

BIOL 4900C Senior Seminar [CRN 25099]

Spring Semester 2021

Instructor: Dr. Carter

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Herbarium: BC 1040

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Weekly Schedule

~~Science Seminar Series, Tuesday 12:30–1:30 PM has been cancelled because of the Covid-19 crisis.~~

Senior Seminar: Wednesday, 5:00–6:50 PM, in BC 3009

Office Hours: All office hours will be remote via the Collaborate Ultra link available through Blazeview. Mon. & Wed., 11:00–11:50 AM; Thurs., 1:00–1:50 PM; Fri., 2:00–2:50 PM; other times by appointment. Also, on those Wednesdays we do not have scheduled face-to-face meetings during the 5:00–6:50 PM time slot, you may contact your instructor at least four hours in advance and schedule a remote consultation session through Collaborate Ultra in Blazeview. Note: If your instructor does not appear to be available on-line, then please send him an email or phone call to let him know you are waiting.

Use of BlazeVIEW D2L. Blazeview D2L will be used to facilitate communication between instructor and students and to disseminate various course materials and information and to administer assessments. Students are expected to log onto Blazeview daily to check for announcements and updates and to use Blazeview Mail for communication relating to the course.

Course Description. Pre- or Co-requisite: Completion of all required courses in the senior curriculum for the biology major. Graded “Satisfactory” or “Unsatisfactory.” The capstone course in biology. Students are required to attend outside lectures chosen by the instructor. This course assesses students’ ability to research independently topics in biology, assimilate the information, and disseminate the information in an organized and understandable fashion in both written and oral forms. Besides demonstrating comprehension of their topic and competence in communication skills, students take the ETS Major Field Test in biology and complete the departmental Senior Exit Questionnaire for successful course completion. [0-3-1]

Course Objectives. The purpose of this course is to assess the ability of senior-level students to research a topic in biology independently, to assimilate information, and to disseminate information logically in both written and oral form. Besides demonstrating comprehension of their topic and competence in communication skills, students must satisfactorily complete the ETS Major Field Test in Biology and complete the departmental Senior Exit Questionnaire for successful completion of the course.

Major Field Test [MFT]. The Biology Major Field Test is a comprehensive, standardized test designed to evaluate the student’s general knowledge in the sub-

disciplines of biology. The test scores will be used to evaluate the effectiveness of the department's curriculum, and VSU's scores will be compared to the national average to identify possible areas of weakness in our curriculum. Thus, students should take the test seriously and make every effort to excel on it. Completion of the Major Field Test with a score of 140 or higher is a course requirement, and students who fail to complete the Major Field Test will receive a grade of unsatisfactory for the course.

Each student must contact the Office of Testing to schedule a time to take the Major Field Test. With regard to scheduling an appointment to take the Major Field Test, the Office of Testing has provided the following statement: Due to social distancing guidelines, there is a limited number of appointments available and a strict no walk-in policy – no exceptions will be made. Students must schedule through the following link: <https://www2.registerblast.com/valdosta/Exam/List>.

Students must complete the Major Field Test before the March 4th midterm date. A fee is assessed to take the Major Field Test. However, the Biology Department will pay the fee for each student to take the test once. Students who fail to score at least 140 have the option of re-taking the test until a score of 140 is achieved; however, the student will bear the cost for any re-taking of the Major Field Test. If the instructor has not received a report from the Testing Center of a score of at least 140 by 5:00 PM Friday, April 30, 2021, the student will receive a grade of Unsatisfactory (U) for the course. For more information on the Major Field Test in Biology please refer to the ETS website. (<http://www.ets.org/mft/about/content/biology>).

Senior Exit Questionnaire [SEQ]. All students are required to complete the departmental Senior Exit Questionnaire. Your instructor will allocate one of the scheduled meeting times early in the semester to facilitate administer the SEQ. Failure to complete the SEQ will result in a grade of Unsatisfactory (U) for the course.

