - one copy each for advisor and committee members and one unmarked, ungraded copy to coordinator
3) Draft proposal - one copy each for advisor and committee members
4) Final proposal - one copy each for advisor and committee members and one unmarked, ungraded copy to coordinator
5) Annotated bibliography - one copy for advisor and committee members and one unmarked, ungraded copy to coordinator

SECOND SEMESTER
1) Committee Meeting Report - one copy with original signatures to main office
2) Draft thesis - one copy each for advisor and committee members
3) Final thesis - one copy each for advisor and committee members
   - one unmarked and unbound copy to coordinator

ROUTING PROCEDURE FOR ALL PAPERS
1. Make the appropriate number of copies for each member of the committee and coordinator.

2. Attach the appropriate grading sheet to the top of each copy and hand deliver to each committee member. Make sure the grading sheet is stapled to the TOP of each paper to be graded.

3. Faculty will return all grade sheets to the secretary who will make two copies
   1. Original is returned to the student
   2. One copy goes to the advisor
   3. One copy goes to the coordinator

4. You will receive all grades and announcements in a folder with your name on it located near the outgoing mail table in 303 O'Neill. The file boxes are hanging on the wall.

5. If a deadline has passed and you have not received a grade:
   1. Ask the secretary if it is in a file to be copied,
   2. Ask the faculty committee members directly.
   3. Seek help from the course coordinator.
APPENDIX 1
Sample title page for proposal and thesis

ENVIRONMENTAL EDUCATION LEGISLATION AND ITS IMPACT ON ALASKA SECONDARY ENVIRONMENTAL EDUCATION PROGRAMS

A

SENIOR THESIS

Presented to the Faculty
of the
School of Agriculture and Land Resources Management
University of Alaska Fairbanks
and
The Senior Thesis Committee:
D.K. Holmes, Chair
J.P. Carpenter
I.M. Carone

in partial fulfillment of the requirements
for the degree of

BACHELOR OF SCIENCE
in
NATURAL RESOURCES MANAGEMENT
RESOURCES OPTION

by

Jane Elizabeth Doe

Fairbanks, Alaska

May, 2000
TOPIC DESCRIPTION - SENIOR THESIS
(please type all information)

Name:

Date:

Preliminary title:

Description: In 150 words or less, describe the topic you propose to explore for your senior thesis. Return 4 copies of this form, one to each of your committee members and one to the course coordinator. Topic description = 25 points.

_____ includes objectives
_____ includes approach
_____ includes anticipated results
_____ includes relevance to NRM (Who will benefit?)
_____ free of spelling and grammatical errors
_____ idea is clear and feasible under time and money constraints
_____ potential for independent, creative thought (hypothesis, question well stated)

Points (25 possible)______________________ Reviewer signature________________________
(Reviewer: return the graded form to 303 O'Neill)
Mandatory Committee Meetings
(beginning of each semester)

The committee for ___________________________ met on ________________
(student's name printed)

The following individuals have agreed to serve (or continue serving) on the committee and support
the student's thesis research. Second semester students are making sufficient progress to permit
scheduling thesis presentation dates.

Must be signed legibly by all committee members:

Advisor signature ___________________________ Printed__________________________

Committee members:

Signature__________________________ Printed__________________________

Signature__________________________ Printed__________________________

Signature__________________________ Printed__________________________

Anticipated completion date__________________________
DRAFT PROPOSAL GRADING SHEET

The attached is the first draft of the thesis proposal for (student name)____________________. Please review this draft and make comments either on this sheet or directly on the proposal. You may contact the student directly to discuss your concerns or obtain clarification. Grades must be returned to the student one week after you receive this form.

Comments on proposal content:

_____ complete title page
_____ clear statement of hypothesis/question/objectives
_____ pertinent literature citations using appropriate citation style
_____ well-organized methods that support question
_____ reasonable, complete timeline
_____ includes both literature cited and references list

Comments on writing skills:

_____ ideas clearly stated in a well-organized, logical manner
_____ easy to read and understand
_____ free of factual errors
_____ free of grammatical, spelling and punctuation errors
_____ language is appropriate for the topic and thesis
_____ follows thesis format
_____ not wordy, no extraneous material

Points for the draft proposal

Points for content (45) .................................................................
Points for written communication skills (45) ................................
Points for adherence to format (10) ...........................................
Total points (100 possible)..........................................................
Deductions for spelling and grammatical errors (1/2 point each) ....
Deduction for late paper (10 points) ...........................................
Final Points .............................................................................

Reviewer signature and date ..................................................................

(Return all graded sheets to 303 O'Neill)
FINAL PROPOSAL GRADING SHEET

The attached is the final copy of the thesis proposal for ______________________________. Please review this proposal and make comments either on this sheet or directly on the proposal. You may contact the student directly to discuss your concerns or obtain clarification. Grades must be returned to the student one week after you receive this form. Return all grade sheets to the secretary in 309 O'Neill.

Comments on proposal content:

___ complete title page
___ clear statement of hypothesis/question/objectives
___ pertinent literature citations using appropriate citation style
___ well-organized methods that support question
___ reasonable, complete timeline
___ includes both literature cited and references list
___ content changed to reflect committee suggestions and comments

Comments on writing skills:

___ ideas clearly stated in a well-organized, logical manner
___ easy to read and understand
___ free of factual errors
___ free of grammatical, spelling and punctuation errors
___ language is appropriate for the topic and thesis
___ follows proposal format
___ not wordy, no extraneous material

Points for the final proposal

Points for content (45) ................................................................. ____
Points for written communication skills (45) ................................. ____
Points for adherence to format (10) ............................................ ____
Total points (100 possible) ....................................................... ____
Deductions for spelling and grammatical errors (1/2 point each) ....... ____
Deduction for late paper (10 points) ......................................... ____
Final points ........................................................................... ____

Reviewer signature and date _________________________________
PROPOSAL PRESENTATION GRADING SHEET

Evaluation sheet for ______________________________

Comments on proposal presentation content:

Comments on oral presentation skills:

_____ hypothesis, objectives, project significance and anticipated results clearly stated
_____ methods concise and easily understandable
_____ logical flow of ideas, well-organized speech
_____ language was appropriate to the audience and topic
_____ student spoke directly, clearly, in a conversational manner
_____ student spoke loudly and effectively
_____ student spoke within the 15-minute time limit

Points for Proposal Presentation

Content (50) .................................................................: _________
Oral Communication Skills (50) ............................................: _________
Total Points (100 possible) ................................................: _________

Reviewer signature and date: ___________________________________________
Attached is the annotated bibliography for __________________________ Use the checklist below as a guideline for grading the paper.

_____ bibliography is typewritten
_____ citation format follows the accepted formats in Appendix 4
_____ free of spelling errors
_____ references are appropriate to the research project
_____ annotations show good connection between article and student’s project
_____ includes 8 primary sources (contains original data, not reviews)
_____ includes attached title page for all eight primary sources
_____ includes two historical references pre-1975
_____ includes two references from the past 3 years
_____ includes professional, not popular references
_____ minimum 15 references (more references means higher grade)

Comments on content or suggestions for further literature search:

Points for Annotated Bibliography
Content (40) .................................................................
Adherence to format (10) ..............................................
Total Points (50 possible) ...........................................
Deductions for fewer than 15 references (-5 each) ..........
Deductions for late paper (-10) ....................................
Final Points .............................................................

Reviewer ___________________________ Date ___________________________
DRAFT THESIS GRADING SHEET

The attached is the first draft of the senior thesis for _________________________________.
Please review this draft and make comments either on this sheet or directly on the proposal. You may contact the student directly to discuss your concerns or obtain clarification. Grades must be returned to the student one week after you receive this form.

Comments on thesis content:

_____ all components present: title page, abstract, introduction, literature review, methods, results, discussion/conclusions, literature cited
_____ clear statement of hypothesis/question/objectives
_____ pertinent literature citations using appropriate citation style
_____ well-organized methods that support question
_____ discussion/conclusions show creativity, thorough analysis, integration of previous work with current findings, clear understanding of project

Comments on writing skills:

_____ ideas clearly stated in a well-organized, logical manner
_____ easy to read and understand
_____ free of factual errors
_____ free of grammatical, spelling and punctuation errors
_____ language is appropriate for the topic and thesis
_____ follows thesis format
_____ not wordy, no extraneous material

Points for the draft thesis

Points for content (65) .................................................................
Points for written communication skills (65) ................................
Points for adherence to format (20) ...........................................
Total points (150 possible) .......................................................
Deductions for spelling and grammatical errors (-1/2 point each) ..
Deduction for late paper (-25 points) ........................................
Final points ............................................................................

Reviewer signature and date

______________________________________________________________
SENIOR THESIS FINAL GRADING SHEET

The attached is the final senior thesis for _______________________________. Please review this thesis and make comments either on this sheet or directly on the proposal. You may contact the student directly to discuss your concerns or obtain clarification. Grades must be returned to the student one week after you receive this form.

Comments on thesis content:

_____ all components present: title page, abstract, introduction, literature review, methods, results, discussion/conclusions, literature cited
_____ clear statement of hypothesis/question/objectives
_____ pertinent literature citations using appropriate citation style
_____ well-organized methods that support question
_____ discussion/conclusions show creativity, thorough analysis, integration of previous work with current findings, clear understanding of project
_____ substantive changes made from draft to reflect committee comments, suggestions

Comments on writing skills:

_____ ideas clearly stated in a well-organized, logical manner
_____ easy to read and understand
_____ free of factual errors
_____ free of grammatical, spelling and punctuation errors
_____ language is appropriate for the topic and thesis
_____ follows thesis format
_____ not wordy, no extraneous material

Points for the senior thesis

Points for content (65) .................................................................
Points for written communication skills (65) ...........................................
Points for adherence to format (20) ...................................................
Total points (150 possible) ............................................................
Deductions for spelling and grammatical errors (-1/2 point each) ............
Deduction for late paper (-25 points) ..........................................
Final Points ..................................................................................

Reviewer signature and date .............................................................
THESIS PRESENTATION GRADING SHEET

Evaluation sheet for ____________________________________________________________

Comments on thesis presentation content:

Comments on oral presentation skills:

_____ hypothesis, objectives, project significance and anticipated results clearly stated
_____ methods concise and easily understandable
_____ logical flow of ideas, well-organized speech
_____ language was appropriate to the audience and topic
_____ student spoke directly, clearly, in a conversational manner
_____ student spoke loudly and effectively
_____ student spoke within the time limit

Comments on supporting materials (posters/slides, video, etc.)

_____ materials were appropriate to the thesis
_____ message was clearly presented in a well-organized, logical order
_____ materials truly supported the presentation (no extraneous material)
_____ writing was large, legible and easily understood
_____ materials did not detract from or overwhelm the message
_____ materials were free from grammatical, spelling and punctuation errors

Points for Proposal Presentation

Content (40) ..............................................................................................................
Oral Communication Skills (30) ...........................................................................
Supporting Materials (30) ....................................................................................
Total Points (100 possible) ...................................................................................

Reviewer signature and date _____________________________________________________
APPENDIX 2

FACULTY OF THE SCHOOL OF AGRICULTURE AND LAND RESOURCES MANAGEMENT

DEPARTMENT OF FOREST SCIENCES

Dr. John Alden 319 O'Neill (7652) Forest genetics.
Dr. John D. Fox, Jr. 328 O'Neill (7084) Wildland hydrology, forestry, modeling and simulation, environmental ethics
Dr. Glenn P. Juday 182D Arctic Health (6717) Forest ecology, forest structure, tree ring analysis, biological diversity, geologic and landscape control of diversity, natural area policy and management.
Dr. Ed Packee 161 Arctic Health (5070) Forestry, silviculture, forest management, forest growth and yield, forest products.
Dr. Scott Rupp. 339 O'Neill (7535) forest measurements, modeling
Dr. David Valentine. 313 O'Neill (7614) Forest soils, nutrient cycling, global climate change, trace gas biogeochemistry.
Dr. John Yarie 182F Arctic Health (5650) Forest ecosystem ecology, ecosystem modeling, global modeling.

DEPARTMENT OF PLANT, ANIMAL AND SOIL SCIENCES (Fairbanks faculty)

Mr. Greg Finstad 180 Arctic Health (6055) Reindeer Research
Dr. Pat Holloway 182A Arctic Health (5651) Horticulture, propagation and cultivation of Alaska native plants, cultivation of fruit crops, landscape ornamentals and wildflowers
Dr. Meriam Karlsson 240 Arctic Health (7005) Horticulture, environmental physiology, flower initiation, effects of photoperiod and temperature on flowering, greenhouse crops production.
Dr. Jenifer McBeath 230 O'Neill (7431) Plant pathology, biotechnology
Dr. Milan Shipka 347 O'Neill (7429) Animal science, animal nutrition and reproduction.
Dr. Steve Sparrow 316 O'Neill (7620) Soil microbiology, decomposition in soils, nitrogen cycling in soils, nitrogen fixation in plants.

(Palmer Faculty)
Dr. Don Carling (746-9470) Vegetable diseases, especially potatoes
Dr. Norman Harris (746-9450) Range management
Dr. Dot Helm (746-9472) Committee member only, soils, soil microbiology, mycorrhizae
Dr. Roseann Leiner (746-9450) Vegetable crops production, vegetable diseases
Dr. Allen Mitchell (746-9450) Soil-water-plant relationships in northern latitudes
Dr. Chien-Lu Ping (746-9462) Genesis and classification of cryogenic soils, extraction and fractionation, carbon cycling and global change

DEPARTMENT OF RESOURCES MANAGEMENT

Dr. Peter Fix 323 O'Neill (6926). Outdoor recreation management, human dimensions of natural resources, quantitative recreation research methods, recreation economics
Dr. Joshua Greenberg 332 O'Neill (7189) Resource economics, economic modeling, resource allocation
Dr. Elena Sparrow  317 O'Neill (7699) Natural Resources Education, soil microbiology
Dr. Sidney Stephens  321 O'Neill (7628) Natural Resources Education, GLOBE Program
Dr. Susan Todd  302 O'Neill (6930) natural resource planning, conflict resolution

DEPARTMENT OF GEOGRAPHY

Dr. Kenneth Barrick  322 O'Neill (6641) Geography
Dr. Cary DeWitt  329 O'Neill (7141) Geography

BOREAL ECOLOGY COOPERATIVE RESEARCH UNIT

Dr. Marilyn Walker  193 Arctic Health (2424) Forest Ecology
Dr. Trish Wurtz  193 Arctic Health (5994) Forest Ecology

USDA AGRICULTURAL RESEARCH SERVICE

Dr. Dennis Fielding  313 O'Neill (2439) Entomology
Dr. Sultan Begna  321 O'Neill (7628) Entomology
APPENDIX 3
COMPLETED SENIOR THERSES

1993  Hammond, Timothy. Use of GIS to determine relative cost of access zones for sections of the Tanana Valley State Forest. Advisor: Dr. John Yarie

1994  Pigors, Jeanne. The effect of composting on weed seed germination. Advisor, Dr. Charles Knight

1995  Sampson, Jennifer. The Arctic Circle site plan and its relation to the Bureau of Land Management planning process. Advisors, Drs. Susan Todd and Alan Jubenville

Grover, Raymond. Identification of alkaloids in Alaskan Lupinus spp. with reference to crooked calf's disease. Advisors, Drs. Lyle Renecker and Fred Husby

Hollingsworth, Jamie. Survival and Growth of Late-summer Planted Conifers in Interior Alaska. Advisor, Dr. Ed Packee.

1996  Russo, Robert. Salmon oil as a moose deterrent in Alaska gardens. Advisor, Dr. Charles Knight

Adams, Scott. A preliminary analysis of solid waste and wastewater pollution in the Fairbanks North Star Borough. Advisor, Dr. Susan Todd

Barnard, Collin. Polyphosphate sequestrants as a source of supplemental phosphorus. Advisor: Dr. Charlie Knight

Burke, Toby. The Bryophyte and Lichen Flora of Interior Alaska's Boreal Forests with Reference to Species at Risk from Forest Management in areas with Similar Flora. Advisor: Dr. Glenn Judy.

