Update quarter in Header

Class times:

Location:
Room

Instructor:

**Prof. Tiffany Lowe-Power** Tlowepower@ucdavis.edu

**Student Hours** (Also known as “Office hours”, but I want to emphasize that this is a dedicated time for you.)
**After Class**
4 pm – 5 pm **Mondays**

Discussion Leaders:

**Welcome to PLP100**! This course has a modular structure that dives deep into eight plant pathogens to understand infectious disease biology. For each pathogen module, the instructor will lead an interactive lecture about the pathogen’s ecology, disease biology, molecular/cell biology. These lectures will typically occur on Tuesdays. Students will then use Perusall (linked via the Canvas site) to **read** and **annotate (ask/answer questions)** an assigned scientific paper about the pathogen as homework before the next class. In that class period, students will break into discussion groups to analyze the scientific questions, experimental approach, and results from a section of the paper (Instructor will assign to each group). Student groups will present their figure to the class for a whole-class discussion.

**Grading:**

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| **Percent of grade** | **Activity** |
| 40% | **Reading & interactive annotation of papers on Perusall**- In this course, you will read and annotate 8 scientific papers before the weekly discussions. You will find the papers on Perusall. Perusall allows you to collaboratively annotate the paper with your classmates. - See the “PLP100 Perusall scoring settings.docx” for details on how your Perusall activities are scored- If you run into errors using Perusall, there are help pages like this:<https://support.perusall.com/hc/en-us/categories/360002173133-Students> |
| 20% | **Participation in in-class discussions of papers**Bring a digital copy on a tablet/laptop or a printed copy. Laptop is preferred because each group will edit a Google Presentation in order to teach their section of the paper to their classmates  |
| 25% | **End-of-Quarter presentation (Groups of 2)**- Guidelines and rubric are posted on Canvas. - To develop the presentation, you and a partner will select a research paper to read. - You can use the class “Slack” Messageboard to find a partner & coordinate  |
| 15% | **Final exam** -Take-home via a Canvas Quiz-Open note, but **required to represent individual effort**. You should **not** consult classmates or any other humans.  |

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| **Schedule:** | **DATE** |
| **Intro to class**  | T  |
| **Intro to Plant Pathology**Pre-class reading (on Perusall):  (1) How to read a scientific paper (2) The course administration document | Th  |
| ***Module 1: Xylella fastidiosa***  | T  |
| Paper (Perusall + Class Discussion): Upstream migration of *Xylella fastidiosa* via pilus-driven twitching motility (Meng et al. 2005) | Th  |
| ***Module 2: Ralstonia solanacearum*** | T  |
| Paper (Perusall + Class Discussion): Escaping underground nets: extracellular DNases degrade plant extracellular traps and contribute to virulence of the plant pathogenic bacterium *Ralstonia solanacearum* (Tran et al. 2016) | Th  |
| ***Module 3: Xanthomonas*** **sp.**  | T  |
| Paper (Perusall + Class Discussion): Repeated gain and loss of a single gene modulates the evolution of vascular plant pathogen lifestyles (Gluck-Thaler et al. 2020) | Th  |
| ***Module 4: Aspergillus* sp.** | T  |
| Paper (Perusall + Class Discussion): Evidence for the agricultural origin of antimicrobial resistance in a fungal pathogen of humans (Kang et al. pre-print) | Th  |
| ***Module 5: Fusarium graminearum* aka Fusarium Sambucinum species complex (FSSC)** | T  |
| Paper (Perusall + Class Discussion): A linear nonribosomal octapeptide *from Fusarium graminearum* facilitates cell-to-cell invasion of wheat (Jia et al. 2019) | Th  |
| ***Module 6: Phytophthora infestans*** | T  |
| Paper (Perusall + Class Discussion): Genome sequence and analysis of the Irish potato famine pathogen *Phytophthora infestans*  | Th  |
| Mid-Term Presentations – Pairs 1-7 | T  |
| Mid-Term Presentations – Pairs 8-14 | Th  |
| **Module 7: Geminivirus and Potyvirus of Cassava** | T  |
| Paper (Perusall + Class Discussion): The role of the whitefly, Bemisia tabaci (Gennadius), and farmer practices in the spread of cassava brown streak ipomoviruses (Maruthi et al. 2017) | Th  |
| **Module 8: Vertically transmitted viruses / Biotechnology**  | T  |
| Paper (Perusall + Class Discussion): CRISPR/Cas9 editing of endogenous *banana streak virus* in the B genome of *Musa* spp. overcomes a major challenge in banana breeding | Th  |

**Final Exam (online):**

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| **Timeline for the Group Presentation**  | **DATE** |
| Find a Partner, select a Paper, and Sign up.  **Preferred:** Choose one of the Papers that Prof. Lowe-Power includes in the Box folder **Optional:** Select your own paper. If you do this, ask Prof. Lowe-Power on Slack if you  can use the paper. Some papers are not good, so Prof. Lowe-Power will look it over.  *See Part 1 and Part 2 below* | xxx |
| Develop your slides.Practice your presentationEdit your slidesPractice your presentationUpload your slides  **Preferred:** Choose one of the Papers that Prof. Lowe-Power includes in the Box folder **Optional:** Select your own paper. If you do this, ask Prof. Lowe-Power on Slack if you  can use the paper. Some papers are not good, so Prof. Lowe-Power will look it over.  *See Part 3-5 abelow* | xxx |