Virtual Science Seminars. Although face-to-face science seminars are normally scheduled for Tuesdays at 12:30 PM, all seminars will be virtual this semester because of the Covid-19 crisis. Each student is required to complete and submit via Blazeview a 3-2-1 assessment for five (5) of these virtual seminars. Links for approved virtual seminars will be posted in Blazeview at approximately biweekly intervals, and students will be given one week to complete the 3-2-1 assessment for each of these seminars. Students are forewarned that time will not be extended beyond the very generous period of one week that is allowed for completion of the 3-2-1 assessment for each Virtual Science Seminar, unless a valid written excuse and appeal, with documentation, are made to the instructor via Blazeview Mail, within one week of missing the deadline. The instructor will determine the validity of any and all excuses, and these deadlines will not be extended in the absence of compelling justification with documentation.

Plagiarism. Recognition of and respect for the ownership of property is one of the distinguishing features of civilization. Ideas come from individuals and are effectively owned by their originators; thus, ideas are intellectual property. In the academic sphere, we frequently deal with the ideas of others, most often in published form. As

with tangible property, intellectual property is subject to ownership and protection. Moreover, publication establishes ownership of intellectual property. It is essential that we respect the ideas and writing of others and that we scrupulously cite all sources of any and all ideas that are not our own.

Random House Webster's College Dictionary (2000) defines **plagiarism** as "the unauthorized use of the language and thoughts of another author and the representation of them as one's own." There are many forms of plagiarism. Perhaps the most blatant form is copying from some other source without citing that source. Other types of plagiarism include using a paper written by another and presenting it as your own work or the improper citation of references. When paraphrasing, the author of the paraphrased material must be properly cited, and, when words are taken directly from another source, their author must be properly cited and any quoted passages must be placed within quotation marks for short quotations or in a separate paragraph properly formatted with special indentation for longer quoted passages. However, no direct quotations will be allowed in your term paper, only properly paraphrased ideas, data, or information, and any original ideas, observations, and conclusions that you might have. Proper citation of all references used is essential: Incomplete and inaccurate citation of references is plagiarism. Additionally, the following statement from the Writing Tutorial Services website at Indiana University is useful.

To avoid plagiarism, you must give credit whenever you use

- another person's idea, opinion, or theory;
- any facts, statistics, graphs, drawings – any pieces of information – that are not common knowledge;
- quotations of another person's actual spoken or written words; or
- paraphrase of another person's spoken or written words.

<http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>;
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Plagiarism is theft of intellectual property, and the simplest way to avoid plagiarism is to give credit where credit is due, *meticulously!* It is imperative that the term paper be the student's own original work. Plagiarism will not be tolerated, and any student caught plagiarizing shall receive a failing grade on the term paper and a grade of unsatisfactory for the course. Please be forewarned that various web search engines will be used to check for plagiarism. Each student will be required to complete successfully the Syllabus and Plagiarism Awareness Assessment on-line through BlazeVIEW the first week of the semester.

Outline of Term Paper. An outline of the term paper beginning with a title page and concluding with Literature Cited section (list of references, accurately and properly formatted) is required. The outline should include the general sections or subheadings of the paper comprising at least four levels, followed by the Literature Cited section. The outline must be double-spaced, left-justified, and printed using 12-point Arial font. Below is an example of a portion of an outline with four levels. Since the oral presentation and term paper are devoted to the same topic, logically, the outline will pertain to both. Each student should submit her/his outline of the term paper as a MS

Word file through the Outline assignment link in Blazeview. The due date for the outline is provided below in the course schedule.