Gilby, Stephanie. Forage Quality for ensiled fireweed and bluejoint. Advisor: Dr. Mike Panciera

Kern, Christine. Canola Residue and its Potential as a Natural Herbicide. Advisor, Dr. Charlie Knight.

1997  Sarringer, DeeDee. Comparison of Canadian and U.S. wetland delineation systems. Advisor: Dr. Charlie Knight


Charlton, Brian. Growth of paper birch following an early winter snowfall. Dr. David Valentine

Clark, Stacy. Can Outdoor Wilderness Programs Change the Attitudes and Behaviors of Rural High School Students? Advisor: Dr. Carol Lewis

Downing, Jason. Economically Useful Plants for Southeast Alaska. Advisor: Dr. Pat Holloway


Janak, Chris. Mapping Spruce-lichen Sites from Landsat-TM Data. Advisor: Dr. Dave Verblya

Johnson, Erik. A recreational resource for Internet users interested in the Matanuska-Susitna Valley. Advisor: Dr. Alan Jubenville


Lown, Samantha. Irrigation and Radial Growth of White Spruce in Fairbanks. Advisor: Dr. Glen Judy

Meumann, Jacqueline. Effectiveness of Fairbanks North Star Borough School District Third Grade Water Science Curriculum as Environmental Education. Advisor: Dr. John Fox.


Peterson, Eric. The availability of fertilizer nitrogen for turfgrasses in Fairbanks, Alaska. Advisor: Dr. Charlie Knight

Pigors, Rochelle. The Fairbanks Agricultural and Forestry Experiment Station- First Ten Years. Advisor Drs. Pat Holloway and Terrence Cole

Swor, Rhonda. Comparison of Huskless Barley and Naked Oats in Early Weaned Pig Diets in Interior, Alaska. Advisor: Dr. Fred Husby

Voshell, Emily. Environmental Factors Affecting the Nutrient Levels of Carex. Advisor: Dr. Steve Sparrow

Wickstrom, Cheryl. Landscape Plant Materials for Fire Resistance. Advisor: Dr. Mike Panciera

1998  Adkins, Dwight. Sulfonyleurea herbicide persistence in dry, cold northern soils. Advisor: Dr. Charles Knight

Drohan, Anthony. Evaluation of two Sanguisorba species for domestication. Advisor: Dr. Pat Holloway

Henderson, Jennifer. A law enforcement option in the Natural Resources Management Degree Program. Advisor: Dr. Joshua Greenberg

Herman, Janel. Cutthroat trout populations estimates in Auke Lake, Alaska. Advisor: Dr. Carol Lewis

Holcomb, Shawn. Stalk strength and disease susceptibility of barley following treatment of potassium to soil. Advisor: Dr. Charles Knight
Mihailev, Mihail. Predicting aspen versus birch distribution based on computed potential radiation. Advisor: Dr. Dave Verhyla.

Osborn, S. Hidden stem decay in white spruce (Picea glauca) in the Tanana Valley Watershed, Interior Alaska. Advisor: Dr. Glen Juday

Payne, Anthony. Low altitude oblique videography for documenting features along interior Alaska rivers. Advisor: Dr. Alan Jubenville

Soplanda, Jerry. Hazardous Materials Emphasis for Natural Resources Management. Advisor: Dr. Carol Lewis

Trillohose, Suzanne. The potential for reducing and reusing the paper component of the solid waste stream at UAF. Advisor: Dr. Susan Todd

White, Jenna. White Spruce volume tables for the Tanana Valley, Alaska. Advisor: Dr. Edmund Packee

Atchison, Anna. Analysis of the School of Agriculture and Land Resources Management strategic planning survey. Advisor: Dr. Susan Todd

Atwood, Nicole. Potential Allelopathic Effects of Birch Trees on Garden Flowers. Advisor: Dr. Charlie Knight

Bushong, Kelly. Determination of honeybee level of productivity as affected by ambient air temperature. Advisor: Dr. Charlie Knight

Buzby, Joshua. Taper of high and low elevation white spruce in interior Alaska. Advisor: Dr. Ed Packee

Johnson, Melissa. Soil respiration potential as a function of soil temperature. Advisor: Dr. Dave Valentine

McMillen, Thomas. Seed dispersal and viability in a high cone production year at Bonanza Creek Experimental Forest, Alaska. Advisor: Dr. Glen Juday

Lauder, Timothy. Legal implications of proposed wood bison introduction to the Yukon Flats Area, Alaska.

Bingham, Marcus. Soil compaction, carbon content, and O horizon thickness along the Stampede Pass Trail. Advisor: Dr. Dave Valentine

Crowley, Dane. Survey of public support of clear-cut logging in the Matanuska-Susitna Valley. Advisor: Dr. Allen Mitchell

Davis, Amy (Nikki). Potato yield and quality as influenced by cultivar, harvest date and vine killing. Advisor: Dr. Charlie Knight

Jordan, Dan. Canola oil mulches and soil water evaporation. Advisor: Dr. Charlie Knight

Richard, Marylou. Stabilized biosolids as a safe and effective growth medium for vegetables in Fairbanks, Alaska. Advisor: Dr. Steve Sparrow

Wooters, John. Germination and Transplant Age of Five Alaska Wildflowers. Advisor: Dr. Pat Holloway

Arseneau, Jen. The human dimensions of protected area management in the circumpolar arctic. University of Lapland, Finland.

Baraclough, Mike. Advisor: Effects of M-44 cyanide guns to control coyote predation on newborn (bovine) calves, Dr. Milan Shipka

DeWitt, Adia. Effects of hands on activities in middle school students' interest in science. Advisor: Dr. Elena Sparrow.

McCabe, Jon. Inversion of clear bottles to increase temperatures of cold soils in interior, Alaska. Advisor: Dr. Charlie Knight

Strom, Samantha. Recent sockeye salmon run failures in Bristol Bay. The impact of high seas fishing. Advisor: Dr. Carol Lewis

Terry, Tracy. Shoot proliferation in response to light intensity and photoperiod of in vitro propagated Vaccinium vitis-idaea

True, Nick. Effects of spacing tree stands on damage caused by bark beetles. Advisor: Dr. Ed Packee

Bosveld, Craig. Effect of space on the early stem diameter of white spruce. Advisor: Dr. Ed Packee

Dunham, Kara. Determining differences of two barley based diets on body mass and intake rates of pregnant captive reindeer during winter. Advisor; Mr. Greg Finstad

Fortunato, Mark. Birch bark use in Alaska. Advisor: Dr. Ed Packee

Kato, Nayouki. Perspectives in Denali's West Buttress human waste management. Advisor; Dr. Josh Greenberg

Klingman, Marie. Production and transportation considerations in the export of peonies from Fairbanks, Alaska. Advisor; Dr. Josh Greenberg

Kolberg, Tara. Morphology and yield of three strawberry types in response to photoperiod. Advisor: Dr. Meriam Karlsos
Liljeblad, Adam. Impacts of recreational use on arctic wilderness lakeshore vegetation, Brooks Range, Alaska. Advisor: Dr. Ed Packee

McArthur, Jeff. Gall aphids on Alaska white spruce. Advisor: Dr. Ed Packee

Smith, Glenda. Sclerotia production by Sclerotinia sclerotiorum on carrots and effects of Coniothyrium minitans on apothecia production. Advisor: Dr. Roseann Leiner

Tachibana, Miyuki. A case study of a winter interpretive program at the University of Alaska Museum. Advisor: Dr. Josh Greenberg

Winslow, Steve. Role of soil disturbance, charcoal and nitrogen on white spruce along the Kugururok River, Alaska. Advisor: Dr. Glen Juday
APPENDIX 4
LITERATURE CITATION

There are many different ways to cite literature in natural resources management. Publishers require a certain style and expect strict adherence to every detail (right down to the last period) or the paper may be rejected. The citation style outlined below should be used in all papers written for Natural Resources Management classes (including Senior Thesis) unless the instructor provides an alternative style manual. The style shown below follows the Harvard system of citation.

General Rules

1. List only references that have been published. Use footnotes in the body of the paper for unpublished papers and personal communications.

2. List citations alphabetically (letter by letter, not word by word) by the names of the authors, then by year. For instance:

   Jonas, K. 1998....
   Jones, K. 1975...
   Karlen, P. 1983...

3. If you are citing several works by the same author written in the same year, add a lowercase letter to the date both in the text and in the literature citation. For instance:

   Johnson, P. 1998a...
   Johnson, P. 1998b...

4. If you are citing several works by the same author written in different years, the oldest paper comes first. Multiple authors follow single authors. For instance:

   Harlan, P. 1973...
   Harlan, P. 1978...
   Harlan, P. and C. Taylor. 1972...

5. If you don't know the author, do not use "Anonymous" as the author. Instead, give the name of the publisher or the organization responsible for the work. For instance:

   World Health Organization. 1992....
   Alaska Cooperative Extension. 1924...
6. All authors must be listed in the same order as the original publication. The first author is listed last name first followed by initials, while all subsequent authors are listed with initials first. For instance:

   Cronquist, A., J. Gleason and P. Hartford.

7. Do not italicize or capitalize all words in a title. Capitalize only proper names. Never abbreviate titles. For instance:

   Harlan, C. 1997. The choice between two rivers....

   Jacobs, P. and J. Skelton. 1943. A resource tragedy in Africa....

8. Spell out publishers names, and give complete information for the publisher's location.

   Prentice-Hall, Inc., Englewood Cliffs, NJ.

9. Publication titles are capitalized and may be abbreviated except for one-word titles. For instance:

   Can. J. Bot.  OR  Canadian Journal of Botany


   Ecology  NOT  Ecol.

   Science  NOT  Sci.

10. Use only arabic numerals when reporting volume and issue numbers even if the publication lists volumes in Roman numerals. The volume, issue number and page number should be written as shown below with no spaces. The volume is followed by issue number in parentheses and followed by a colon. Page numbers immediately follow the colon. Pages should be written out in full.

METHODS OF CITING LITERATURE IN THE TEXT

Use the following format when citing references in the body of the text:

**One author:** Jones (1992) conducted research on salt tolerance ....
(Author name is part of the sentence) OR

Research on salt tolerance in Michigan (Jones 1992) showed that.....

**Two authors:** Jones and Perkins (1995) - (authors names part of the sentence)
OR

(Jones and Perkins 1995) - (authors names not part of the sentence)

**Three or more authors:**
Jones et al. (1995) (authors names part of the sentence) OR

(Jones et al. 1995) (authors names not part of the sentence)

**Two or more references cited at one time:**

(Jones 1994, Perkins 1995) oldest reference comes first

Sample:

Crowberry is a low, creeping evergreen shrub that forms dense mats to 15 cm tall. The leaves are crowded in a whorl of four or occur alternately (Hall 1995). They are commonly 3-7 mm long and are minutely glandular. The underside has a distinct groove. The flowers appear crimson and inconspicuous (Pajar and Mackinnon 1994). At times male and female flowers appear on separate plants. The fruit is a juicy and black, berrylike drupe (Jones et al. 1985, Schofield 1989). Alaska Wild Berry Products (Eden, Pers. Comm. 19961) purchased crowberry fruits from wild berry harvesters for $2.20 per kg. Carlson (1992) noted that the demand for this berry was declining in recent years because of the availability of more abundant wild berries.

---

1Letter dated 25 April 1996 from Peter Eden, Owner, Alaska Wild Berry Products, Homer, AK.
LITERATURE CITATION STYLE

The publication types listed below are the most commonly quoted in papers. Many other publication types exist. If you have questions about citation style, please see your thesis advisor BEFORE you hand in your rough draft.

Single author in journal:
(Most journal titles may be abbreviated (i.e. Can J. Bot.) See advisor for appropriate abbreviation.)

Multiple authors in journal:

Circulars, bulletins, numbered reports: (Be aware that there are a lot of journals that have the word bulletin in the title (i.e. Bulletin of the Torrey Botanical Society). These are referenced as journals, not bulletins because they have volume and issue numbers. Bulletins and circulars are usually one-of-a-kind publications issued as a series by a government or public agency. Bulletins do not have volume and issue numbers. Rather they have bulletin numbers that are unique to one publication).

Book:
(list the edition if known)

Editor of Book, no author:

Abstract Only: (Information quoted in your paper is taken from an abstract, not the main article).

English summary: (Information quoted in your paper is from an English summary, not an abstract or the main article).

Chapter in Book: (This is used when chapters have different authors, and the book has an editor or compiler. If one author wrote the entire book, cite the entire book, not just one chapter).

Thesis:
Author is agency, business, etc.:

Newspaper article:

Translation:

No date:

if you can make an educated guess:

Internet
Individual works:

CD-ROM

Internet Newspaper Articles:

E-mail:
Johns, K. (kjohns@moose.edu)1992. Review of literature – land planning in Alaska. E-mail to P. Mason (pmason@alcatraz.com). 5 Jan.
Appendix 5
Permission to Publish

Portions or all of a senior thesis may be published by the student and his/her advisor along with committee members and others who contributed substantially to the creative work. Student authors will receive full credit and/or acknowledgement for all of their creative work. The student shall be first author of any published work resulting from the thesis unless substantial rewriting is necessary and/or additional original data are added to the point where the student is no longer the primary contributor to the publication. Selected abstracts will be published by the School of Agriculture and Land Resources Management as part of the research review in Agroborealis. Students will be sole author of abstracts, but committee input will be acknowledged.

In order to facilitate the dissemination of information from student theses, students will bring a computer disk copy of their thesis to the main office in 309 O'Neil. By signing this form, the student gives permission for publication of abstracts and use of the thesis (with proper citation) as a reference work. Formal publication of all or part of the thesis will require joint authorship with the thesis advisor and others, with full knowledge of the student.

Please provide a good contact address and phone number (your own or a relative's or parent's address) in order to facilitate contact after you have graduated.

Name:

Contact Address:

Phone Number:

Signature:______________________________________________
Appendix 6

Abstract Worksheet Form

Describe your research project in a concise manner. The worksheet below allows you to order your thoughts and include all the information necessary for an informative abstract. Note: sections may be combined so that one sentence contains an introduction + methods, methods+hypothesis, etc. Word limit = 150

Introduction (What is this project about? Use key terms to describe your project, but don’t use citations):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Hypothesis or objectives (What is the specific question you wanted to answer?):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Methods (Very briefly explain how you fulfilled your objectives or tested your hypothesis. This section may be combined with introduction in the final abstract):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Results (What did you find when you conducted your experiment, survey, literature search, etc.?):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Discussion and Conclusions (How did you interpret your results? What conclusions did you draw? Why are your findings important?):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
APPENDIX D

COURSE EVALUATION FORMS
Instructional Assessment System
(IAS)

Note: The Instructional Assessment survey forms described below may be viewed in detail at the following web address: http://www.washington.edu/oea/iasforms.htm

Form Descriptions

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester</td>
<td>______</td>
</tr>
</tbody>
</table>

Quantity

FORM A is designed for small lecture/discussion courses. Items emphasize the clarity and quality of information transmitted, as well as the nature of the interaction between instructor and student. 
Note: This form will be used for all classes, other than lab sections, if no other form is selected by the instructor.

FORM B is designed for large lecture classes, with little or no in-class interaction between instructor and student. Items strongly emphasize the quality of course organization and information transmitted.

FORM C is designed for seminar discussion classes which include a minimal amount of formal lecturing by the instructor. The items emphasize quality of discussion as well as course organization and interest level.

FORM D is tailored to classes whose purpose is the teaching of problem-solving or heuristic methods. Clear explanations, dealing with the student's difficulties, and quality of problems are emphasized.

