

## Information on BPS4121 Report

(1) Topic: The topic needs to be related to the course content, natural products and their biosynthesis. You are free to pick anything within that range. For example papers on biomimetic total synthesis, computational studies examining rearrangements in biosynthesis, development of biosynthetic enzymes as catalyst for organic chemistry, biochemical characterization of biosynthesis, structural biology of enzymes in biosynthesis, cloning and sequencing of genes/gene clusters involved in biosynthesis, mechanisms of action studies, natural product discovery (preferably not of the grind and find type) etc. I recommend looking in some of these journals for articles.

Journals: Science, Nature, Nature Chemical Biology, Nature Biotechnology, Proceedings of the National Academy USA, PLoS ONE, Scientific Reports, RSC Advances, Chemistry and Biology, ChemBioChem, Journal of Natural Products, ACS Chemical Biology, Journal of the American Chemical Society, Angewandte Chemie, Biochemistry, Organic and Biomolecular Chemistry, Journal of Antibiotics, Journal of Industrial Microbiology and Biotechnology, and Applied and Environmental Microbiology.

Here is a list of researchers doing great work in biosynthesis.

Researchers: Tad Begley, Jorn Piel, David Sherman, Wilfred Van der Donk, Sarah O'Connor, Gerry Wright, John Vederas, Vincent Martin, Jay Keasling, Chaitan Khosla, William Gerwick, Dean Tantillo, Sheryl Tsai, Robert Williams, Yi Tang, Bradley Moore, Ben Shen, Christain Hertweck, Joseph Noel, Craig Crews, William Fenical, Dirk Trauner, Sean Bradey, Elizabeth Sattely, Emily Balskus, and Anne Osbourn.

(2) Grading: 40% of the grade will be based on your summary and critique of the paper you have selected. Remember critique it does not necessarily mean finding fault with it, it means examining the conclusions in light of the relevant literature. Do the experiments address the hypothesis they were meant to address? Were there better experiments to address the question at hand? Is this truly an interesting/unaddressed question in the field? 40% of the grade will be based on your proposed experiments. If you agree with the conclusions on the paper, the proposed experiments should be the logical next step in the project. If you were the student working on the project what would you do next? If you disagree with the authors' conclusions, what experiments would you propose to better test the hypothesis proposed? The last 20% will be based on writing, length, and referencing (Your reports should be no more than 5 single spaced pages (12 pt font, 1.27 cm margins) and contain at least 10 references to the primary literature in an acceptable format).

(3) Proposed experiments: The experiments can be established experiments that have not been performed on the system you are writing about. In this case you should reference a paper or two that shows that the experiments can be done. Alternatively you can propose new experiments that haven't been done. In this case you should provide references that support why the experiment will work. It is always good to mention a backup experiment in case the one you are proposing does not work.