I. Introduction

A. History of knowledge about *Azolla-Anabaena* symbiosis

B. General nature of *Azolla-Anabaena* symbiosis

1. Symbiosis vs. mutualism

2. Extent of symbiosis within *Azolla*

i. Number of species

ii. Distribution of species

iii. Proportion of species exhibiting symbiosis with *Anabaena*

3. Extent of symbiosis within *Anabaena*

i. Number of species

ii. Distribution of species

iii. Proportion of species exhibiting symbiosis with *Azolla*

C. Significance of *Azolla-Anabaena* symbiosis to humans

1. Historical

2. Current

D. Statement of specific points to be discussed

II. Discussion

A.

Term Paper. Throughout, including title page and literature cited section, the term paper must be double-spaced, left-justified, and in 12-point Arial font. Excluding the title page, each page must be numbered at the bottom center of the page, and margins must be one inch on all sides. Numbering of pages should begin with the first page of the Introduction, not the title page. Excluding title page, tables and figures (if used) and literature cited, the body or text of the term paper must be no shorter than five (5) pages and no longer seven (7) pages. Excessive margins (i.e., greater than one inch) and

spacing will be deducted in determining whether the five (5) page minimum requirement has been met.

The term paper should begin with a **Title Page** (un-numbered) that shall include the title of the paper, name of the author, course title and number, name of instructor, and the submission date. As is the case with a good story, the body of the term paper should have a beginning (introduction), a middle (discussion), and an end (conclusion). Under the heading of **Introduction**, the body of the paper shall begin with a general introduction to the topic. The introduction should be a brief synthesis of the knowledge in the area of research and the principal points and questions that will be examined in the Discussion section, citing references where appropriate. Under the heading of **Discussion**, the introduction is followed by a detailed discussion of the subject containing references to specific scientific studies. Here, the subject should be discussed in detail, citing references where appropriate. Finally, under the heading of **Conclusions**, the body of the term paper concludes with a summary based upon the student's interpretation of the articles and a summary of the current state of knowledge on the topic, suggesting additional kinds of research or analyses that might be done to explore the topic more fully or answer questions posed in the Discussion section. Of course, references should be cited where appropriate. The final section of the term paper is headed **Literature Cited** and must include at least seven (7) published references, at least five (5) of which must be primary literature, i.e., articles from scientific journals. Bear in mind that review articles are derived from the primary literature and, therefore, are not primary literature, but are more comparable with a textbook, and will be counted as such in grading your paper. All references listed in the Literature Cited section must be cited at least once in the body of the paper. Each reference must be cited at the end of the appropriate sentence or section by author's last name and year enclosed in parentheses (cf. Citation of References below for specific examples). If used at all, tables and figures should be numbered sequentially and placed in order (tables before figures) after the literature cited section. Although it is unlikely that tables and figures will be used, should they be used, they do not count toward the minimum required page limit. Each student should submit her/his term paper as a MS Word document through the Term Paper assignment link in BlazeView. The term paper MS Word document and oral presentation PowerPoint document are due simultaneously by noon (12:00 PM) of the day of your scheduled oral presentation.

Further restrictions on numbers and types of references. No more than one book or review article shall be used or cited. Web sites, databases, and web pages shall neither be used, nor cited as sources. Unpublished theses and dissertations shall neither be used, nor cited as sources.

Restrictions on use of direct quotations. Direct quotations are not allowed. As mentioned previously, all information gleaned from other sources must be paraphrased in the student's own words and the source properly cited to avoid plagiarism.

Use primary sources! Also, be aware that the introductions of most journal articles include a brief review of the research topic in which earlier works (usually primary

sources) are cited. Although review articles and most books are secondary sources, they can provide easy entry into the body of literature on a topic. When the author of a review or book cites ideas, data, or results from another work, then it is the student's responsibility to go to the original source, read it thoroughly and critically, and, if used, to cite it.