FORM E is designed for those classes which are skill oriented and in which students get "hands on" experiences related to future occupational demands. Such classes include clinical nursing, art studio, social-work field experience, etc.

FORM F is designed for quiz sections. These are usually taught by graduate teaching assistants, in conjunction with a lecture section taught by a regular faculty member. Items focus on the ability of the quiz section instructor to interact with students and provide clear and useful explanations.

FORM G is designed for use in large lecture classes (such as those in math) which rely heavily on homework problems and a textbook. Emphasis is on the instructor's ability to communicate with students, and the value of assigned problems and readings.

FORM H is designed for lab sections generally taught in conjunction with classes in the physical sciences. Items emphasize the instructor's ability to introduce meaningful questions, assist students, and deal with unexpected problems. 
Note: This form will be used for lab sections if no other form is selected by the instructor.

FORM I is designed to be used in distance learning (correspondence) courses. Items relate to the instructor's responsiveness and the quality of support material.

FORM J is designed to evaluate instruction provided through clinical experience rather than traditional academic coursework. Such courses are often found in the health professions or the arts. Items focus on the instructor's ability to provide information, stimulate learning, and demonstrate skills. (clinical or medical)

FORM K is designed for studio and design courses in which students work autonomously or in small groups to produce artistic, graphic, or other products. Items on this form emphasize student development of skills and effective instructor guidance and feedback.
FORM L is designed for use with English as a Second Language (ESL) courses and differs from other IAS forms in the simplicity of the language used, the layout of the form (clear separation of course and instructor items), the elimination of items 1-4 common to all other forms, and the inclusion of demographic items.

FORM X is designed to be used across all course types. It includes a reduced set of items relating to general educational processes and a unique set intended to assess educational outcomes.

The back of all IAS Forms (Forms A - J, and X) are identical and permit individual instructors to query students on any subject they think is appropriate to the course. Students can answer additional, instructor-generated questions on the back of the IAS form.

Yellow Comment Sheets solicit responses to four open-ended questions. Students are asked whether they found the course to be intellectually challenging, which aspects contributed most to learning, which detracted from learning, and what suggestions for improvement they might have.

IAS Online is the web-based analog of the Instructional Assessment System collecting and reporting student assessment of post-secondary courses through the Internet. A custom online database is created for each participating instructional program, allowing program staff to create, link and report evaluations for any number of courses. Users may select standard evaluation items or create new items unique to the course or instructional program. This is recommended for use for courses that are delivered primarily on-line. Contact Hild Peters at 474-5178, fhmp@uaf.edu, if interested.
Student Comments

Instructor ______________________ Course ___________ Section ___________ Date ________

Your handwritten comments in response to the following questions will be returned to the instructor after grades are turned in. We encourage you to respond to all questions as thoughtfully and constructively as possible. Your comments will be used by the instructor to improve the course. However, you are not required to answer any questions.

Was this class intellectually stimulating? Did it stretch your thinking?  Yes  No  Why or why not?

What aspects of this class contributed most to your learning?

What aspects of this class detracted from your learning?

What suggestions do you have for improving the class?

Please use the back of this sheet for any additional comments or to respond to additional questions. Thank you!
Instructor _______________________________ Course _______ Section _______ Date ____________

Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The course as a whole was:  
   Excellent Very Good Good Fair Poor Very Poor

2. The course content was:  
   O O O O O O

3. The instructor's contribution to the course was:  
   O O O O O O

4. The instructor's effectiveness in teaching the subject matter was:  
   O O O O O O

5. Course organization was:  
   O O O O O O

6. Clarity of instructor's voice was:  
   O O O O O O

7. Explanations by instructor were:  
   O O O O O O

8. Instructor's ability to present alternative explanations when needed was:  
   O O O O O O

9. Instructor's use of examples and illustrations was:  
   O O O O O O

10. Quality of questions or problems raised by instructor was:  
    O O O O O O

11. Student confidence in instructor's knowledge was:  
    O O O O O O

12. Instructor's enthusiasm was:  
    O O O O O O

13. Encouragement given students to express themselves was:  
    O O O O O O

14. Answers to student questions were:  
    O O O O O O

15. Availability of extra help when needed was:  
    O O O O O O

16. Use of class time was:  
    O O O O O O

17. Instructor's interest in whether students learned was:  
    O O O O O O

18. Amount you learned in the course was:  
    O O O O O O

19. Relevance and usefulness of course content were:  
    O O O O O O

20. Evaluative and grading techniques (tests, papers, etc.) were:  
    O O O O O O

21. Reasonableness of assigned work was:  
    O O O O O O

22. Clarity of student responsibilities and recognitions was:  
    O O O O O O

Relative to other college courses you have taken:

23. Do you expect your grade in this course to be:
    O Much Higher O Average O Much Lower

24. The intellectual challenge presented was:
    O O O O O O

25. The amount of effort you put into this course was:
    O O O O O O

26. The amount of effort to succeed in this course was:
    O O O O O O

27. Your involvement in this course (doing assignments, attending classes, etc.) was:
    O O O O O O

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?
   O Under 2 O 2 - 3 O 4 - 5 O 6 - 7 O 8 - 9 O 10 - 11 O 12 - 13 O 14 - 15 O 16 - 17 O 18 - 19 O 20 - 21 O 22 or more

29. From the total average hours above, how many do you consider were valuable in advancing your education?
   O Under 2 O 2 - 3 O 4 - 5 O 6 - 7 O 8 - 9 O 10 - 11 O 12 - 13 O 14 - 15 O 16 - 17 O 18 - 19 O 20 - 21 O 22 or more

30. What grade do you expect in this course?
    O A (3.9-4.0) O B (2.9-3.1) O C (1.9-2.1) O D (0.9-1.1) O Pass
    O A- (3.5-3.8) O B- (2.5-2.8) O C- (1.5-1.8) O D- (0.7-0.8) O Credit
    O B+ (3.2-3.4) O C+ (2.2-2.4) O D+ (1.2-1.4) O E (0.0) O No Credit

31. In regard to your academic program, is this course best described as:
    O In your major? O A distribution requirement? O An elective?
    O In your minor? O A program requirement? O Other?
**Course Evaluation Form**

Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The course as a whole was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

2. The course content was:  

3. The instructor's contribution to the course was: 

4. The instructor's effectiveness in teaching the subject matter was:  

5. Course organization was:  

6. Sequential presentation of concepts was:  

7. Explanations by instructor were:  

8. Instructor's ability to present alternative explanations when needed was:  

9. Instructor's use of examples and illustrations was:  

10. Instructor's enhancement of student interest in the material was:  

11. Student confidence in instructor's knowledge was:  

12. Instructor's enthusiasm was:  

13. Clarity of course objectives was:  

14. Interest level of class sessions was:  

15. Availability of extra help when needed was:  

16. Use of class time was:  

17. Instructor's interest in whether students learned was:  

18. Amount you learned in the course was:  

19. Relevance and usefulness of course content was:  

20. Evaluative and grading techniques (class papers, projects, etc.) were:  

21. Reasonableness of assigned work was:  

22. Clarity of student responsibilities and requirements was:  

**Relative to other college courses you have taken:**

23. Do you expect your grade in this course to be:  
   - Much Higher  
   - Higher  
   - Average  
   - Lower  
   - Much Lower

24. The intellectual challenge presented was:  

25. The amount of effort you put into this course was:  

26. The amount of effort to succeed in this course was:  

27. Your involvement in this course (doing assignments, attending classes, etc.) was:  

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course-related work?  
   - Under 2  
   - 2-3  
   - 4-5  
   - 6-7  
   - 8-9  
   - 10-11  
   - 12-13  
   - 14-15  
   - 16-17  
   - 18-19  
   - 20-21  
   - 22 or more

29. From the total average hours above, how many do you consider were valuable in advancing your education?  
   - Under 2  
   - 2-3  
   - 4-5  
   - 6-7  
   - 8-9  
   - 10-11  
   - 12-13  
   - 14-15  
   - 16-17  
   - 18-19  
   - 20-21  
   - 22 or more

30. What grade do you expect in this course?  
   - A (3.9-4.0)  
   - B (2.9-3.1)  
   - C (1.9-2.1)  
   - D (0.9-1.1)  
   - Pass  
   - A- (3.5-3.8)  
   - B- (2.5-2.8)  
   - C- (1.5-1.8)  
   - D- (0.7-0.8)  
   - Credit  
   - B+ (3.2-3.4)  
   - C+ (2.2-2.4)  
   - D+ (1.2-1.4)  
   - E (0.0)  
   - No Credit

31. In regard to your academic program, is this course best described as:  
   - In your major?  
   - A distribution requirement?  
   - An elective?  
   - In your minor?  
   - A program requirement?  
   - Other?

---

Mark RefleX™ forms by Pearson NCS MMR763-3 654321  ED66 Printed in U.S.A. ©1995, University of Washington - Office of Educational Assessment
Instructor _______________________________ Course ___________ Section _______ Date ___________

Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The course as a whole was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

2. The course content was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

3. The instructor’s contribution to the course was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

4. The instructor’s effectiveness in teaching the subject matter was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

5. Course organization was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

6. Instructor’s preparation for class was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

7. Instructor as a discussion leader was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

8. Instructor’s contribution to discussion was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

9. Conductiveness of class atmosphere to student learning was: 
   - Excellent: □ □ 
   - Very Good: □ □ 
   - Good: □ □ 
   - Fair: □ □ 
   - Poor: □ □ 
   - Very Poor: □ □

10. Quality of questions or problems raised was: 
    - Excellent: □ □ 
    - Very Good: □ □ 
    - Good: □ □ 
    - Fair: □ □ 
    - Poor: □ □ 
    - Very Poor: □ □

11. Student confidence in instructor’s knowledge was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

12. Instructor’s enthusiasm was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

13. Encouragement given students to express themselves was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

14. Instructor’s openness to student views was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

15. Interest level of class sessions was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

16. Use of class time was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

17. Instructor’s interest in whether students learned was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

18. Amount you learned in the course was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

19. Relevance and usefulness of course content was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

20. Evaluative and grading techniques (tests, papers, projects, etc.) were: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

21. Reasonableness of assigned work was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

22. Clarity of student responsibilities and requirements was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

Relative to other college courses you have taken:

23. Do you expect your grade in this course to be: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

24. The intellectual challenge presented was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

25. The amount of effort you put into this course was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

26. The amount of effort to succeed in this course was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

27. Your involvement in this course (doing assignments, attending classes, etc.) was: 
    - Much Higher: □ □ 
    - Higher: □ □ 
    - Average: □ □ 
    - Lower: □ □ 
    - Much Lower: □ □

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work? 
    - Under 2: □ □ 
    - 2 - 3: □ □ 
    - 4 - 5: □ □ 
    - 6 - 7: □ □ 
    - 8 - 9: □ □ 
    - 10 - 11: □ □ 
    - 12 - 13: □ □ 
    - 14 - 15: □ □ 
    - 16 - 17: □ □ 
    - 18 - 19: □ □ 
    - 20 - 21: □ □ 
    - 22 or more: □ □

29. From the total average hours above, how many do you consider were valuable in advancing your education? 
    - Under 2: □ □ 
    - 2 - 3: □ □ 
    - 4 - 5: □ □ 
    - 6 - 7: □ □ 
    - 8 - 9: □ □ 
    - 10 - 11: □ □ 
    - 12 - 13: □ □ 
    - 14 - 15: □ □ 
    - 16 - 17: □ □ 
    - 18 - 19: □ □ 
    - 20 - 21: □ □ 
    - 22 or more: □ □

30. What grade do you expect in this course? 
    - A: □ □ 
    - A-: □ □ 
    - B+: □ □ 
    - B: □ □ 
    - B-: □ □ 
    - C+: □ □ 
    - C: □ □ 
    - C-: □ □ 
    - D+: □ □ 
    - D: □ □ 
    - D-: □ □ 
    - F: □ □ 
    - Pass: □ □ 
    - No Credit: □ □

31. In regard to your academic program, is this course best described as: 
    - In your major: □ □ 
    - A distribution requirement: □ □ 
    - An elective: □ □ 
    - In your minor: □ □ 
    - A program requirement: □ □ 
    - Other: □ □
Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The course as a whole was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

2. The course content was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

3. The instructor's contribution to the course was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

4. The instructor's effectiveness in teaching the subject matter was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

5. Course organization was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

6. Sequential presentation of concepts was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

7. Explanations by instructor were:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

8. Instructor's ability to present alternative explanations when needed was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

9. Instructor's use of examples and illustrations was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

10. Quality of questions or problems raised by the instructor was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

11. Contribution of assignments to understanding course content was:  
     - Excellent  
     - Very Good  
     - Good  
     - Fair  
     - Poor  
     - Very Poor

12. Instructor's enthusiasm was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

13. Instructor's ability to deal with student difficulties was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

14. Answers to student questions were:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

15. Availability of extra help when needed was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

16. Use of class time was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

17. Instructor's interest in whether students learned what was taught:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

18. Amount you learned in the course was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

19. Relevance and usefulness of course content was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

20. Evaluative and grading techniques (tests, papers, projects, etc.) were:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

21. Reasonableness of assigned work was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

22. Clarity of student responsibilities and requirements was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

Relative to other college courses you have taken:

23. Do you expect your grade in this course to be:  
    - Much Higher  
    - Average  
    - Much Lower

24. The intellectual challenge presented was:  
    - Much Higher  
    - Average  
    - Much Lower

25. The amount of effort you put into this course was:  
    - Much Higher  
    - Average  
    - Much Lower

26. The amount of effort to succeed in this course was:  
    - Much Higher  
    - Average  
    - Much Lower

27. Your involvement in this course (doing assignments, attending classes, etc.) was:  
    - Much Higher  
    - Average  
    - Much Lower

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

29. From the total average hours above, how many do you consider were valuable in advancing your education?  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

30. What grade do you expect in this course?  
    - A (3.9-4.0)  
    - A- (3.5-3.8)  
    - B+ (3.2-3.4)  
    - B (2.9-3.1)  
    - B- (2.5-2.8)  
    - C+ (2.2-2.4)  
    - C (1.9-2.1)  
    - C- (1.5-1.8)  
    - D+ (1.2-1.4)  
    - D (0.9-1.1)  
    - D- (0.7-0.8)  
    - E (0.0)  
    - No Credit  
    - Pass  
    - Credit

31. In regard to your academic program, is this course best described as:  
    - In your major?  
    - A distribution requirement?  
    - An elective?  
    - In your minor?  
    - A program requirement?  
    - Other?

