Syllabus: Advanced Topics in Evolution

Topic: Hybridization and polyploidy in plant evolution

1. **Course information:** Spring 2012, BIOL F644, 3 credits, location TBA, meeting time TBA, prerequisites: graduate standing in Biology or related field or permission of instructor

2. **Instructor** Diana Wolf, WRRB 240, phone 474-5538 or 456-1459, email dewolf@alaska.edu, office hours by request

3. **Course readings/materials:** readings will be taken from the primary literature as well as these books:


   Polyploidy (Benchmark papers in genetics), ed. by R.C. Hauber and Donald P. Jackson, ISBN-10: 0879330880 (recommended).

   The role of chromosomal change in plant evolution, by Donald Levin ISBN-10: 0195138600 (recommended) Electronic copy available on Goldmine

4. **Course description:** Two major influences on plant evolution are hybridization and polyploidy. Both have the capacity to introduce variation and give rise to new evolutionary lineages. They also have the capacity to merge existing lineages. This course will investigate the role of polyploidy and hybridization in the evolution of plant ecology and plant genomes and the factors that influence hybridization and polyploidy. Students are expected to have a basic understanding of ecology, evolution, genetics, and plant biology.

5. **Course Goals** Students will a solid understanding of current research in polyploidy and hybridization, and gain proficiency in analyzing and critiquing manuscripts from the primary literature. Students should be able to read and understand primary literature in this field. Students should be able to make well-reasoned arguments about the merits and shortcomings in a given paper based on logic and knowledge of the scientific literature in the field. Students should be able to write a literature review paper on some topic related to polyploidy or hybridization.

6. **Instructional methods:** The course will meet for 1.5 hours twice a week for mini-lectures, and small group discussions of primary literature and book chapters. Students may be expected to select papers and lead discussions. Students write a review paper related to course and student’s thesis, due at the end of the semester (approx 10 p. double spaced).

7. **Course calendar:** Each week we will have a mini lecture and discuss a manuscript(s) or book chapter(s). The readings will be determined by the interests of the students.
8. **Course policies:** Students are expected to attend all classes unless they have a really good excuse. Students are expected to carefully read and evaluate each manuscript/book chapter, and come prepared to lead and participate in discussions. Plagiarism will result in failure of the course.

9. **Evaluation:** Grades will be determined by preparedness for, participation in and leadership in discussions (50%) and a literature review on some topic related to the class and your thesis (50%). Grades will be assigned as A,B,C,D or F.

10. **Support Services:** If you need assistance in the class, please talk to me and/or your classmates. If you need access to a computer, you can use one in my lab. Printers and photocopiers are available in WRRB, Irving I and Arctic Health. If you need a laptop and projector, contact the Biology Office in Irving I (474-7100).

11. **Disabilities Services:** The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. State that you will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.”