Citation of References. Citations within the body of the paper should be enclosed within parentheses and should include the author's last name and the year of publication. For citations of references with two authors, last names of both authors should be given. For citations of references with more than two authors, the last name of the primary (first) author should be given, followed by the Latin abbreviation *et al.* Bear in mind that "et al." is an abbreviation for *et alia*, which means *and others*, hence the period after the abbreviation for *alia*, *al.* The following are examples: (Cronquist 1981); (McNaughton and Wolf 1973); and (Chase et al. 2000). If multiple sources are used for an idea or related ideas or information presented together, then they should be cited chronologically in the body of the paper as follows: (Baker 1965; Chase et al. 2000; Petřík 2003). All references, including books, must be cited where appropriate in the body of the paper and listed in alphabetical order by author name(s) in the **Literature Cited** section at the end of the term paper in one of the following formats, depending upon the type of reference. The Literature Cited section should include only references that are cited internally in the body of the paper.

For articles in periodicals/scientific journals:

- Petřík, P. 2003. *Cyperus eragrostis* – a new alien species for the Czech flora and the history of its invasion of Europe. *Preslia, Praha* 75:17-28.
- Simpson, D. A. and C. A. Inglis. 2001. Cyperaceae of economic, ethnobotanical, and horticultural importance: a checklist. *Kew Bulletin* 56:257-360.

For books by a single author or a group of authors:

- Cronquist, A. 1981. *An integrated system of classification of flowering plants*. Columbia University Press, New York. 1262 pp.
- McNaughton, S. J. and L. L. Wolf. 1973. *General ecology*. Holt, Rinehart and Winston, Inc. New York. 710 pp.
- Reed, C. F. 1977. *Economically important foreign weeds*. Agriculture Handbook No. 498. United States Department of Agriculture. Washington, D.C. 746 pp.

For chapters in books:

- Baker, H. G. 1965. Characteristics and modes of origin of weeds, Pp. 147-172, in: Baker, H. G. and G. L. Stebbins (Eds.), *The genetics of colonizing species*. Academic Press, NY.
- Chase, M. W., D. E. Soltis, P. S. Soltis, P. J. Rudall, M. F. Fay, W. H. Hahn, S. Sullivan, J. Joseph, M. Molvray, P. J. Kores, T. J. Givnish, K. J. Sytsma and J. C. Pires. 2000. Higher-level systematics of the monocotyledons: an assessment of current knowledge and a new classification, Pp. 3-16, in: Wilson, K. L. and D. A. Morrison (Eds.), *Monocots: Systematics and evolution*. CSIRO Publishing, Collingwood, Victoria.

Miscellaneous Instructions. Before beginning your research, become proficient with the system required by your instructor for proper citation of references. When photocopying articles or other materials, use the models provided by your instructor as guides to write the full reference citation, properly formatted, at the top of the first page of photocopied material. Errors can be readily corrected with minimal difficulty, if a good sharpened pencil is used instead of a pen.

Bear in mind that the student is expected to read and comprehend all cited materials. As each source is read and studied, notes should be taken with proper documentation, including the full reference citation. Detailed and precise citation of the range of page numbers for each journal article and total number of pages for each book are essential documentation. Note cards or larger sheets are useful to keep track of notes and documentation. Although direct quotations are prohibited in the term paper, if your notes include direct quotations, then set these off using quotation marks to avoid errors of plagiarism later. All sources of information should be accurately and scrupulously recorded at this stage of your research to avoid errors of plagiarism later.

I should reiterate here that direct quotations will not be allowed on the term paper; therefore, it is imperative that you paraphrase all ideas, data, or information of others in your own words and properly cite the sources of the paraphrased material. Also bear in mind that your term paper should provide evidence that you understand the content of your work and that you have assimilated and integrated ideas from a variety of sources. A long, unbroken string of citations of the same source certainly suggests over-reliance on a single source and lack of integration from multiple sources, and this is to be avoided. Read from a variety of sources, fully documenting each on note cards or sheets of paper, and develop concepts as you go. Then synthesize these concepts into a series of coherent sentences in your own words, citing all sources of information, data, or ideas within the body of the paper. *Procrastinators beware!* This requires time and effort and cannot be done effectively at the last minute.