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Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The course as a whole was:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

2. The course content was:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

3. The instructor’s contribution to the course was:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

4. The instructor’s effectiveness in teaching the subject matter was:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

5. Opportunity for practicing what was learned was:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

6. Sequential development of skills was:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

7. Explanations of underlying rationales for new techniques or skills were:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

8. Demonstrations of expected skills were:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

9. Instructor’s confidence in students’ ability was:  
   - Excellent  - Good  - Fair  - Poor  - Very Poor

10. Recognition of student progress by instructor was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

11. Student confidence in instructor’s knowledge was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

12. Freedom allowed students to develop own skills and ideas was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

13. Instructor’s ability to deal with student difficulties was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

14. Tailoring of instruction to varying student skill levels was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

15. Availability of extra help when needed was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

16. Use of class time was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

17. Instructor’s interest in whether students learned was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

18. Amount you learned in the course was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

19. Relevance and usefulness of course content was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

20. Evaluative and grading techniques (instructors, projects, etc.) were:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

21. Reasonableness of assigned work was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

22. Clarity of student responsibility and assignments was:  
    - Excellent  - Good  - Fair  - Poor  - Very Poor

**Relative to other college courses you have taken:**

23. Do you expect your grade in this course to be:  
    - Much Higher  - Average  - Much Lower

24. The intellectual challenge presented was:  
    - Much Higher  - Average  - Much Lower

25. The amount of effort you put into this course was:  
    - Much Higher  - Average  - Much Lower

26. The amount of effort to succeed in this course was:  
    - Much Higher  - Average  - Much Lower

27. Your involvement in this course (doing assignments, attending classes, etc.) was:  
    - Much Higher  - Average  - Much Lower

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?  
   - Under 2  - 2 - 3  - 4 - 5  - 6 - 7  - 8 - 9  - 10 - 11  - 12 - 13  - 14 - 15  - 16 - 17  - 18 - 19  - 20 - 21  - 22 or more

29. From the total average hours above, how many do you consider were valuable in advancing your education?  
   - Under 2  - 2 - 3  - 4 - 5  - 6 - 7  - 8 - 9  - 10 - 11  - 12 - 13  - 14 - 15  - 16 - 17  - 18 - 19  - 20 - 21  - 22 or more

30. What grade do you expect in this course?  
   - A (3.9-4.0)  - B (2.9-3.1)  - C (1.9-2.1)  - D (0.9-1.1)  - Pass  
   - A+ (3.5-3.8)  - B+ (2.5-2.8)  - C+ (1.5-1.8)  - D+ (0.7-0.8)  - Credit  
   - B+ (3.2-3.4)  - C+ (2.2-2.4)  - D+ (1.2-1.4)  - E (0.0)  - No Credit

31. In regard to your academic program, is this course best described as:  
   - In your major?  - A distribution requirement?  - An elective?  
   - In your minor?  - A program requirement?  - Other?
Instructor __________________________ Course ____________ Section _____ Date ________

Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The quiz section as a whole was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

2. The content of the quiz section was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

3. The quiz section instructor's (QSI's) contribution to the course was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

4. The QSI's effectiveness in teaching the subject matter was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

5. Explanations by the QSI were:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

6. QSI's use of examples and illustrations was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

7. Quality of questions or problems raised by QSI was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

8. QSI's enthusiasm was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

9. Student confidence in QSI's knowledge was:  
   - Excellent  
   - Very Good  
   - Good  
   - Fair  
   - Poor  
   - Very Poor

10. Encouragement given students to express themselves was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

11. Answers to student questions were:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

12. Interest level of quiz sections was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

13. QSI's openness to student views was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

14. QSI's ability to deal with student difficulties was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

15. Availability of extra help when needed was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

16. Use of quiz section time was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

17. QSI's interest in whether students learned was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

18. Amount you learned in the quiz sections was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

19. Relevance and usefulness of quiz section content was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

20. Coordination between lectures and quizzes was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

21. Reasonableness of assigned work for quiz sections was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

22. Clarity of student responsibilities and expectations was:  
    - Excellent  
    - Very Good  
    - Good  
    - Fair  
    - Poor  
    - Very Poor

Relative to other college courses you have taken:

23. Do you expect your grade in this course to be:  
    - Much Higher  
    - Average  
    - Much Lower  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

24. The intellectual challenge presented was:  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

25. The amount of effort you put into this course was:  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

26. The amount of effort to succeed in this course was:  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

27. Your involvement in this course (doing assignments, attending classes, etc.) was:  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course-related work?  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

29. From the total average hours above, how many do you consider were valuable in advancing your education?  
    - Under 2  
    - 2 - 3  
    - 4 - 5  
    - 6 - 7  
    - 8 - 9  
    - 10 - 11  
    - 12 - 13  
    - 14 - 15  
    - 16 - 17  
    - 18 - 19  
    - 20 - 21  
    - 22 or more

30. What grade do you expect in this course?  
    - A+  
    - A  
    - A-  
    - B+  
    - B  
    - B-  
    - C+  
    - C  
    - C-  
    - D+  
    - D  
    - D-  
    - F  
    - No Credit

31. In regard to your academic program, is this course best described as:  
    - In your major?  
    - A distribution requirement?  
    - An elective?  
    - In your minor?  
    - A program requirement?  
    - Other?
Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The course as a whole was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

2. The course content was:

3. The instructor overall was:

4. The instructor's contribution to your understanding of concepts and ideas:

5. Course organization was:

6. Opportunity to ask questions was:

7. Explanations by instructor were:

8. Instructor's contribution to your ability to solve problems was:

9. Instructor's use of examples and illustrations was:

10. Length and difficulty of homework assignments were:

11. Contribution of examinations to understanding course content was:

12. Instructor's enthusiasm was:

13. The textbook overall was:

14. Answers to questions from class were:

15. Relationship between lectures and text was:

16. Availability of extra help when needed was:

17. Instructor's interest in whether students learned was:

18. Amount you learned in the course was:

19. Relevance and usefulness of course content was:

20. Relevance and usefulness of homework assignments were:

21. Reasonableness of assigned work was:

22. Relationship of examinations material emphasized in the course was:

Relative to other college courses you have taken:

23. Do you expect your grade in this course to be:
   - Much Higher
   - Average
   - Much Lower

24. The intellectual challenge presented was:

25. The amount of effort you put into this course was:

26. The amount of effort to succeed in this course was:

27. Your involvement in this course (doing assignments, attending classes, etc.) was:
   - Under 2
   - Under 3
   - Under 4
   - Under 5
   - Under 6
   - Under 7
   - Under 8
   - Under 9
   - Under 10
   - Under 11
   - Under 12
   - Under 13
   - Under 14
   - Under 15
   - Under 16
   - Under 17
   - Under 18

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?
   - Under 2
   - Under 3
   - Under 4
   - Under 5
   - Under 6
   - Under 7
   - Under 8
   - Under 9
   - Under 10
   - Under 11
   - Under 12
   - Under 13
   - Under 14
   - Under 15
   - Under 16
   - Under 17
   - Under 18
   - Under 19
   - Under 20
   - Under 21

29. From the total average hours above, how many do you consider were valuable in advancing your education?
   - Under 2
   - Under 3
   - Under 4
   - Under 5
   - Under 6
   - Under 7
   - Under 8
   - Under 9
   - Under 10
   - Under 11
   - Under 12
   - Under 13
   - Under 14
   - Under 15
   - Under 16
   - Under 17
   - Under 18
   - Under 19
   - Under 20
   - Under 21

30. What grade do you expect in this course?
   - A (3.9-4.0)
   - B (3.5-3.8)
   - C (3.2-3.4)
   - D (2.9-3.1)
   - E (2.5-2.8)
   - F (2.2-2.4)
   - Pass (1.9-2.1)
   - Credit (1.5-1.8)
   - Credit (0.7-0.8)
   - No Credit (0.0)

31. In regard to your academic program, is this course best described as:
   - In your major?
   - A distribution requirement?
   - An elective?
   - In your minor?
   - A program requirement?
   - Other?
Instructor __________________________ Course ___________ Section _______ Date ______

Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

1. The lab section as a whole was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

2. The content of the lab section was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

3. The lab instructor's contribution to the course was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

4. The lab instructor's effectiveness in teaching the subject matter was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

5. Explanations by the lab instructor were:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

6. Lab instructor's preparedness for lab sessions was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

7. Quality of questions or problems raised by the lab instructor was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

8. Lab instructor's enthusiasm was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

9. Student confidence in lab instructor's knowledge was:
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
   - Very Poor

10. Lab instructor's ability to solve unexpected problems was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

11. Answers to student questions were:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

12. Interest level of lab sessions was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

13. Communication and enforcement of safety procedures were:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

14. Lab instructor's ability to deal with student difficulties was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

15. Availability of extra help when needed was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

16. Use of lab section time was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

17. Lab instructor's interest in whether students learned:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

18. Amount you learned in the lab sections was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

19. Relevance and usefulness of lab section content was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

20. Coordination between lectures and lab sessions was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

21. Reasonableness of assigned work for lab sections was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

22. Clarity of student responsibilities and assignments was:
    - Excellent
    - Very Good
    - Good
    - Fair
    - Poor
    - Very Poor

Relative to other college courses you have taken:
23. Do you expect your grade in this course to be:
    - Much Higher
    - Average
    - Much Lower

24. The intellectual challenge presented was:
    - Much Higher
    - Average
    - Much Lower

25. The amount of effort you put into this course was:
    - Much Higher
    - Average
    - Much Lower

26. The amount of effort to succeed in this course was:
    - Much Higher
    - Average
    - Much Lower

27. Your involvement in this course (doing assignments, attending classes, etc.) was:
    - Much Higher
    - Average
    - Much Lower

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?
    - Under 2
    - 2 - 3
    - 4 - 5
    - 6 - 7
    - 8 - 9
    - 10 - 11
    - 12 - 13
    - 14 - 15
    - 16 - 17
    - 18 - 19
    - 20 - 21
    - 22 or more

29. From the total average hours above, how many do you consider were valuable in advancing your education?
    - Under 2
    - 2 - 3
    - 4 - 5
    - 6 - 7
    - 8 - 9
    - 10 - 11
    - 12 - 13
    - 14 - 15
    - 16 - 17
    - 18 - 19
    - 20 - 21
    - 22 or more

30. What grade do you expect in this course?
    - A (3.9-4.0)
    - B (2.9-3.1)
    - C (1.9-2.1)
    - D (0.9-1.1)
    - Pass
    - F (0.0)
    - No Credit
    - A- (3.5-3.8)
    - B- (2.5-2.8)
    - C- (1.5-1.8)
    - D- (0.7-0.8)
    - Credit
    - B+ (3.2-3.4)
    - C+ (2.2-2.4)
    - D+ (1.2-1.4)
    - E (0.0)
    - No Credit

31. In regard to your academic program, is this course best described as:
    - In your major?
    - A distribution requirement?
    - An elective?
    - In your minor?
    - A program requirement?
    - Other?
Completion of this questionnaire is voluntary. You are free to leave some or all questions unanswered.

<table>
<thead>
<tr>
<th>Question</th>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
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</thead>
<tbody>
<tr>
<td>1. The distance learning course as a whole was:</td>
<td></td>
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<tr>
<td>2. The course content was:</td>
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<td>3. The instructor's contribution to the course was:</td>
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<td>4. The effectiveness of the distance learning format was:</td>
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<td>5. The helpfulness of the distance learning staff overall was:</td>
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<td>6. Student confidence in instructor's knowledge was:</td>
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<td>7. Timeliness of instructor response to assignments was:</td>
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<td>8. Quality/helpfulness of instructor feedback was:</td>
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<td>9. Tailoring of instruction to varying student skill levels was:</td>
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<td>10. Clarity of course objectives was:</td>
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<td>11. The organization of the study guide was:</td>
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<td>12. Content of the study guide was:</td>
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<td>13. Relevance of textbook for self-study was:</td>
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<td>14. Usefulness of reading assignments in understanding course content</td>
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<td>15. Usefulness of written assignments in understanding course content</td>
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<td>16. Usefulness of videotapes in understanding course content</td>
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<td>17. Usefulness of computer (on-line) resources in understanding course</td>
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<td>18. Usefulness of audio tapes in understanding course content</td>
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<tr>
<td>19. Relevance and usefulness of course content were</td>
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<tr>
<td>20. Evaluative and grading techniques (tests, quizzes, etc.) were:</td>
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<tr>
<td>21. Reasonableness of assigned work was</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>22. Clarity of student responsibility and requirements was:</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Relative to other college courses you have taken:

<table>
<thead>
<tr>
<th>Question</th>
<th>Much Higher</th>
<th>Average</th>
<th>Much Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Do you expect your grade in this course to be:</td>
<td></td>
<td></td>
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<tr>
<td>24. The intellectual challenge presented was:</td>
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</tr>
<tr>
<td>25. The amount of effort you put into this course was:</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>26. The amount of effort to succeed in this course was:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Your involvement in this course (doing assignments, attending classes, etc.) was:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

28. On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?

<table>
<thead>
<tr>
<th>Hours per week</th>
<th>Under 2</th>
<th>2 - 3</th>
<th>4 - 5</th>
<th>6 - 7</th>
<th>8 - 9</th>
<th>10 - 11</th>
<th>12 - 13</th>
<th>14 - 15</th>
<th>16 - 17</th>
<th>18 - 19</th>
</tr>
</thead>
</table>

29. From the total average hours above, how many do you consider were valuable in advancing your education?

<table>
<thead>
<tr>
<th>Hours per week</th>
<th>Under 2</th>
<th>2 - 3</th>
<th>4 - 5</th>
<th>6 - 7</th>
<th>8 - 9</th>
<th>10 - 11</th>
<th>12 - 13</th>
<th>14 - 15</th>
<th>16 - 17</th>
<th>18 - 19</th>
</tr>
</thead>
</table>

30. What grade do you expect in this course?

<table>
<thead>
<tr>
<th>Grade</th>
<th>A (3.9-4.0)</th>
<th>B (2.9-3.1)</th>
<th>C (1.9-2.1)</th>
<th>D (0.9-1.1)</th>
<th>Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A- (3.5-3.8)</td>
<td>B- (2.5-2.8)</td>
<td>C- (1.5-1.8)</td>
<td>D- (0.7-0.8)</td>
<td>Credit</td>
</tr>
<tr>
<td></td>
<td>B+ (3.2-3.4)</td>
<td>C+ (2.2-2.4)</td>
<td>D+ (1.2-1.4)</td>
<td>E (0.0)</td>
<td>No Credit</td>
</tr>
</tbody>
</table>

31. In regard to your academic program, is this course best described as:

- In your major?
- A distribution requirement?
- An elective?
- In your minor?
- A program requirement?
- Other?
APPENDIX E

DOCUMENT E:
INDIVIDUAL FACULTY INFORMATION
CURRICULUM VITAE

1. John D. Fox, Jr., Ph.D., C.F.

2. Academic Rank and Specialization
   Associate Professor of Land Resource Management, Dept. of Forest Sciences, Forest Hydrology (9+3 months)

3. Education
   Ph.D.—Forest Hydrology, 1976, University of Washington
   M.S.—Forest Resources, 1970, University of Washington
   B.S. --Biology, 1968, Trinity College, Hartford, CT.

4. Professional Experience
   1993-present: Associate Prof. of Land Resources, School of Natural Resources & Agricultural Sciences
   (formerly: School of Agriculture & Land Resources Management)
   University of Alaska Fairbanks, Fairbanks, Alaska
   
   1999 to 6-30-2000: Acting Head, Dept. of Forest Sciences, and Dept. of Resources Management, University of Alaska Fairbanks, Fairbanks, AK.
   
   
   
   1973-1993: Assistant Prof. Resource Management, School of Agriculture & Land Resources Management
   University of Alaska Fairbanks, Fairbanks, Alaska

   1968-1973: Research Assistant
   College of Forest Resources
   University of Washington, Seattle

5. Teaching Experience – University of Alaska Fairbanks - 32.5 years

   General Areas of Teaching Experience

   Forest Resources/Ecology
   Hydrology/Watershed Management
   Biometeorology/Microclimatology
   Conservation of Natural Resources
   Simulation and Modeling
   Forest Management
   Natural Resources Inventory & Measurements
   Environmental Ethics

   Recent Teaching Assignment (all are 3 credits except Summer short course which is 1)
Spring '04  NRM 303X(2 sections) Environmental Ethics and Actions  
NRM 640: Modeling & Simulation in NRM  
Summer '04 Co-instructor for 3-day short course on "Why Do  
Boreal Forests Matter?"  
Fall '04  NRM 370: Intro. to Watershed Management  
NRM 450: Forest Management,  
+Guest Lectures in NRM 101 NR Conservation & Policy,  
NRM 304 Perspectives in NRM,  
NRM 601 Research Methods  
Spring '05:  NRM 303X: Environmental Ethics and Actions (2 sections)  
Summer'05 Co-instructor for 3-day short course on "Why Do  
Boreal Forests Matter?"  
Fall '05  NRM 370: Intro. to Watershed Management  
NRM 670: Biometeorology  
+Guest Lectures in NRM 101: NR Conservation and Policy,  
NRM 601: Research Methods, NRM 304 Perspectives in NRM

Other Teaching Experience

1995.

