BRR 100: Great Experiments in BioResource Research Interdisciplinary Sciences
Course Syllabus

Oregon State University, BioResource Research Interdisciplinary Sciences (BRR)
Fall term, 1 credit
M, 50 minute sessions
Prerequisite: None

Instructor Contact: Wanda Crannell, (541) 737-2999
Agricultural and Life Sciences Building 4039
E-Mail: wanda.crannell@oregonstate.edu
Appointments made in advance; generally available M-F between 8:30 and 2:30.

BRR Director Contact: Kate Field (541) 737-1837
Nash Hall 354
E-Mail: Kate.Field@oregonstate.edu

This course is for students interested in BRR and undergraduate research, to introduce them to the research process and help them start defining their research interests and project areas. Faculty mentors describe research projects and experimental approaches, and pose interesting political and ethical questions related to scientific research. Students write about and discuss topics with entering BRR students, and junior and senior student mentors already involved in research projects.

There will be a total of six research presentations and one library presentation during the term. All students will summarize all the presentations (with the exception of the library presentation). BRR 409 students, who are also participating in the course, will meet with BRR 100 students in small groups during designated class periods to facilitate a discussion about the presentations. This will help to provide a clearer understanding of the presentations.

Course Objectives:
Students will gain an understanding of scientific research, and develop listening and writing skills that will be essential during their entire professional careers. Analytical and written communication skills will be improved as students respond to the critical feedback on their summaries.

Learning Outcomes:
Students will be able to:
• analyze a scientific talk, so as to focus on its most important aspects;
• communicate scientific material in writing, in a professional style
• effectively use the library and writing resources on campus.

Assessment/evaluation of student performance:
Students will write brief summaries (two double-spaced pages) based on six research presentations given by faculty; complete a library assignment; and submit assignments on the dates listed in the schedule. Final grades will be based on the following:

<table>
<thead>
<tr>
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<th>Total points</th>
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<tr>
<td>Summaries (six @ 10 pts each)</td>
<td>60</td>
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<tr>
<td>Library Assignment</td>
<td>20</td>
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<td>Class participation/attendance</td>
<td>20</td>
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<td>100</td>
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Missed presentations or classes must be made up. It is recommended that students contact the instructors prior to missing any class to make arrangements. Absences will rarely be excused and only for exceptional and extenuating circumstances (i.e. documented medical illnesses and/or emergencies).

Learning Resources: No textbook. The Writing Center (http://cwl.oregonstate.edu/) is available for assistance. Half-hour appointments with a writing assistant are available beginning early Oct. in
Waldo 123 from 9-4 on M-F (call 737-5640). Students may also submit their work-in-progress to the Center's Online Writing Lab (http://cwl.oregonstate.edu/owl.php). The Valley Library writing desk is available for evening and Sunday appointments by signup or by calling 737-8385. WritingQ is an on-line grammar "hot-line" designated to answer brief questions. A response is usually available within 24 hours. The e-mail address is: WritingQ@lists.orst.edu.

Description of Assignments:

The guidelines listed below should be equally applicable to scientific articles and reports and to oral presentations that describe scientific experiments or studies. It is helpful to break presentations down into several components that are normally integral to articles and talks. In the best talks or articles, these components are readily identifiable and appear in a logical order. In mediocre articles and talks you may have to separate them from distracting verbiage and put them in logical order yourself. In the worst cases, you may have to infer or guess at some items. You are expected to summarize the following components in each of your writing assignments.

Background/Introduction

Authors/speakers usually try to whet the interest of their audiences by setting the scientific stage. Speakers may address one or all of the following in the background portion of their presentations:
• Why are particular fields of study important and/or interesting?
• What has been learned previously?
• What particular question(s) now need(s) to be addressed?
• Why are the question(s) significant?

Rationale

Authors (presenters) will usually follow the background with a focus on:
• the particular subjects of the studies which they are describing;
• the general approaches that they employed.

You should try to listen for answers to the following questions:
• Why were these particular questions addressed?
• What hypotheses are to be tested?
• Which particular predictions of the hypotheses are to be probed?
• How, in general, is this to be approached experimentally?
• Why were those approaches chosen?