Oral Presentation. Each student will be required to make an oral presentation on his/her research topic and will be allocated a total of 20 minutes for this presentation, including five minutes for questions. Bear in mind that both Term Paper and Oral Presentation will be devoted to the same research topic. Oral presentations will be made during the last four or five weeks for the semester, and each student will be assigned a date and time for her/his presentation during the first few weeks of the semester. During the first 12–15 minutes of the presentation, the student will stand and discuss the topic, and the remaining five minutes will be reserved for questions and general discussion. PowerPoint is recommended as the medium for oral presentations. Student presenters are urged to practice their oral presentations prior to delivery to enable them to become comfortable, confident, proficient, and temporally compliant. Points will be deducted for presentations lasting less than 12 minutes and for those extending more than 15 minutes. Caveat: Your instructor will call time and cut you off, should your presentation exceed the 15 minute limit. It is the student's responsibility to insure that her/his presentation can be properly shown using the computer and projection system available, which means the student is responsible for testing the

system and presentation at least several hours **before** beginning the scheduled presentation. Students must work with their instructor well in advance of the presentation to prevent last minute problems. As a general rule, the oral presentation should follow the same outline and rules as the term paper. In particular, plagiarism rules apply equally to oral presentations. All sources of materials, including photographs, diagrams, graphs, etc., must be appropriately and completely cited. Literature citations for oral presentations should be done in the same manner as in the term paper, and the final slide(s) should show all of the literature used and cited. Prior to making the presentation, each student shall submit to the instructor her/his PowerPoint presentation through the Oral Presentation assignment in Blazeview no later than noon (12:00 PM) of the day of his/her scheduled presentation. Also note that the term paper is due at the same time (See instructions for Term Paper above.).

Topical Theme: *Ethnobotany*

Suggested topics:

Plants as sources of psychoactive compounds
 Herbs and herbalists and modern medicine
 Native American folklore and modern medicine
 The shaman and modern medicine
 The ethnobotany of cacao
 The ethnobotany of coffee
 The ethnobotany of tea
 The ethnobotany of chicle
 The ethnobotany of tobacco
 The ethnobotany of *Ginkgo biloba*
 The ethnobotany of *Echinacea*
 Ethnobotany and conservation
 Plant arrow poisons and modern medicine
 Plants and dentistry
 Cycads and Parkinsonism

Natural insecticides and repellants from plants
 Ephedrine: origin, discovery, history, and medicinal uses
 Maize: origin, scientific improvement, and current importance
 Wheat: origin, scientific improvement, and current importance
 Cotton: origin, scientific improvement, and current importance
 Grain amaranth: history and potential
 Currently unexploited plants as potential commercial food sources in modern agriculture
 The search for new sources of medicines from plants
 The modern use of herbs in medicine

Once you have completed your preliminary assessment of possible research topics and have settled on several that you would prefer, use the Topic Selection assignment link in Blazeview to provide a ranked short list of your top three preferred topics, with number 1 being the most desired. Your short lists will be used by your instructor to assign topics, on a first come, first served basis; therefore, it is to your advantage to submit your topic preferences as early as possible. The deadline for submitting your topic preferences is provided in the course schedule.

Course Schedule, Including Important Due Dates

Note: Face-to-face meetings are underlined below.

Wednesday, 13 January, 5:00 – 6:50 PM – First Class Meeting

Wednesday, 20 January, 5:00 – 6:50 PM – More on plagiarism....

Wednesday, 27 January, 5:00 PM – Deadline for choosing research topic

Wednesday, 03 February, 5:00 – 6:50 PM – Completion of the SEQ

Wednesday, 24 February, 5:00 PM – Outline with references for term paper due

Thursday, 4 March – Midterm and deadline for completing Major Fields Test in Biology

Wednesday, 7 April, 5:00 – 6:50 PM – First week of oral presentations

Wednesday, 14 April, 5:00 – 6:50 PM – Second week of oral presentations

Wednesday, 21 April, 5:00 – 6:50 PM – Third week of oral presentations
Wednesday, 28 April, 5:00 – 6:50 PM – Fourth week of oral presentations

Schedule of Oral Presentations

The final schedule with assigned dates for individual presentations will be posted in Blazeview.