6. Dates of Appointment & Promotions at present institution

Initial hire: Assistant Professor  
1973  
Tenured:  
1980  
Promoted: Associate Professor  
1993

7. Publications in last 5 years

2006. Kane, E.S., D.W. Valentine, G.L. Michaelson, J.D. Fox, and C.L. Ping. Controls over  
pathways of carbon efflux from soils along climate and black spruce  

2005. Fox, J.D. Ethics in Natural Resources Management: Some Concepts and Food  

2004. Fox, J.D. Discussion of: "Prediction of Stream Temperature in Forested  
Watersheds" by V.Sridhar, Amy Sansone, Jonathan LaMarche, Tony Dubin, and  

2003. Fox, J.D. Ethics and Acceptable Risks of Non-native Species Introductions.  
Keynote Address and Paper. Continuing Forestry Education Short-course on  
River Chapter of the Society of American Foresters, Fairbanks, AK.

Zone Management", A Continuing Forestry Education Workshop. February 21 & 22  
2002 Fairbanks, Alaska. Sponsored by the Yukon River Chapter of SAF.


8. Professional Activities and honors during past 5 years

2003-2005 Appointed UAF-NCAA Faculty Athletics Representative

2004-2005 Nominated for the Usibelli Distinguished Teaching Award

2004 National Association of Colleges & Teachers of Agriculture Teaching Award

2003-2004 Nominated for the Usibelli Distinguished Teaching Award


2003. Awarded the status of “Fellow” of The Society of American Foresters

2002-2003 Nominated for the Case Teaching Award

2002-2003 Nominated for the Usibelli Distinguished Teaching Award

9. Professional Organizations – Membership & Offices held

Society of American Foresters, Fellow State society Chair:

American Water Resources Association

Soil & Water Conservation Society

10. Self-Improvement activities (last 10 years)


11. **External grants & research funding (last 5 years)**

<table>
<thead>
<tr>
<th>Sponsored Projects</th>
<th>Date Granted &amp; Duration</th>
<th>Names</th>
<th>PI/Co-PI?</th>
<th>Project Title</th>
<th>Grant Sponsor</th>
<th>Grant Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1999, 2 yrs.</td>
<td>Husby, Fox</td>
<td>Sub-PI/manager</td>
<td>Star Schools Program/Education Equipment Program/Equipment Program</td>
<td>US Dept. ED</td>
<td>$300,000. total</td>
</tr>
<tr>
<td></td>
<td>1999, 5 yrs.</td>
<td>Fox</td>
<td>PI</td>
<td>Stream Temp response to timber harvest Forest Plan</td>
<td>USDA-McIntire-Stennis</td>
<td>$43,398. /yr</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>Fox &amp; Wurtz</td>
<td>Co-PI</td>
<td>Evapotranspiration from Boreal Forest</td>
<td>UA Pres. Fund</td>
<td>$23,600. total</td>
</tr>
<tr>
<td></td>
<td>2005, 5 yrs</td>
<td>Fox</td>
<td>PI</td>
<td></td>
<td>USDA-McIntire-Stennis</td>
<td>$46,755. /yr</td>
</tr>
</tbody>
</table>

Includes names of all investigators
CURRICULUM VITAE

1. John D. Fox, Jr., Ph.D., C.F.

2. Academic Rank and Specialization
   Associate Professor of Land Resource Management, Dept. of Forest Sciences, Forest Hydrology (9+3 months)

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NRM 304 Perspectives in NRM,
NRM 601 Research Methods
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Boreal Forests Matter?”
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NRM 670: Biometeorology
+Guest Lectures in NRM 101: NR Conservation and Policy,
NRM 601: Research Methods, NRM 304 Perspectives in NRM

Other Teaching Experience
1995.

6. Dates of Appointment & Promotions at present institution

Initial hire: Assistant Professor 1973
Tenured: 1980
Promoted: Associate Professor 1993

7. Publications in last 5 years

2006. Kane, E.S., D.W. Valentine, G.L. Michaelson, J.D. Fox, and C.L. Ping. Controls over
pathways of carbon efflux from soils along climate and black spruce
productivity gradients in interior Alaska. Soil Biology & Biochemistry (in pl

2005. Fox, J.D. Ethics in Natural Resources Management: Some Concepts and

2004. Fox, J.D. Discussion of: “Prediction of Stream Temperature in Forested
Watersheds” by V.Sridhar, Amy Sansone, Jonathan LaMarche, Tony Dubin, and

2003. Fox, J.D. Ethics and Acceptable Risks of Non-native Species Introductions. Keyr
Address and Paper. Continuing Forestry Education Short-course on Introduced and
of the Society of American Foresters, Fairbanks, AK.

“Riparian Zone Management”, A Continuing Forestry Education
Workshop .February 21 & 22, 2002 Fairbanks, Alaska. Sponsored by the
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<td>_names</td>
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<td>PI/Co-PI</td>
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<td>Project Title</td>
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<td>Grant Sponsor</td>
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<td></td>
<td>Grant Amount</td>
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<tr>
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<td>Husby, Fox</td>
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<td></td>
<td></td>
<td>Star Schools Program/Edu</td>
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<td></td>
<td></td>
<td>.Equipment</td>
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<td></td>
<td>Fox</td>
<td>Stream</td>
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<td></td>
<td></td>
<td>Temp</td>
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<td></td>
<td></td>
<td>response to</td>
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<tr>
<td></td>
<td></td>
<td>timber</td>
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<tr>
<td></td>
<td>Fox &amp; Wurtz</td>
<td>Co-PI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>harvest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Forest Plan</td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td>US Dept.ED</td>
</tr>
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<td>USDA-</td>
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<td>McIntire-</td>
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<td></td>
<td></td>
<td>Stennis</td>
</tr>
<tr>
<td>2005, 5 yrs</td>
<td>Fox</td>
<td>PI</td>
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<td></td>
<td></td>
<td>Evapotranspiration from</td>
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<td></td>
<td>Boreal</td>
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<td>Forest</td>
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<td></td>
<td>USDA-</td>
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<tr>
<td></td>
<td></td>
<td>McIntire-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stennis</td>
</tr>
</tbody>
</table>

Includes names of all investigators
Individual Faculty Information for SAF Forestry Program Accreditation

1. Name: Glenn Patrick Juday

2. Academic Rank, specialization, appointment basis: Professor of Forest Ecology (regular appointment, tenured)

3. Academic education background:
   B.S. summa cum laude, 1972, Forest Management, Purdue University.
   Ph.D., 1976, Plant Ecology, Oregon State University
   Dissertation topic: The Location, Composition and Structure of Old-Growth Forests of the Oregon Coast Range.
   Post-Doctoral Fellowship in Environmental Affairs, 1976-1977, (Rockefeller Foundation)
   Oregon State University, Executive Chair Oregon Natural Area Preserves Advisory Commission.

4. Professional and research experience:
   July, 2001 -- present: Professor of Forest Ecology (tenured), University of Alaska - Fairbanks, School of Natural Resources and Agricultural Sciences. Director, UAF Tree-Ring Laboratory.

   July, 1992 -- June 2001: Associate Professor of Forest Ecology (tenured), University of Alaska - Fairbanks, School of Agriculture and Land Resource Management, Forest Science Department. Director, UAF Tree-Ring Laboratory.


   September, 1977 -- September, 1981: Research Ecologist and Alaska Ecological Reserves Coordinator, employed first through Federal-State Land Use Planning Commission for Alaska then University of Alaska, Arctic Environmental Information and Data Center, and USDA Forest Service (GS 13); based at Institute of Northern Forestry, Fairbanks, Alaska.

5. Teaching experience:

   University of Alaska Fairbanks regular classes:
   NRM 694 Adaptive Management (1 of 4 instructors) 3.0 credits
   Spring Semester 2003

   NRM 681 Natural Area Protection and Management (sole instructor) 3.0 credits
Spring Semester 1997, Spring Semester 1999, Spring Semester 2001

**NRM/GEOG 464 Wilderness Management (1 of 2 instructors) 3.0 credits**

**NRM 304 Perspectives in Resources Management (1 of 3 or 4 instructors) 3.0 credits, oral and writing-intensive class**

**NRM/BIOL 277 Introduction to Conservation Biology (sole instructor) 3.0 credits**

**NRM 290 Natural Resource Mgt. Issues at High Latitudes, 2.0 credits (11-day field trip)**
Instructor in charge assisted 2 assistant instructors, May 2001
Co-Instructor in charge assisted by Dr. Carol Lewis, and 3 assistant instructors, May 2000
1 of 2 assistant instructors to instructor in charge, Dr. Ed Packee, May 1999

6. **Dates of appointment and promotions at present institution**
July 2001, Promoted to Professor of Forest Ecology.
July 1992, Promoted to Associate Professor of Forest Ecology and received tenure.
July 1987, Appointed Assistant Professor of Forest Ecology (tenure track position).
October 1981, Appointed Visiting Associate Professor of Plant Ecology, (non-tenure track).

7. **List of bibliographical style publication during the last five years**
**Publications accepted/in press**

**Publications in review**
Publications in Progress
Maher, K., Juday, G.P., and J. Dawe. (in progress). Sap yields and stand characteristics from Alaskan Birch (Betula neoalaskana Sargent) in Interior Alaska. [Canadian Journal of Forest Research]

Peer-Reviewed Articles and Publications
Chapin, FS 3rd; Peterson, G; Berkes, F; Callaghan, TV; Angelstam, P; Apps, M; Beier, C; Bergeron, Y; Crepin, AS; Danell, K; Elmqvist, T; Folke, C; Forbes, B; Fresco, N; Juday, G; Niemela, J; Shvidenko, A; Whiteman, G. 2004. Resilience and vulnerability of northern regions to social and environmental change. Ambio 33(6):344-9.


Editor-Reviewed Papers

Peer-Reviewed and/or Editor-Reviewed Papers/Chapters in Conference Proceedings


Contract Reports and Other Publications

Published Abstracts

21 published abstracts since 2000

8. Off-campus consulting, or other professional activities, special honors, recognition, during the past five years
I am a member of the Polar Regions Chapter Author Team, Global Environment Outlook-4.


August 17, 2005. I was an all-day field trip leader explaining climate change and resource management issues for 4 U.S. Senators – McCain, Clinton, Graham, Collins, Chugach NF, Kenai NWR, AK.

June 1, 2005. I was an invited presenter/briefer on climate change challenges and opportunities in the circumpolar north to Mr. Floyd Des Champs, Head of Committee staff for U.S. Senate
Committee on Climate Change.

October, 2005. I was an invited plenary session speaker, 8th World Wilderness Congress, Anchorage, Alaska.


Science advisor for program and on-air interview in NHK Japan Documentary/Investigative TV program on Climate Warming Effects in Alaska. Jun Ochiai, writer-producer-director. To air February/March 2006.

Science advisor for program and on-air interview featured in October Films program for BBC 4 “The End of the World As We Know It” on climate change in Alaska, broadcast in 8 January 7:30 pm, 2005, Nick Hornby, Producer/Director.


I served as national Chair of the SAF Forest Ecology Working Group (WG). Based on accomplishments during my term, a Certificate of recognition for outstanding accomplishments of Forest Ecology WG was presented to my successor Chairman of WG at SAF National Convention, November 17, 2000, Washington D.C.

Lead author, Chapter on Forestry and Agriculture, Arctic Climate Impact Assessment international project (www.acia.uaf.edu), nominated by international peers.


10. Membership and offices held in professional organizations

I served as national Chair of the SAF Forest Ecology Working Group (WG), 1999-2000
Member – Alaska SAF, Yukon River Chapter
Ecological Society of America
American Association for the Advancement of Science
Natural Areas Association

Other Professional Leadership and service

Author, Strategic Plan for School of Natural Resources and Agricultural Sciences, University of Alaska Fairbanks (2004).

Co-Chair, Science Steering Board, Center For Global Change and Arctic System Science, University of Alaska Fairbanks (2004-2005).


Member, Organizing Committee, 3rd North American Forest Ecology Workshop (2001)
Member, Organizing Committee, 2nd North American Forest Ecology Workshop (1999)
Numerous lectures to national, regional, and community organizations. Testified on national forestry research needs and priorities before U.S. Congress 5 times during the period 1982-1989.

11. Major professional self-improvement activities during past 10 years (including sabbatical)
Invited and sponsored participant, Arctic Climate Impact Assessment, All-authors Workshop, New England Center, Durham, NH. Mar. 24-28, 2003. Chair of the Chapter (Forests, Land Management, Agriculture) review session, contribution to the development of the Overview Document, and coordination with Chapter 6 (Terrestrial Ecosystems).

12. External grants and other research funding during the last five years.

**Major Grants and Contracts (pending)**
Co-Principal Investigator (one of 3; Dr. Claire Alix, Principal Investigator) in project “A free gift to us on the beach”, Cultural Value, Use, and Ecology of Driftwood in a Changing Environment” (total $ 609,991). Submitted to National Science Foundation, Office of Polar Programs, Arctic Social Science.

**Major Grants and Contracts (funded - selected)**
Co-Principal Investigator (one of 4; Dr. Roseann D’Arrigo, Principal Investigator) in project “Response of Pacific Northwest and Alaskan Forests to Recent Multiple Environmental Changes” (2-year term, 06/2001 to 06/2003; totaling $ 142,897. Source: U.S. Department of Energy, subcontract through Columbia University)
Co-Principal Investigator (one of 6; Dr. Terry Chapin, Principal Investigator) in project “Regional resilience and adaptation: Planning for change. Integrative Graduate Research, Education, and Training (IGERT) Program National Science Foundation.” (4-year term, 09/2001 to 09/2005; totaling $ 2,620,100. Source: National Science Foundation)
Co-Principal Investigator (one of 24; Dr. Terry Chapin, Principal Investigator) in project “Climate-Disturbance Interactions in the Alaskan Boreal Forest.” (4-year term, 2000 - 2003, totaling $ 2,800,000 from the National Science Foundation)
Principal Investigator, Birch sap production, chemistry, and marketing. US Department of Agriculture Special Grants. $70,000. Funded 06/02 - 09/03.
Principal Investigator, Carbon cropping through carbon uptake in the Alaska boreal forest. USDA Special Grants. $88,000. Funded 06/01 - 09/03.
TO: John Yarie 
    Ed Packee

FROM: Tom Malone

DATE: 20 Dec. 2005

RE: Response to SAF Accreditation Document

1. Thomas Malone

2. Research Forester, Instructor

3. Education:
   New York State Ranger School, Certificate 1972
   University of Alaska Fairbanks, B.Sc. Natural Resource Management, 1995
   University of Alaska Fairbanks, M.Sc. Student, expected graduation 2007

4. Professional and Research Experience
   1983-present, University of Alaska Fairbanks SNRAS/AFES, Fairbanks AK
   Research: Supervise set up of research plots for forest regeneration, forest growth
   and yield (FG&Y), forest health, stand manipulation, permanent sample
   plots (PSP), and levels of growing stock study (LOGS). Have established or
   assisted in establishing over 500 PSPs from interior Alaska to the Kenai
   Peninsula. Plot establishment includes: location, layout, tree diameter and height
   measurements, health assessment, age determination, brief soils descriptions,
   vegetation identification and description. Collected data to develop new volume
   equations for Alaska boreal forest tree species. Prepare data for publication:
   download data into desktop computer, develop templates and spreadsheets for
   data management, organize data, and conduct preliminary analysis. Operate
   chainsaws, brush cutter, chippers, yarders, sawmills, skidders, scarifier, and
   bulldozer. Setup and repaired portable sawmills.
   Administration: Responsible for field operations of the University forest growth
   and yield program: schedule work, hire student employees, provide transportation
   for crew, responsible for health and safety of employees. Write position
   descriptions for student field and lab positions. Manage FG&Y budget:
   purchases, travel for staff and students. Develop in-kind financial support for
   field projects (housing, fuel, equipment use, personnel). Secure land use permits
   from landowners (Federal, State, Native Corporations, and private individuals).
   Supervised 62 undergraduate and graduate students, volunteers, and international
   forestry students in the field, laboratory, and office. Assist international forestry
   students in securing VISAs and all necessary documentation to come to Alaska
   and work with the University forest growth and yield program as well as with
   Alaska Division of Forestry, USDI Alaska Fire Service, and Tanana Chief
   Conference forestry program. Supervise dendrochronology lab operations:
coordinate work schedules of various users, responsible for proper operation and instrumentation of lab equipment.

