**Course**: Plant Genomics and Biotechnology

**Course Number**: WSU Hort 480/CSS480

**Instructor**: Richard M. Sharpe, PhD – Clark 239, 509-335-3603  rsharpe@wsu.edu

**Schedule**: TU,TH 4:15 – 5:30pm

Academic Calendar: [http://registrar.wsu.edu/academic-calendar/](http://registrar.wsu.edu/academic-calendar/) - drop dates, fee dates etc.

**Course Description**:

**Catalog states**: "Advanced concepts in plant genomics and biotechnology with emphasis on approaches, techniques, and application."

**Prerequisites**: Biol 420 or equivalent, recommended preparation: Hort 340 or CROP SCI 444.

**Objectives and Course Philosophy**

The goal of Hort 480 Plant Genomics and Biotechnology is to develop an understanding of the genetics, genomics, and biotechnology of plants, and the ways in which this information can be utilized for crop improvement. This will be accomplished through a study of plant genomics and biotechnology, along with the investigation of current methods, approaches and techniques. The course will be comprised of class lectures, invited presentations, reading materials and assignments and class presentations and group discussions.

**Student Learning Objectives/Goals**

**Objective 1**: Understand central dogma, recombinant DNA, genetic diversity identification, methods to capture genome sequences

**Objective 2**: Establish gene-trait relationships via genetic and genomics approaches

**Objective 3**: Integrate the information from objective 1 and 2 in breeding and biotechnology approaches for efficient crop improvement

**Objective 4**: Become familiar with public perception issues regarding biotechnology and approaches for effective science communication.

**TEXTBOOK**: None required: supplemental information will be supplied in the classroom.

**Teaching Methods**

The course will be taught in an open lecture format, attendance will not be recorded, although attendance in class will be necessary for success. Mitigating circumstances preventing class attendance will be assessed on a case by case basis. The only reason you should have for not attending class is if the instructor cannot attend either! Occasional homework assignments may be required.
Grading Policy and Requirements

There will be 3 lecture examinations given during the semester. Each lecture exam will have approximately 70% emphasis on current information since the last test, and balance on information cumulatively assimilated throughout the course. Any information from lectures, reading, any assigned homework, or guest lectures may be used in exams. To demonstrate assimilation of technical material, questions involving recall, listing, short answer and definition will be used. To assess comprehension and understanding, discussion questions will be emphasized. The student is expected to organize ideas, thoughts, and factual information in order to present logical, comprehensible answers to discussion-type questions. Proper use of grammar, syntax, and spelling will influence your grade (i.e., NO DM-speak!). The final exam will be comprehensive, and hopefully demonstrate the student's ability to synthesize knowledge gained throughout the semester into logical solutions confronted in "real-world" situations.

Other Course Requirements

Two (2) brief reviews of research articles in the general area of genomics and biotechnology are required. These reviews should be no more than two typewritten pages. For further information consult the instructor.

A library research term paper can be used to bolster the student's final grade. Topics of mutual interest to the instructor and student are to be agreed upon by a mid-semester date to be announced in class.

All written material is due at the close of business on the dates shown on the assignment. Assignments and exams will be submitted via Blackboard and due on the dates indicated. Proper writing and communication skills are essential, lack of such will affect your grade. Late submissions will receive a 5% penalty for each day past due.

Regarding assignment due dates: In light of increasing instructor sensitivity to the human condition, each student will receive ONE “get out of jail free” card, which will be distributed when enrollment figures become finalized. **This card is to be used whenever the student needs to submit a late assignment no questions asked.** The card is not transferable, or redeemable for an exam and redeemable if not used prior to the final exam for five (5) extra points added to the student’s final average. It is conceivable that the student could significantly bolster the final grade in this fashion.

Grading weight of each portion of the course:

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<th>Percentage</th>
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<tr>
<td>Exams (2 ea)</td>
<td>40%</td>
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<tr>
<td>Paper review assignment (2ea)</td>
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<td>Final Exam</td>
<td>30%</td>
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<td>Discussion Questions</td>
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<td>Total</td>
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<td>Extra credit – library research paper</td>
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Grading will be based upon a percentage basis:

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<tr>
<th>Grade</th>
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<td>A-</td>
<td>90-93</td>
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<td>B+</td>
<td>87-89</td>
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<td>B</td>
<td>84-86</td>
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<td>B-</td>
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<td>C-</td>
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**Students with Disabilities:** Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. For more information contact a Disability Specialist on your home campus:

- **Pullman or WSU Online:** 509-335-3417 [http://accesscenter.wsu.edu](http://accesscenter.wsu.edu), [Access.Center@wsu.edu](mailto:Access.Center@wsu.edu)
- **Spokane:**
- **Tri-Cities:** [http://www.tricity.wsu.edu/disability/](http://www.tricity.wsu.edu/disability/)

**WSU Safety:** **Pullman:** “Washington State University is committed to enhancing the safety of the students, faculty, staff, and visitors. It is highly recommended that you review the Campus Safety Plan ([https://safetyplan.wsu.edu/](https://safetyplan.wsu.edu/)) and visit the Office of Emergency Management website ([https://oem.wsu.edu/](https://oem.wsu.edu/)) for a comprehensive listing of university policies, procedures, statistics, and information related to campus safety, emergency management, and the health and welfare of the campus community.”