Wednesday, 7 Apr 2021

Presentation 1 (20 minutes)
Presentation 2 (20 minutes)
Presentation 3 (20 minutes)
Presentation 4 (20 minutes)

Wednesday, 21 Apr 2021

Presentation 1 (20 minutes)
Presentation 2 (20 minutes)
Presentation 3 (20 minutes)
Presentation 4 (20 minutes)

Wednesday, 14 Apr 2021

Presentation 1 (20 minutes)
Presentation 2 (20 minutes)
Presentation 3 (20 minutes)
Presentation 4 (20 minutes)

Wednesday, 28 Apr 2021

Presentation 1 (20 minutes)
Presentation 2 (20 minutes)
Presentation 3 (20 minutes)
Presentation 4 (20 minutes)

Grading

If a student thinks an error has been made in the grading of any assignment, s/he should communicate about this directly with the instructor *within one week* of the instructor's posting of the grade or returning the assignment. The final course average is calculated as follows.

Students will be evaluated and their grade determined as follows:

3-2-1 assessments of five (5) virtual science seminars	20 points
Outline of term paper with references	20 points
Oral presentation	30 points
Term paper – due at time of oral presentation	<u>30 points</u>
Total	100 points

Final Course Grade:

Satisfactory (S) ≥ 70 points
Unsatisfactory (U) < 70 points

Additionally, the final course grade will be adversely affected as follows:

In addition to a final course grade below 70 points, there are a number of other ways that a student can fail to complete this course satisfactorily: (1) 40 points will be deducted from the final course grade for plagiarism on the term paper, resulting in a final course grade of Unsatisfactory; (2) 40 points will be deducted from the final course grade for failure to complete the MFT with a grade of 140 or higher, resulting in a final course grade of Unsatisfactory; (3) 40 points will be deducted from the final course grade for failure to complete the SEQ, resulting in a final course grade of Unsatisfactory; (4) 40 points will be deducted for failure to complete successfully the Syllabus and

Plagiarism Awareness Assessment, resulting in final course grade of Unsatisfactory; and (5) 40 points will be deducted from the final course grade for failure to employ and properly cite at least seven published references, at least five of which must be primary literature, resulting in a final course grade of Unsatisfactory; (6) 40 points will be deducted from the final course grade for failure to meet minimum length requirements for either term paper or oral presentation, resulting in a final course grade of Unsatisfactory; and (7) absences from scheduled student presentations and scheduled class meetings will result in deduction of points from the final course grade and, if the degree of absence and resulting deductions are great enough, will result in a final course grade of Unsatisfactory.

Meeting the minimum point requirement for the final grade does not necessarily assure that the student will receive that grade. Assignment of the final grade is the prerogative of the instructor and will be based upon each individual student's overall performance, including patterns of consistency, trends toward improvement, and positive attitude as shown through attendance, participation, and cooperation.

Checklist of Course Requirements

- ___ Completion of the Major Field Test in Biology with a score of 140 or above
- ___ Completion of Senior Exit Questionnaire
- ___ Outline with references for term paper
- ___ Oral presentation
- ___ Term paper
- ___ Completion of five (5) 3-2-1 assessments in Blazeview of approved virtual science seminars posted by instructor in Blazeview
- ___ Attendance face-to-face of all student seminar presentations and other scheduled class meetings. Note: Remote participation via Collaborate Ultra in Blazeview will be allowed, as necessary, so long as it is approved in advance by your instructor.

Caveat: Whereas poor quality work will adversely affect the final course grade, mere completion of these requirements does not guarantee that the student will receive a grade of Satisfactory in the course.