1982-83, USDA Forest Service, Institute of Northern Forestry, Fairbanks AK

Operated a proto-type cable log yarder. Demonstrated safe operation and effectiveness of equipment to land management personnel and loggers. Set up timber sales: surveyed boundaries, marked trees, cruised timber, and set up research plots. Assisted a forest geneticist in studying genetic variation of white spruce: conducted isoenzyme tests, collected and extracted seeds from cones, and planted seedlings.

1978-82, USDI Young Adult Conservation Corps, Anchorage AK

Director / Work Coordinator / Crew Leader: Hired to lead a crew of 7 to 10 young adults (16 – 22 year olds) in various conservation projects: wildlife habitat enhancement, reforestation, park construction and repair, cleanup remote DOD sites. Promoted to Work Coordinator in February 1979. In this capacity planned work for 4 crew leaders and 40 corps members. Inspected jobs, coordinated equipment use, procured materials, insured work was accomplished safely. Promoted to Director in August 1979, supervised 5 staff and 40 corps members in a residential camp on Elmendorf AFB. Overall supervision of administrative, residential and work functions of camp. Prepared and managed budget ($1,045,900 in FY80); hired and terminated, when necessary, Department of Interior employees and YACC corps members; prepared reports on the accomplishments and cost effectiveness of camp operations. Established and maintained positive public relations with the military and local community leaders. Served as USDI representative on Workers Compensation Board. Youngest YACC residential camp Director in the nation.

1973-78, New York State Parks Commission, Rome, NY

Park/Land Management supervised 7 seasonal employees in park maintenance: lawn, road, and campground maintenance. State Logging Inspector: insured adherence to salvage logging contract to remove Dutch-Elm disease infected trees from parks. Park construction crew: built roads, trails, buildings.

5. Instruction: Teach a 3 credit class: NRM 453 “Logging and Utilization of Forest Products.” Lecturer in University classes on technical subjects: GPS technology, laser measurement technology, tree seed extraction and cleaning, chainsaw safety, and bear safety. Instructed rural Alaskans in safe and efficient operation of portable sawmills. Make 4 - 5 presentations annually in high schools and grade schools on various aspects of forestry (careers, technology/measurements, forest products).

6. Appointment:

Research Forester June 2003
Instructor appointment September 1995
7. none


11. none
T. SCOTT RUPP

Academic Rank:
Assistant Professor of Forest Measurements and Inventory; 9-month appointment

Academic Education Background:
1997-2000: University of Minnesota (Postdoctoral Fellow in Ecological Modeling)

Professional and Research Experience:
2001-present: Assistant Professor, Dept. of Forest Sciences, University of Alaska
2001: Assistant Research Professor, Dept. of Forest Sciences, University of Alaska
1998-2000: Affiliate Assistant Professor, Dept. of Forest Sciences, University of Alaska
1997-2000: Postdoctoral Fellow, Dept. of Ecology, Evolution, and Behavior, University of Minnesota
1993-1995: Research Assistant, Dept. of Forest Sciences, University of Alaska
1992: Technician, USFS, NE Forest Research Station, Morgantown, West Virginia

Teaching Experience:
2001-present: Assistant Professor. Department of Forest Sciences, University of Alaska. Natural Resources Measurement and Inventory (NRM 340); Regional Sustainability (NRM 694); Natural Resources Conservation and Policy (NRM 101) – Fire Ecology Lecture; Research Methods in Natural Resources Management (NRM 601) – Forest Sampling and Modeling Lecture.
2001: Guest Lecturer. Department of Forest Sciences, University of Alaska. GIS Analysis (NRM 341)
2001: Guest Lecturer. Department of Biology and Wildlife, University of Alaska. Modeling Biological Systems (BIOL 671)
2000: Moderator. Department of Forest Sciences, University of Alaska. Special Seminar
1998-1999: Instructor, Dept. of Forest Sciences, University of Alaska.
1995-1997: Teaching Assistant, Dept. of Forest Sciences, University of Alaska.

Appointment Date:
August 2001. Assistant Professor.

Publications:


Activities and Honors:
- Board Member, State of Alaska, Department of Natural Resources – Northern Area State Park Citizens’ Advisory Board, Appointment 2005-2008.
- Chair, Developing a Forest Inventory Database Workshop – University of Alaska, Department of Forest Sciences, June 2002.
- Research Participant, Bonanza Creek Long Term Ecological Research Site, University of Alaska, 1993-present.
- Participant, Global Change and Terrestrial Ecosystems (GCET) - Landscape Fire Model Comparison Workshop, November 1999.
- 2002-2003 School of Agriculture and Land Resources Management Research Merit Award
- 2001-2002 School of Agriculture and Land Resources Management Research Merit Award

Professional Membership:
Ecological Society of America, Society of American Foresters

External Grants:


David W. Valentine

Associate Professor of Forest Soils, 9+3 month appointment

Education

<table>
<thead>
<tr>
<th>Degree</th>
<th>Institution</th>
<th>Major</th>
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<th>Awarded</th>
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<tr>
<td></td>
<td>University of New Mexico</td>
<td>Ecosystem Ecology</td>
<td>1983-1985</td>
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<tr>
<td>PhD</td>
<td>Duke University</td>
<td>Biogeochemistry</td>
<td>1985-1990</td>
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Professional Experience

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<tr>
<th>Employer</th>
<th>Nature of work</th>
<th>Title</th>
<th>Dates</th>
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<tr>
<td>Colorado State University</td>
<td>Research</td>
<td>Postdoctoral Fellow</td>
<td>1989-1991</td>
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<tr>
<td>USDA Agricultural Research Service</td>
<td>Research</td>
<td>Distinguished Postdoctoral Fellow in Global Change</td>
<td>1991-1993</td>
<td>2</td>
</tr>
<tr>
<td>Colorado State University</td>
<td>Research</td>
<td>Research Associate</td>
<td>1991-1996</td>
<td>5</td>
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<tr>
<td>Colorado State University</td>
<td>Teaching</td>
<td>Temporary Affiliate Assistant Professor</td>
<td>1995-1996</td>
<td>1</td>
</tr>
<tr>
<td>University of Alaska Fairbanks</td>
<td>Forest soils research and teaching</td>
<td>Assistant Professor of Forest Soils</td>
<td>1997-2003</td>
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</tr>
<tr>
<td>University of Alaska Fairbanks</td>
<td>Forest soils research and teaching</td>
<td>Associate Professor of Forest Soils</td>
<td>2003-present</td>
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</table>

Publications during past 5 years


Professional Organizations

American Association for the Advancement of Science; American Geophysical Union; American Institute of Biological Sciences; Ecological Society of America; Phi Kappa Phi Honor Society; Sigma Xi Honor Society; Society of American Foresters; Soil Science Society of America; Union of Concerned Scientists; World Watch Institute

Professional Organizations Offices Held

President, Fairbanks Chapter of the Phi Kappa Phi academic honor society, 2005-present
Vice President, Fairbanks Chapter of the Phi Kappa Phi academic honor society, 1999-2004
Vice President elect, Fairbanks Chapter of the Phi Kappa Phi academic honor society, 1998
Secretary/Treasurer, Yukon River Chapter of the Society of American Foresters, 1998-1999
## External grants

<table>
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<tr>
<th>Date Granted &amp; Duration</th>
<th>Names</th>
<th>PI/Co-PI?</th>
<th>Project Title</th>
<th>Grant Sponsor</th>
<th>Grant Amount</th>
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<tbody>
<tr>
<td>2002</td>
<td>Yarie JA, Valentine DW, Juday GP (sub-proposal; overall PI = Lewis CE)</td>
<td>Co-PI</td>
<td>New crops for new markets: Carbon cropping the boreal forest of Alaska</td>
<td>USDA CSREES</td>
<td>$100,000 ($595,827 total)</td>
</tr>
<tr>
<td>2003, 3 years</td>
<td>D.W. Valentine</td>
<td>PI</td>
<td>Managing forests to market carbon credits: How does fire fit?</td>
<td>USDA New Crops</td>
<td>$48,000</td>
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<tr>
<td>2004, 1 year</td>
<td>M. Musick, M. Lilly, D.W. Valentine</td>
<td>Project manager</td>
<td>Shaw Creek watershed monitoring program (ABFC)</td>
<td>Alaska DEC</td>
<td>~$97,000</td>
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</tbody>
</table>
Individual Faculty Information for SAF Forestry Program Accreditation

Please include in the CV the following information:

1. Name: David Verbyla

2. Academic Rank, specialization, appointment basis (9- or 12-month, etc.)
   Professor of Geographic Information Systems/Remote Sensing
   9+3 month appointment

3. Academic education background:
   Degrees, institution, major field of study, dates attended, date degree earned or expected.
   B.S., Cook College, Rutgers University, Natural Resources Management, 1979
   M. S., Michigan State University, Park and Recreation Resources, 1982
   Ph. D., Utah State University, Forest Resources, 1989.

4. Professional and research experience:
   Employer, nature of work, title, dates, total years
   1993-present: Assistant/Associate/Full Professor of Remote Sensing/GIS
   Department of Forest Sciences, University of Alaska Fairbanks.
   1990-1993: Visiting Assistant Professor of Remote Sensing/GIS
   Department of Forest Resources, University of Idaho, Moscow, Idaho.
   1988-1990: Assistant Professor of Remote Sensing/GIS
   Department of Natural Resources, University of New Hampshire,
   Durham, NH.
   1983-1988: Statistical Programmer/Research Assistant, Department of
   Forest Resources, Utah State University.

5. Teaching experience:
   Institutions, rank, specialization, dates, total academic years
   1993-present: Assistant/Associate/Full Professor of Remote Sensing/GIS
Department of Forest Sciences, University of Alaska Fairbanks.

1990-1993: Visiting Assistant Professor of Remote Sensing/GIS
Department of Forest Resources, University of Idaho, Moscow, Idaho.

1988-1990: Assistant Professor of Remote Sensing/GIS
Department of Natural Resources, University of New Hampshire,
Durham, NH.

1984-1988: Teaching assistant/Lecturer, Department of Forest Resources,
Utah State University.

6. Dates of appointment and promotions at present institution

1993-present: Assistant/Associate/Full Professor

7. List of bibliographical style publication during the last five years

354pp.

Epting, J. and D. L. Verbyla. 2005. Landscape level interactions of pre-fire
vegetation, burn severity, and post-fire vegetation over a 16-year period in

indices for assessing burn severity in interior Alaska using Landsat TM

Verbyla, D. L. 2004. Assessment of the MODIS Assessment of the MODIS Leaf
Area Index Product (MOD15) in Alaska. International Journal of Remote

Stow, D. A., Hope, A., McGuire, D., Verbyla, D., Gamon, J., Huemmrich, F.,
Houston, S., Racine, C., Sturm, M., Tape, K., Hinzman, L., Yoshikawa, K.,
Tweedie, C., Noyle, B., Silapaswan, C., Douglas, D., Griffith, B., Gensuo, J.,
89(3):281-308.


8. Off-campus consulting, or other professional activities, special honors, recognition, during the past five years

Workshops taught:


9. Membership and offices held in professional organizations

Member American Society For Photogrammetry and Remote Sensing

10. Major professional self-improvement activities during past 10 years (including sabbatical)

1-year sabbatical at University of Montana, 2000-2001
11. External grants and other research funding during the last five years.

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Program/Sponsor</th>
<th>Performance Period</th>
<th>Total Budget</th>
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<tbody>
<tr>
<td>Magnitude and Rates of Lake Drying in</td>
<td>US Fish and Wildlife Service</td>
<td>1/2006-1/2009</td>
<td>$162,000. (Co-PI)</td>
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<tr>
<td>Wetlands on National Wildlife Refuges in Alaska.</td>
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<thead>
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<th>Project Title</th>
<th>Program/Sponsor</th>
<th>Performance Period</th>
<th>Total Budget</th>
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<tr>
<td>Sensing in the Central Alaska Network</td>
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<th>Project Title</th>
<th>Program/Sponsor</th>
<th>Performance Period</th>
<th>Total Budget</th>
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<tr>
<td>Predicting ecosystem trajectories in</td>
<td>Joint Fire Science Program</td>
<td>6/05- 6/07</td>
<td>$467,000. (Co-PI)</td>
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<tr>
<td>burned black spruce forests of Alaska</td>
<td></td>
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<th>Project Title</th>
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<tr>
<td>Using Remote Sensing to Investigate</td>
<td>USDA-MacIntyre Stennis</td>
<td>1/05 – 1/10</td>
<td>$150,000. (PI)</td>
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<td>Landscape-Fire Interactions</td>
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<tr>
<th>Project Title</th>
<th>Program/Sponsor</th>
<th>Performance Period</th>
<th>Total Budget</th>
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<tbody>
<tr>
<td>Bonanza Creek Long Term Ecology</td>
<td>NSF</td>
<td>1/98 – 10/06</td>
<td>$4,200,000 (23 PIs)</td>
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<th>Project Title</th>
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<tr>
<td>The Role of Land Cover Change in High</td>
<td>NASA</td>
<td>9/01- 12/04</td>
<td>$600,000 (Co-PI)</td>
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<tr>
<td>Latitude Ecosystems</td>
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</table>
Individual Faculty Information for SAF Forestry Program Accreditation

1. John Yarie

2. Professor of Silviculture (9+3 appointment)

3. Academic education background:
   Degrees, institution, major field of study, dates attended, date degree earned or expected.
   MS, University of Maine, Forestry, 1973-1975, 1975

4. Professional and research experience:
   Univ. of Alaska Fairbanks; research, teaching and service; Professor of Silviculture, 7/1997 – current; 27 years total

5. Teaching experience: Univ. of Alaska Fairbanks,

<table>
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<tr>
<th>Courses</th>
<th>Dates</th>
<th>Total Academic Years</th>
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<tr>
<td>1) Forest Ecology</td>
<td>1996 - present</td>
<td>10</td>
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<tr>
<td>2) Landscape Mgt of Tropical Ecosystems</td>
<td>2001</td>
<td>1</td>
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<tr>
<td>3) Introduction to GIS</td>
<td>1991 - 1993</td>
<td>3</td>
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<tr>
<td>4) Techniques in GIS</td>
<td>1992, 1993</td>
<td>2</td>
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6. Dates of appointment and promotions at present institution:
   5/1978 – 6/1982; Research Associate
   7/1982 – 12/1986; Visiting Assistant Professor of Forest Ecology and Silviculture
   1/1987 – 6/1991; Assistant Professor of Silviculture
   7/1991 – 6/1997; Associate Professor of Silviculture
   7/1997 – present; Professor of Silviculture

7. List of bibliographical style publication during the last five years

**Refereed Publications:**


Poster Presentations:

Yarie, J. and J. Garron. 2005. Log decomposition dynamics in interior Alaska - Preliminary results of the 10-year time frame. XXII IUFRO World Congress. Brisbane Australia. Poster won one of nine awards out of 850 posters at the meeting.


