INITIAL BRR PROJECT MEETING

Student's Responsibilities

Work 3-5 hours per research credit (BRR 401) each week.

Maintain a lab notebook/journal for a record of accomplishments and protocols, problems encountered, date and number of hours worked, and lab or field results.

During the first term that you are enrolled in research credits (BRR401), complete a list of proposed option courses needed to complete the BRR degree requirement. Your faculty mentor is the lead advisor for your option courses. This course list should be initialed by the faculty mentor and submitted with the project proposal. The director and adviser ensure that you enroll in and complete the agreed upon list. If you need to make changes later, you must submit a revised list, initialed by your mentor.

During the first term that you are enrolled in research credits, complete a 2-3 page proposal that briefly and succinctly outlines your proposed research, containing:

- Problem Statement or Needs Assessment,
- Research Objectives,
- Methods,
- Expected Outcomes and Impact
- References (minimum 3-5 publications, properly formatted).

This writing assignment partially fulfills the WIC requirement for BRR majors. Submit a copy, initialed by the faculty mentor and secondary advisor, to the BRR office.

Three terms prior to graduation and/or mid-way through your research, write a progress report, containing a research update, problems encountered, and a time line for project completion. Schedule a meeting with your committee (mentor and secondary mentor and BRR director) to discuss the report. When it has been agreed upon, get it initialed by the faculty mentors and submit it to the BRR office. This report also partially fulfills the WIC requirement

Submit a draft copy of the thesis to the faculty mentor no later than three weeks prior to final seminar/defense date.

Submit a revised copy of the thesis to the faculty mentor, secondary advisor, and BRR director no later than one week prior to final seminar/defense date.

Prepare and give a final seminar on the research project by Friday of the week before dead week.

Discuss and defend thesis results with your faculty mentor, secondary advisor, and BRR director. Be prepared to answer questions about your research and related topics, which could include such areas as theoretical background, rationale, how methods work, possible explanations for anomalous results, how you would design experiments to test your results, and overall significance.

Edit and submit a final copy of the thesis to your faculty mentor and BRR director by noon Wednesday of finals week.

INITIAL BRR PROJECT MEETING

Faculty Mentor Responsibilities

Provide guidance on the development of, and direct students in research projects. The student's research project, including reading and actual laboratory and/or fieldwork, should take about 420 to 700 total hours (14 credits at 3-5 hours/credit). (This does not include the time student needs to write the thesis.) Most students take BRR 401 for their required research credits; it is also acceptable, if the faculty mentor needs to be recognized by his or her department, for a student to take research credits in the mentor's home department.

Explain and demonstrate how you expect members of your research group to keep records, including the laboratory notebook and data organization and storage.

Assist student in preparing, and review the following:

- project proposal,
- course list, and
- progress report.

These assignments partially fulfill the WIC requirement for the BRR major and must be initialed by the mentor and secondary advisor prior to providing copies to the BRR office.

Provide grades for research credits in terms student enrolls in BRR 401 (Research) -- 14 credits.

Recommend to the student a qualified secondary mentor. The secondary mentor should be:

1. a Ph.D.-level scientist familiar with methods used in the project and able to give helpful advice for improving methods
2. available to answer research related questions when the faculty mentor is not available
3. willing to review student's project proposal, mid-term progress report and thesis.

Meet with the student, secondary mentor and BRR Director at the beginning of the research, and again to review the student's progress report.

Review and edit first draft of student thesis that is to be received no later than three weeks prior to student's scheduled final seminar/defense date (to be held no later than the Friday before dead week in the term student intends to graduate).

Return edited thesis to student no later than two weeks prior to student's scheduled seminar and thesis date.

Provide guidance as the student prepares for the seminar and defense.

Attend and critique the student's seminar.

Discuss the results of the research with the student and secondary advisor.

Review and provide a grade for the final thesis that is to be received by Wednesday noon of finals week.

BioResource Research

INITIAL BRR PROJECT MEETING

Program Responsibilities: BRR Adviser and Director

Student name: _____

Provide centralized location for student records and access to faculty mentors and students.