The Background and Rationale components may overlap to some extent.

Technical Breakthroughs and Important Experimental Results ("Take-home Lessons")

Not every technical description of an experimental approach is memorable, and not every datum is of high interest to other than a small "in group". The trick is to search out the "nuggets" and put them in a coherent, logical order. This is an art that you will only acquire with experience therefore we are providing this opportunity for you to start doing this early in your academic careers. Ask yourself the following questions:
• What would you like to remember about the presentation?
• What would you tell a colleague if you wanted to interest him/her in the work?
• What techniques do you think were particularly ingenious or innovative?
• Which results do you think are most interesting and significant?

Conclusions and Significance

Consider the following questions when writing your summary:
• What's the "bottom line" on the studies described?
• If the research was performed in the past, what might it have contributed to the development of the field?
• What did the research lead to?
• If the research is more recent, how did it confirm or refute ("falsify") the hypothesis?
• What research should be done next?

The summaries are to be turned in to us on the dates listed in the presentation schedule. We will evaluate and grade the summaries, and return them the following week to you. You are given a chance to revise your summary over the next week and return the revision the following week. Original written work must be attached to the revision when submitted for this grade to replace your first grade.

Each summary will be evaluated for your ability to communicate, in writing, scientific material in a professional style. Proper use of grammar, punctuation, and spelling will be part of the evaluation. A complete understanding of the subject matter is clearly not necessary, but you must demonstrate an attempt to work out answers to the questions described above. Summaries will receive a point grade (1-10 pts each).

**Students with Disabilities:** Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

**Rules on Civility and Honesty:**
The BioResource Research Interdisciplinary program follows the university rules on civility and honesty. Cheating or plagiarism by students is subject to the disciplinary process outlined in the Student Conduct Regulations. Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:

* cheating- use or attempted use of unauthorized materials, information or study aids
* fabrication- falsification or invention of any information
* assisting- helping another commit an act of academic dishonesty
* tampering- altering or interfering with evaluation instruments and documents
* plagiarism- representing the words or ideas of another person as one's own

Behaviors disruptive to the learning environment will not be tolerated and will be referred to the Office of Student Conduct for disciplinary action.

“The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. Our rules are formulated to guarantee each student's freedom to learn and to protect the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office.”

**Link to Statement of Expectations for Student Conduct,** i.e., cheating policies: [http://oregonstate.edu/admin/stucon/achon.htm](http://oregonstate.edu/admin/stucon/achon.htm)
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/due dates</th>
<th>Speaker/research faculty</th>
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<tbody>
<tr>
<td>1</td>
<td>Orientation&lt;br&gt;Introduction to course, discuss writing assignments</td>
<td>Wanda Crannell, MS, Advisor / Instructor</td>
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<td>Meet Peer-mentors</td>
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<td>2</td>
<td>* Presentation 1:</td>
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<td>3</td>
<td>* Presentation 2:</td>
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<td>4</td>
<td>Discussion (BRR 100 students bring last drafts of write ups 1 and 2 for peer-mentors). Library Pre-assignment Handouts</td>
<td>Peer-mentors</td>
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<td>5</td>
<td>* Presentation 3&lt;br&gt;* Summaries of presentations 1 and 2 (10/05, and 10/12) are due&lt;br&gt;* Turn in Library Pre-assignment</td>
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<td>6</td>
<td>Biological science research- finding resources Valley Library, Autzen classroom, room 2082</td>
<td>Hannah Rempel, MS, Biological Science Librarian</td>
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<td>* Summary of presentation 3 is due</td>
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<td>7</td>
<td>* Presentation 4</td>
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<td>8</td>
<td>* Presentation 5</td>
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<td>9</td>
<td>Discussion Period (100 students bring last drafts of write ups 4 and 5 for peer-mentors)</td>
<td>Peer-mentors</td>
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<td>10</td>
<td><strong>Presentation 6</strong>: BRR student/graduate presentations&lt;br&gt;**&lt;br&gt;* Summaries of presentations 4 and 5 (11/8 and 11/15) are due</td>
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<td>11</td>
<td><strong>Finals week</strong>, Presentation 6 write up due by Thursday at 5 pm</td>
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