8. Off-campus consulting, or other professional activities, special honors, recognition, during the past five years

Poster Award, one of nine awards out of 850 posters presented at the International Union of Forest Research Organizations (IUFRO) meeting in Brisbane, August 2005

9. Membership and offices held in professional organizations;

Chairman elect, Yukon River Chapter, Society of American Foresters 2005

Chairman, Yukon River Chapter, Society of American Foresters 2006

10. Major professional self-improvement activities during past 10 years (including sabbatical)


11. External grants and other research funding during the last five years.


Development of components of a GIS Based Forest Ecosystem Model Using Visual Basic within ArcGis. USDA New Crops IV Program (2003-2004). $27,000


Peter J. Fix

Assistant Professor, Outdoor Recreation, 9 + 3 month appointment

Education

<table>
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<tr>
<th>Degree</th>
<th>Institution</th>
<th>Major</th>
<th>Attended</th>
<th>Awarded</th>
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<tr>
<td>Ph.D.</td>
<td>Colorado State</td>
<td>Recreation</td>
<td>1997-2002</td>
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<td></td>
<td>University</td>
<td>Resources</td>
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<td></td>
<td>University</td>
<td>Economics</td>
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<tr>
<td>B.S.</td>
<td>University of</td>
<td>Economics</td>
<td>1988-2003</td>
<td>2003</td>
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<td></td>
<td>Wisconsin La Crosse</td>
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Professional experience

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<th>Employer</th>
<th>Nature of Work</th>
<th>Title</th>
<th>Dates</th>
<th>Total years</th>
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<tr>
<td>University of Alaska</td>
<td>Outdoor recreation research and teaching</td>
<td>Assistant Professor</td>
<td>2002-present</td>
<td>3.5</td>
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<tr>
<td>Fairbanks</td>
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<tr>
<td>Colorado State University</td>
<td>Outdoor recreation research</td>
<td>Research Associate</td>
<td>2000-2002</td>
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<td>University</td>
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<tr>
<td>Colorado State University</td>
<td>Resource economics research</td>
<td>Research Assistant</td>
<td>1995-1996,</td>
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<tr>
<td>University</td>
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<td>1997-2000</td>
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Teaching experience

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<th>Institution</th>
<th>Rank and specialization</th>
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<th>Total academic years</th>
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<tr>
<td>University of Alaska</td>
<td>Assistant Professor, Outdoor Recreation</td>
<td>2002-present</td>
<td>3.5</td>
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<tr>
<td>Fairbanks</td>
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<td></td>
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<tr>
<td>Colorado State University</td>
<td>Instructor, Natural Resource Recreation and Tourism</td>
<td>2000</td>
<td>.5</td>
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<tr>
<td>University</td>
<td></td>
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<tr>
<td>Colorado State University</td>
<td>Teaching assistant, Natural Resource Recreation and Tourism and resource economics</td>
<td>1999-2000, 1996</td>
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Dates of appointment and promotions at present institution

Date of appointment: 19 May 2002
Promotions: currently undergoing 4th year comprehensive review
Publications in past 5 years


Professional organizations

International Association for Society and Natural Resources

Self improvement

Attended several conferences that present the latest research in the field and/or current issues.
- The International Symposium on Society and Resources
- The Alaska Wilderness and Recreation and Tourism Association conference.
- The 2005 World Wilderness Congress
- Human Dimensions of Natural Resources in the Western US.
## External grants

<table>
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<tr>
<th>Date Granted &amp; Duration</th>
<th>Names</th>
<th>PI/Co-PI</th>
<th>Project Title</th>
<th>Grant Sponsor</th>
<th>Grant Amount</th>
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<tr>
<td>3/10/04 - 6/30/05</td>
<td>Fix, P.</td>
<td>PI</td>
<td>Visitor preferences for interpretive services at Wrangell St. Elias National Park.</td>
<td>National Park Service</td>
<td>$10,000</td>
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<td>6/15/03 - present</td>
<td>Fix, P.</td>
<td>PI</td>
<td>Alaska Residents Statistics Program</td>
<td>AKDOT, NPS, BLM, USFS, FWS</td>
<td>$102,500</td>
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<tr>
<td>9/1/03 - present</td>
<td>Fix P.</td>
<td>PI (appt. by Dean Lewis)</td>
<td>North and West Alaska Cooperative Ecosystem Studies Unit</td>
<td>NPS, BLM, USFS, USGS, NRCS</td>
<td>$50,000</td>
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<tr>
<td>8/01/02 - 5/15/04</td>
<td>Fix, P.</td>
<td>PI</td>
<td>North Campus Lands Management Plan</td>
<td>Facility Serv. / UAF</td>
<td>$51,037</td>
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<tr>
<td>7/01/03 - 6/30/04</td>
<td>Edwards, N., P. Fix, T. Mix</td>
<td>Co-PI</td>
<td>Urban sprawl / Commuting in the Anchorage and Fairbanks Metropolitan Areas</td>
<td>EPSCoR / NSF</td>
<td>Total $18,016.81, $5,904 to Fix</td>
</tr>
</tbody>
</table>
Curriculum Vitae of Joshua A. Greenberg

Contact Information

University of Alaska Fairbanks
Department of Resources Management
School of Natural Resources and Ag. Sciences
P.O. Box 757200
Fairbanks, AK 99775

Office: (907) 474-7189
Fax (907) 474-6184
Email l.greenberg@uaf.edu

Education

Ph.D. Agricultural Economics, Washington State University, December 1990.
B.S. Business Administration, University of Connecticut, May 1982

Relevant Experience

Chair, Department of Resources Management, School of Natural Resources and Agricultural Sciences, January 2004 - Present. Appointment 9+3 months
Associate Professor of Economics, Joint Appointment with the Department of Economics, School of Management, University of Alaska Fairbanks, July 2004 - Present
Associate Professor Economics, Department of Resources Management, School of Agriculture and Land Resources Management, University of Alaska Fairbanks, July 1995 - Present.
Assistant Professor of Resource Economics, Department of Resources Management, School of Agriculture and Land Resources Management, University of Alaska Fairbanks, November 1990 - July 1995.

Major Current Professional Membership and Service Activities

Member, Executive Council, Western Association of Agricultural Economics
Member, Crab Plan Team, North Pacific Fishery Management Council
Member of the American Agricultural Economic Association, North American Fisheries Society, Western Agricultural Economic Association, Omicron Delta Epsilon

Courses Taught (all courses taught at UAF)

ECON 235, Introduction to Natural Resource and Environmental Economics, 1 semesters
ECON 335, Intermediate Natural Resource and Environmental Economics, 9 semesters
ECON 636, Natural Resource Economics II, 2 semesters
NRM 310, Agricultural Concepts, 5 semesters
NRM 304, Perspectives in Natural Resource Management, 6 semesters
NRM\BIOVANTH 694, Regional System Dynamics and Modeling, 1 semester
NRM\ECON\BIOVANTH F694 Regional Sustainability and Resilience, 3 semesters
NRM\ECON 637, Natural Resource Policy, 1 semester
Publications Last 5 Years


Sponsored Research Last 5 Years


Alaska Department of Fish and Game. “Regional Economic Impact Assessment of the Alaska Snow Crab Fishery.” July 2001. National Science Foundation, Division of Graduate


Individual Faculty Information for SAF Forestry Program Accreditation

1. Norman R. Harris

2. Assistant Professor of Range Management (9+3 months)

3. Academic education background:

   University of Southern California, Biology, 1972 -1975

4. Professional and research experience:

   Univ. of Alaska Fairbanks, research, teaching and service, Assistant Professor of Range Management, 9/2002 – present, 3 years
   Oregon State University, research and teaching, Research Associate, 6/2001 – 8/2002, 1 year
   Oregon State University, research and teaching, Coordinator for RS/GIS Laboratory, 9/1992 – 6/1997, 5 years
   Oregon State University, research and teaching, Field Coordinator for RS/GIS Projects, 9/1994 – 6/1999, 5 years (overlap of 3 years with above)

5. Teaching experience:

   Univ. of Alaska Fairbanks
   (Assistant Professor)

   **Course**                  **Dates**         **Total Years**
   Intro. to Range Management  2004 – present  2
   GIS and Remote Sensing      2003 – present  3
   for Natural Resources       
   Resource Management Issues  2002 – present  4
   at High Latitudes

   Oregon State University
   (Computer Lab Instructor)

   Landscape Ecology and Analysis 1994 – 2001  8
   Range Management and Planning
   Computer Laboratory Instructor 1991 – 1992  2

6. Dates of appointment and promotions at present institution
9/2002 – present        Assistant Professor of Range Management
Publications (2001-2006)

**Referred Journal Articles/Referred Proceedings:**


Ellis, R.H., D.E. Johnson, D.R. Thomas, N.R. Harris, and A.S. Laliberte (In Review). Effects of a late season grazing management program on fish habitat in Catherine Creek, Union County, Oregon. N. Am. J. of Fisheries Manage.


**Copyrighted Software**
Books


Published Abstracts


7. Off-campus consulting, or other professional activities, special honors, recognition, during the past five years

8. Membership and offices held in professional organizations

Chairman, GIS and Remote Sensing committee, Society for Range Management American Society for Photogrammetry and Remote Sensing

9. Major professional self-improvement activities during past 10 years (including sabbatical)

10. External grants and other research funding during the last five years.


Spatially Modeling the Distribution of Beef Cattle and Reindeer on Ranges at High Latitudes in Alaska, Hatch Funding, (2003 – 2008), $236,945

An Evaluation of the Effectiveness of Livestock Distribution Practices in Grazed Watersheds with Mel George (UCDavis), Douglas Johnson (Oregon State), Derek Bailey (Montana State), Dave Ganskopp (USDA_ARC), (2000 – 2005), $1,500,000
Dr. Patricia S. Holloway  
Professor of Horticulture, 12 month appointment  
117 West Tanana Drive, P.O.Box 757200, University of Alaska, Fairbanks, AK 99775  
(907) 47485651, ffph@uaf.edu

<table>
<thead>
<tr>
<th>Education</th>
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<tbody>
<tr>
<td>1982</td>
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<td>1976</td>
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<table>
<thead>
<tr>
<th>Current Research Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Committee Chair:</td>
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<tr>
<td>Linda Musitano, Non-native weed species abundance in Steese White Mountain area (2007)</td>
</tr>
<tr>
<td>Hatch Federal/State Research Project: Cultivation and Improvement of Horticultural Crops for Alaska including: cultivation, micropropagation and wild stand management of lingonberry, Vaccinium vitis-idaea; variety trials of of native and exotic woody, herbaceous perennial, vegetable, herb and annual plants for Alaska; wildflower cultivation and management; photoperiod and flowering of Cosmos bipinnatus, Alaska native wildflower cultivation and management</td>
</tr>
<tr>
<td>USDA Cooperative State Research and Extension Service New Crop Opportunities, peonies as field grown cut flowers</td>
</tr>
<tr>
<td>USDA Cooperative State Research and Extension Service New Crop Opportunities, antioxidant levels in Alaska wild berries</td>
</tr>
<tr>
<td>USDA Cooperative State Research and Extension Service New Crop Opportunities, tissue culture propagation of lingonberry</td>
</tr>
<tr>
<td>USDA Cooperative State Research and Extension Service New Crop Opportunities, cold hardiness of woody plants</td>
</tr>
<tr>
<td>USDA Cooperative State Research and Extension Service New Crop Opportunities, Peony Cultivar trials, assessment and field cultivation techniques.</td>
</tr>
<tr>
<td>USDA NC-7 Regional Plant Evaluation Program, Cooperator</td>
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<tr>
<td>Hardy Fern Foundation, satellite test garden for hardy ferns</td>
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<thead>
<tr>
<th>Research Experience</th>
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<tbody>
<tr>
<td>1978 - 1980 Research Assistant, University of Minnesota. Ph.D. research on plant reproduction, phenology, cold acclimation, growth regulator effects on fruiting, cultural requirements, rest period requirements of lingonberry, Vaccinium vitis-idaea.</td>
</tr>
<tr>
<td>1977 Research Associate, University of Alaska Fairbanks. General field, greenhouse and laboratory work including planting and maintenance of vegetable variety trials, production of greenhouse bedding plants, tomatoes and cucumbers; designed and implemented experiments on the vegetative propagation of native Alaska tree and shrubs for the U.S. Forest Service.</td>
</tr>
<tr>
<td>1976 Research Assistant, University of Alaska. Field, greenhouse and laboratory work; micropropagation of Fragaria x ananassa and various ornamentals; experimentation with hydroponics (NFT) for greenhouse vegetable crops production.</td>
</tr>
<tr>
<td>1975 Research Aid, University of Alaska. General field, greenhouse and laboratory work in horticulture.</td>
</tr>
<tr>
<td>1974 - 1976 Master’s degree research, Washington State University. An economic survey of plants native to Washington and Oregon to determine their market potential as ornamentals, fruit crops, medicinals, etc.</td>
</tr>
<tr>
<td>1973 Undergraduate research, Millersville University. A study of magnesium deficiency in Phaseolus vulgaris by hydroponic culture.</td>
</tr>
<tr>
<td>1972 Laboratory technician, Millersville University. Cytotaxonomy of Pennisetum spp.</td>
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<th>Current Teaching Responsibilities</th>
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<tbody>
<tr>
<td>NRM 102 Practicum in Natural Resources Management, every semester</td>
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<tr>
<td>NRM 213 Greenhouse Management, spring semester annually</td>
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</tbody>
</table>
NRM 215 Plant Propagation, fall semesters annually
NRM 405/406 Senior Thesis in Natural Resources Management, course coordinator and faculty advisor, fall and spring semesters. Major advisor: Jason Downing 1997, Useful Native Plants for Southeast Alaska
NRM 602 Graduate Research Methods, Lecture in research publishing, annually
Summer Non-credit short courses at the Georgeson Botanical Garden
Pruning Primer, Learning about Flowers (for children), Trees and Shrubs for Home landscapes, Propagation of plants by cuttings, Propagation of plants by seeds, Fern culture and propagation, Seed Gathering for Parents and Children, Propagating Perennials
Numerous independent studies
Undergraduate Academic advisor

Professional Experience/Employment, University of Alaska Fairbanks

2004- present Professor of Horticulture
School of Natural Resources and Agricultural Sciences, University of Alaska Fairbanks
1989 - 2004 Associate Professor of Horticulture
School of Natural Resources & Agricultural Sciences, University of Alaska Fairbanks
1984 - 1989 Assistant Professor of Horticulture
School of Natural Resources & Agricultural Sciences, University of Alaska Fairbanks
1982 - 1983 Lecturer and Instructor
School of Agriculture & Land Resources Management, Cross Cultural Education Program,
University of Alaska Fairbanks

Publications, past five years
2003. University of Alaska Fairbanks Agricultural and Forestry Experiment Station Circ 124.