Complete student graduation audits (last two terms before graduation) and advise students on curriculum development and progress towards degree requirements every term. Provide grades and progress on course work to faculty mentors at their request. Notify students of due and late project proposals, progress reports, and theses.

Schedule student seminars and send out seminar titles and announcements to option faculty mentors.

Notify students involved in research of potential grants (i.e., Richard Chambers, Deloach, HHMI, and URISC).

Plan and oversee the BRR curriculum and options.

Organize BRR faculty meetings and provide opportunities for faculty mentors to interact, voice concerns, and receive new information.

Teach and organize BRR courses to help complement the research experience.

Provide mediation for students and/or faculty mentors regarding unresolved disputes about curricula, research, deadlines, and/or research responsibilities.

LEARNING OUTCOMES OF THE BIORESOURCE RESEARCH MAJOR:

BioResource Research students will be able to:

- Retain and articulate the fundamental concepts of biosciences and bioresource sciences, and of the physical and mathematical sciences that support these fields.
- Demonstrate an understanding of the scientific method by designing an experiment, collecting, analyzing and interpreting data.
- Convey the meaning of research results in written and oral format, to both professionals and the general public.
- Master and discuss the important contemporary issues in the specific discipline of the BRR option and research project.
- Demonstrate professionalism, including critical thinking, a strong work ethic and the ability to contribute to a team.

Signatures:

_____ _____
(Student) (date)

_____ _____
(Mentor) (date)

_____ _____
(Director) (date)

BRR100 -- Great Experiments in Bioresource Research (1 cr). For students interested in BRR and undergraduate research, to introduce the research process and help them start defining research interests and project areas. Faculty describe research projects and experimental approaches, and pose interesting political and ethical questions related to scientific research. Students work with junior and senior student mentors already involved in research projects. Fall term.

BRR200 – Developing a Research Proposal: Theory and Practice (1 cr). An introduction to conceptual issues for organizing, planning, designing and conducting research in biological and agricultural sciences and natural resources disciplines. Students will master methods and philosophy of research, and then apply them by working in teams to analyze a timely and relevant problem and formulate experimental approaches to address it. Winter term.

BRR401 -- Research (1-14 cr). Undergraduate mentored research. Students select a faculty research mentor (from 7 OSU colleges) and complete 14 credits of research. Students follow established guidelines to prepare project proposals, progress reports, and a thesis; learn research methods applicable to their chosen field; and gain professional skills and contacts. Students are evaluated on their ability to develop and complete a research project proposal, learn and develop research methodologies, conduct research and trouble-shooting procedures, and demonstrate responsible and ethical participation in the research project. All terms.

***BRR403 -- Thesis (*4 cr).** (WIC) BRR students independently interpret and present their research in writing. Students write the thesis in a style appropriate for submission to a peer-reviewed journal in their chosen scientific discipline. Students receive a letter grade based on their final thesis. Timeliness of reports is factored in student assessments. The student's faculty mentor and the BRR Director provide a consensus grade when the thesis is completed. All terms.

BRR409 – Teaching Practicum: Peer-Mentoring (1 cr). Upper division BRR students are grouped with lower division students in BRR 100 to facilitate discussion and encourage dialog about current research topics. Juniors and seniors continue to learn new ways to teach and communicate science issues in written and verbal formats. Fall term.

BRR406 -- Projects - Data Presentation (1 cr). For any student doing research, to learn to develop and evaluate poster and slide presentations containing scientific data. Students are exposed to a variety of scientific disciplines as they prepare and critique their own and other students' posters and oral presentations. Students improve written and oral communication skills. Letter grade is based on participation, improvement, and the quality of a final poster project and oral presentation. Winter term.

BRR407 -- Seminar (1 cr). For BRR students, to encourage excellence in public speaking. Exposes students to a variety of current seminar topics and provides them with the opportunity to evaluate components of good public seminars. Students receive a grade only after completing a public seminar on their own research (final research seminar). Spring term.