**Tri-Cities:** “In order to receive notification regarding campus emergencies (including campus closures), all faculty, staff, and students register their emergency contact information for the Crisis Communication System (CCS) through myWSU. Click “Update Now!” under “Tri-Cities Emergency Info” to register for notification by text message, e-mail, telephone, or any combination of the three. Providing multiple contact methods will help ensure you receive notifications in a timely manner, and your information will NOT be used for any other purpose. Messages regarding campus emergencies will also be distributed through local media. Please also review the Campus Safety Plan, which contains a listing of emergency contacts, and university policies, procedures, statistics, and information relating to campus safety and the health and welfare of the campus community. The Campus Safety Plan can be found at [http://www.tricity.wsu.edu/safetyplan/](http://www.tricity.wsu.edu/safetyplan/).”

**WSU Academic Integrity:** Academic integrity is the cornerstone of the university. You assume full responsibility for the content and integrity of the academic work you submit. You may collaborate with classmates on assignments, with the instructor's permission. However the guiding principle of academic integrity shall be that your submitted work, examinations, reports, and projects must be your own work. Any student who violates the University's standard of conduct relating to academic integrity will be referred to the Office of Student Conduct and may
fail the assignment or the course. You can learn more about Academic Integrity on your campus using the URL listed in the Academic Regulations section or at http://conduct.wsu.edu/academic-integrity-policies-and-resources. Please use these resources to ensure that you don’t inadvertently violate WSU’s standard of conduct.

Plagiarism policy: “Don’t Cheat, or it will cost you!” Seriously, Plagiarism is a form of cheating, which involves knowingly passing of the writing work of others as your own. If you would like a more in-depth definition of plagiarism, please consult the following web site: https://libraries.wsu.edu/library-instruction/plagiarism. All plagiarism is cheating but not all cheating is plagiarism. Cheating (using text-messaging or crib notes for test answers, etc.) is also prohibited. Students caught cheating will fail the test in question and will be reported to the Office of Student Affairs. Any student who violates the University’s standard of conduct relating to academic integrity will be referred to the Office of Student Conduct and may fail the assignment or the course. You can learn more about Academic Integrity on your campus using the URL listed in the Academic Regulations section or at https://communitystandards.wsu.edu/. Please use these resources to ensure that you don’t inadvertently violate WSU’s standard of conduct.

Lauren's Promise

I will listen and believe you if someone is threatening you.

Lauren McCluskey, a 21-year-old honors student athlete, was murdered on Oct. 22, 2018, by a man she briefly dated on the University of Utah campus. We must all take actions to ensure that this never happens again.

If you are in immediate danger, call 911.

If you are experiencing sexual assault, domestic violence, and stalking, please report it to me and I will connect you to resources or call the National Alternatives to Violence at 877-334-2887 (24-hour crisis hotline).

Any form of sexual harassment or violence will not be excused or tolerated at Washington State University. WSU has instituted procedures to respond to violations of these laws and standards, programs aimed at the prevention of such conduct, and intervention on behalf of the victims.

- National Resources for Domestic Violence, Sexual Assault, and Stalking:
  - RAINN (Rape, Abuse & Incest National Network): 1-800-656-HOPE (4673) and https://www.rainn.org/
  - Victim Connect Resource Center: 1-855-484-2846 and https://victimconnect.org/
  - Love is Respect – National Dating Abuse Hotline: 1 (866) 331-9474
    - Text: 22522 and https://www.loveisrespect.org/
  - Anti-Violence Project Hotline: 212-714-1141 and https://avp.org/get-help/
Any form of sexual harassment or violence will not be excused or tolerated at Washington State University. WSU has instituted procedures to respond to violations of these laws and standards, programs aimed at the prevention of such conduct, and intervention on behalf of the victims. WSU Police officers will treat victims of sexual assault, domestic violence, and stalking with respect and dignity. Confidentiality is of the utmost importance and WSU Police will assist by providing resources to victims. In addition to its law enforcement efforts regarding sexual assault, domestic violence and stalking, WSU Police refer victims to the appropriate university and/or local community counseling and other resources devoted to assisting victims.

Advocates help survivors determine their own needs in regards to their physical and emotional health, reporting options, and academic concerns. They connect survivors to campus and community services, and provide accompaniment to important appointments (court, hospital, and police) and support throughout the process. WSUPD can also connect you with advocacy services, if desired. The local advocacy group is Alternatives to Violence of the Palouse, whose services are free, immediate, and confidential.

Other confidential resources include WSU Counseling and Psychological Services. If you would like to speak with a counselor after business hours, WSUPD can contact the on-call counselor and have them call you directly or a crisis telephone number is provided. Information shared with the counselor will not be provided to WSUPD without expressed permission from you. WSU Counseling and Psychological Services 509-335-2159 (crisis services line).