Recognition, Consulting, Awards past five years

2003 Academic Who’s Who in Agriculture Higher Education
2001-present Consultant, Sunset Magazine, Northern Horticulture

Professional Affiliations

American Assoc. of Botanical Gardens & Arboreta
International Plant Propagator’s Society
American Pomological Society
Self Improvement Activities, Past Five Years

- Course: Statistical methods for research and development, Creascience Consultants, Quebec, 2004
- Sabbatical: Structure and function of botanical gardens related to Land Grant Colleges, 2002
- Course: Methods of Distance Delivery Education, Purdue University, 2001
- 1985, 87, 89, 98, 01, 03; poster session 1987, 89.
- American Society for Horticultural Science - attended conferences, presented posters, 02, 04
- Circumpolar Agriculture Conference, poster presentation, Akureyri, Iceland 2001
- International Society for Horticultural Science Symposium on Vaccinium culture - attended Madison, Wisconsin 1988, presentation, Termas de Chillan, Chile 2000

Funding (Proposals, Contracts, etc, Past 5 Years) (Career total through September 2005: $2,177,766)

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<tr>
<th>Year</th>
<th>Source</th>
<th>Amount</th>
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<tr>
<td>2005</td>
<td>Processing of Alaska Products/Wild berries (with Dinstel)</td>
<td>$386,000.00</td>
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<tr>
<td>2005</td>
<td>State of Alaska Senior Employment Program</td>
<td>$2000.00</td>
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<tr>
<td>2005</td>
<td>Geogeson Botanical Garden Programs</td>
<td>$152,958.00</td>
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<tr>
<td>2005</td>
<td>USDA/CSREES New crop opportunities/cold hardiness</td>
<td>$85,000.00</td>
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<td>2004</td>
<td>USDA CSREES New Crop Opportunities/Peonies</td>
<td>$51,232.00</td>
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<tr>
<td></td>
<td>Walter and Marita Babula Children's Garden</td>
<td>$48,000.00</td>
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<td>2003</td>
<td>Walter and Marita Babula Children's Garden</td>
<td>$25,000.00</td>
</tr>
<tr>
<td></td>
<td>Geogeson Botanical Garden Programs</td>
<td>$69,233.00</td>
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<td>2002</td>
<td>Geogeson Botanical Garden Programs</td>
<td>$108,051.00</td>
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<tr>
<td></td>
<td>USDA CSREES New Crop Opportunities/Lingon tissue culture</td>
<td>$75,000.00</td>
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<td></td>
<td>State of Alaska Senior Employment Pgm Commission on Aging</td>
<td>$9,287.00</td>
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<tr>
<td>2001</td>
<td>USDA CSREES New Crop Opportunities/salt tolerance</td>
<td>$35,000.00</td>
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<tr>
<td></td>
<td>USDA CSREES New Crop Opportunities/antioxidants of berries with R. Leiner</td>
<td>$60,000.00</td>
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<td></td>
<td>USDA CSREES New Crop Opportunities/Peonies Phase 2</td>
<td>$13,200.00</td>
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<td>State of Alaska Senior Employment Pgm Commission on Aging</td>
<td>$12,702.00</td>
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<td>Geogeson Botanical Garden Programs</td>
<td>$68,480.00</td>
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<td>USDA CSREES New Crop Opportunities/Peonies 1 with C. Lewis</td>
<td>$36,000.00</td>
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<td>USDA CSREES New Crop Opportunities/pollination biology</td>
<td>$32,000.00</td>
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<td>Geogeson Botanical Garden Programs</td>
<td>$53,150.00</td>
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<td>State of Alaska Senior Employment Pgm Commission on Aging</td>
<td>$12,000.00</td>
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<td></td>
<td>USDA Farmer/Rancher Grant, with M. Emers, M. Hiebert</td>
<td>$5,000.00</td>
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<tr>
<td></td>
<td>Geogeson Botanical Garden Programs</td>
<td>$41,113.00</td>
</tr>
</tbody>
</table>
CURRICULUM VITAE
MERIAM G. KARLSSON
Professor of Horticulture (12-month appointment)
Department of Plant, Animal and Soil Sciences
University of Alaska Fairbanks
PO Box 757200
Fairbanks, Alaska 99775-7200
phone: (907) 474-7005, e-mail: ffmgk@uaf.edu

EDUCATION
Bachelor of Science, Horticulture, Swedish University of Agricultural Sciences, Alnarp, Sweden, 1979.

PROFESSIONAL EXPERIENCE/EMPLOYMENT
Professor of Horticulture, University of Alaska Fairbanks, Department of Plant, Animal and Soil Sciences,
Fairbanks, Alaska. July 2002 to present. Research, teaching and service in environmental physiology of
greenhouse produced plants.
Associate Professor of Horticulture, University of Alaska Fairbanks, Department of Plant, Animal and Soil
physiology of greenhouse produced plants.
Sabbatical Leave, Department of Plant Physiology and Microbiology, University of Tromsø, Norway. January
through June 1994. Research on the effects of temperature, photoperiod and light quality on flower formation,
plant growth and development.
Assistant Professor of Horticulture, University of Alaska Fairbanks, Department of Plant and Animal Sciences,
physiology of greenhouse produced plants.
Visiting Scholar, Michigan State University, Department of Horticulture, East Lansing, Michigan 48824. January,
1988 through August, 1988. Revised teaching manual for greenhouse potted plant production and developed
an expert system for timing and height control of Easter lily.

TEACHING AND INSTRUCTIONAL ACTIVITIES
Introduction to Applied Plant Science, NRM 211, lectures and lab, 1989 to present.
Orientation to Natural Resources Management, NRM 106, 2000 to present.
UAF Academic Advising Center, undergraduate faculty advisor, 1991 to present.
Academic advisor for 30 to 40 undergraduate students majoring in natural resources management.

PUBLICATIONS
1014. (Abstr.)
International Symposium on Artificial Lighting in Horticulture, Abstract no. 18, page 53. Lillehammer,
Norway. (Abstr.)
Communications, Inc. 15(12): 38-40.
the International controlled environment meeting 2004, abstract number 46, page 75. Australasian controlled
environment working group, Brisbane, Australia. (Abst.)

HONORS, AWARDS, RECOGNITION
Merit Bonus 2002-03, School of Natural Resources and Agricultural Sciences, Office of the Dean, University of Alaska, Fairbanks, Alaska.
PROFESSIONAL ORGANIZATIONS
American Society for Horticultural Science
Chair and Chair-elect Growth chamber and controlled environment working group
Associate Editor Journal of the American Society for Horticultural Science
Chair and Member Ornamental publication award selection committee
Reviewer Hort Technology, HortScience and Journal of the American Society for Horticultural Science
International Society of Horticultural Science
American Association for the Advancement of Science
USDA North Central Region NCR-101 committee on use and technology in controlled environments
Society of American Florists
Ohio Florists Association

PROFESSIONAL SELF-IMPROVEMENTS AND TRAINING
International Society of Horticultural Science 5th International Symposium on Artificial Lighting in Horticulture, Lillehammer, Norway.
International controlled environment meeting. Australasian controlled environment working, UK environmental working group and the NCR-101 committee on use and technology in controlled environments. Brisbane, Australia.
2003: 100th Annual International Conference of the American Society for Horticultural Science, Providence, Rhode Island.
1999: 96th International Conference of the American Society for Horticultural Science, Minneapolis, Minnesota.
1997: 94th International Conference of the American Society for Horticultural Science, Salt Lake City, Utah.

RESEARCH FUNDING
Individual Faculty Information for SAF Forestry Program Accreditation

Please include in the CV the following information:

1. Julie Lurman

2. Assistant Professor of Resources Law and Policy, 9+3 appointment

3. Academic Education Background:

   **Georgetown University Law Center**, Washington, DC, 2000- 2003 J.D.

   **Yale School of Forestry and Environmental Studies**, New Haven, CT, 1997-1999, M.E.S. in Environmental Policy and Management

   **Rutgers University**- Cook College, New Brunswick, NJ, 1993-1997
   B.S. High Honors in Natural Resources Management
   Area of Concentration: Applied Ecology
   Minor: Environmental Economics

4. Professional Experience:

   **Assistant Professor of Resources Law and Policy**, University of Alaska-Fairbanks, School of Natural Resources and Agricultural Sciences 2004-present
   Tripartite tenure-track position: teaching, research, and outreach.

   **Legal Intern**, U.S. Department of Justice, Washington, DC, 2002
   Assigned to the Environmental and Natural Resources Division. Reviewed
   consent decrees and prepared court documents in preparation for, and in the
   course of litigation. Drafted general legal and environmental research and
   memoranda.

   **Summer Associate**, Perkins Coie L.L.P., Portland, OR, 2002
   Researched and wrote legal memoranda pertaining to active client matters. Topics
   included specific questions of litigation procedure, Clean Air Act, Clean Water
   Act, endangered species, solid and hazardous waste, and other federal, state, and
   local environmental issues.

   **Research Assistant**, Environmental Law and Policy Institute, Washington, DC,
   2001-2002
   Co-wrote article for publication on connection between the Endangered Species
   Act and Fifth Amendment property takings doctrine.
**Interpretive Ranger**, Tetlin National Wildlife Refuge, Tok, AK, 2000
Developed and executed education lectures for visitors and educational programs for local children. Developed informational literature on issues of biological, environmental, educational, and safety concern.

Provided litigation support, including document review and analysis, as well as regulatory compliance support and auditing, for corporate clients.

**Intern**, Environmental Protection Agency, Washington, DC, 1998
Liason with industry representatives to track changes resulting from EPA’s Consumer Labeling Initiative (CLI). Cultivated Links between the CLI program and other relevant programs, both inside and outside the agency. Developed official EPA position papers regarding 1997-1998 Organization for Economic Cooperation and Development proceedings on ecolabeling standards.

5. Publications


6. Membership in professional organizations:

- Member American Bar Association
- Member New York Bar Association
- New York State Law License
- New Jersey State Law License

7. Major professional self-improvement activities during past 10 years
- Yearly Continuing Legal Education courses

8. External grants and other research funding during the last five years:

Hatch: received 2004, duration 5 years, project entitled “When Laws Affecting the Environment Conflict: Focus on Public Lands,” grant amount $19,260 per year.

EPSCOR: received 2004, duration 3 years, part of Resilience and Adaptation program, grant amount approximately $18,340 per year.
Curriculum Vitae for Stephen D. Sparrow

Name: Stephen D. Sparrow

Academic Rank: Professor and Associate Dean

Specialization: Soil Science, Agronomy

Appointment Basis: 12 months

Academic Background:
B.S., North Carolina State University, Soil Science, 1965 - 1969, degree awarded in 1969

Professional Experience:
Nature of work: research, teaching, administration
Title: Professor of Agronomy and Associate Dean
Total years: 25

Teaching Experience:
University of Minnesota, Soil Microbiology, 1980
University of Alaska Fairbanks, Soil Biology, Soil Management, Research Methods,
Perspectives in Natural Resources Management, 1981- present
Total years: 26

Dates of Appointment at present Institution:
Hired as assistant professor, 1981
Promoted to associate professor and tenured: 1986
Promoted to professor: 1991
Appointed associate dean (1/2 time): 2003

Publications, last five years:

Referred journal articles:


**Recent AFES/SNRAF publications**


**Off-campus consulting:** None

**Membership and offices held in professional organizations:**

- **Offices:** None
- **Membership:**
  - American Society of Agronomy
  - American Society for Microbiology
  - Circumpolar Agriculture Association
  - Soil Science Society of American

**Major professional self-improvement activities during last 10 years:** None

**External grants and other research funding during the last five years:**

<table>
<thead>
<tr>
<th>Date Granted &amp; Duration</th>
<th>Names</th>
<th>PI/Co-PI?</th>
<th>Project Title</th>
<th>Grant Sponsor</th>
<th>Grant Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001, 5 yrs</td>
<td>Sparrow</td>
<td>PI</td>
<td>Cicer milkvetch, forage galega, and lupinaster clover as potential forage crops for Alaska</td>
<td>USDA-CSREES (Hatch)</td>
<td>variable</td>
</tr>
<tr>
<td>2001, 5 yrs</td>
<td>Zhang, Sparrow</td>
<td>Co-PI</td>
<td>Selection, variety testing, and evaluation of cultural practices for alternative crops in Alaska</td>
<td>USDA-CSREES (Hatch)</td>
<td>variable</td>
</tr>
<tr>
<td>2003, 3 yrs</td>
<td>Wright, Sparrow</td>
<td>Co-PI</td>
<td>Alaska Seed Grower’s Assistance Project</td>
<td>USDA-CSREES</td>
<td>$301,834</td>
</tr>
<tr>
<td>2004, 3 yrs</td>
<td>Sparrow</td>
<td>PI</td>
<td>Irrigation to enhance production of new and existing crops in Alaska</td>
<td>USDA-CSREES</td>
<td>$26,000</td>
</tr>
</tbody>
</table>
Individual Faculty Information for SAF Forestry Program Accreditation
Please include in the CV the following information:

1. Name
   Dr. Susan Todd

2. Academic Rank, specialization, appointment basis (9- or 12-month, etc.)
   Associate Professor of Resource Management Planning. 12 month appointment

3. Academic education background:

4. Degrees, institution, major field of study, dates attended, date degree earned or expected.
   1995    Ph.D. in Natural Resources, emphasis in Environmental Mediation.
            University of Michigan, Ann Arbor.
   1979    M.A. in Regional Planning, University of Michigan, Ann Arbor.
   1975    B.A. in Biology, Bryn Mawr College, Philadelphia.

5. Professional and research experience:
   Employer, nature of work, title, dates, total years

   *Associate Professor of Resource Planning*, 1995 - present, Department of Resources
   Management, School of Agriculture and Land Resources Management, University of
   Alaska-Fairbanks.

   *Chief Mediator, The Fortymile Caribou and Wolf Management Plan*, a cooperative effort
   of the National Park Service, the Fish and Wildlife Service, the Bureau of Land
   Management, the Alaska Department of Fish and Game and a citizen planning team of
   16 diverse public interest representatives. 1995. In addition to helping the team craft
   their agreement, I also facilitated the public meetings on the Draft Plan.

   *Dissertation Research: Establishing Negotiating Teams for Environmental Disputes, An
   Analysis of Three Wolf Management Plans*, 1995, under advisors Julia Wondolleck,
   Steve Yaffee and James Crowfoot, well-known authors in the field of environmental
   policy and mediation.

   *Visiting Assistant Professor of Resource Planning*, 1990 - 1995, Department of Resources
   Management, School of Agriculture and Land Resources Management, University of
   Alaska-Fairbanks


   Department of Natural Resources, Tanana River Basin Management Plan.
   Mediated the development of a management plan for 12 million acres of state land.
   Assisted a diverse planning team of 13 members to craft an agreement which settled
   dozens of public land management issues. Conducted more than 60 public meetings in
   21 different communities.

   and US AID. Analyzed several agro-forestry projects in the Philippines, Fiji, Samoa,
Tonga and the Solomon Islands to determine which projects had the most merit for Peace Corps forestry efforts.


Biological Technician and Computer Programmer, 1975 - 1976, Institute of Northern Forestry, U.S. Forest Service, Fairbanks, Alaska. Maintained meteorological instruments for the Taiga Biome Study sponsored by NSF and performed the programming necessary to digitize and analyze the data.

6. Teaching experience:
   University of Alaska Fairbanks, Assistant-Associate Professor, Resource Planning, July 1990 to present, 15.5 academic years

7. Dates of appointment and promotions at present institution
   1996, Assistant Professor, Resource Planning
   2002, Associate Professor, Resource Planning

8. List of bibliographical style publication during the last five years


9. Off-campus consulting, or other professional activities, special honors, recognition, during the past five years
10. Membership and offices held in professional organizations
   Society and Natural Resources
   International Association for Public Participation
   American Planning Association

11. Major professional self-improvement activities during past 10 years (including sabbatical)

   Association for the Study of Literature on the Environment
   International Association for Public Participation
   Organization of Wildlife Planners
Curriculum Vitae

Mingchu Zhang, Ph.D.

Current position: Assistant professor of soil science (12-month appointment)
Department of Plant, Animal and Soil Science
School of Natural Resources and Agricultural Sciences
University of Alaska Fairbanks

Address: 905 N Koyukuk Dr.
321 O’Neill Bldg
Fairbanks AK 99775-7200
Phone: 907 474-7004
Fax: 907 474-6184
e-mail: ffmz@uaf.edu

EDUCATION

Current courses of teaching:
1. Soil and Environment, NRM 380
2. Environmental Soil Chemistry, NRM 466
3. Soil Management, NRM 480

Employment History
August 2003 – Present: Assistant professor of agronomy and soil science, School of Natural Resource and Agricultural Sciences, University of Alaska Fairbanks.
Jan. 1993 – Nov.1997: Research associate at the University of Alberta, Edmonton, Alberta,
Selected published journal articles in last five years


Selected conference proceedings and presentations in the last five years


External grants and other research funding during last five years

1) Selection, variety testing, and evaluation of cultural practices for alternative agronomic crops in Alaska. (USDA Hatch)
2) Yield and quality of barley and bromegrass as affected by zero/minimum tillage, fertilizer rate and cutting regimes. (USDA Hatch)
3) Assessing nitrogen mineralization and other diagnostic to refine nitrogen rates for crops and minimize losses. (USDA multi-state)