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Biology is the study of life. For 25 years, I have implemented experiential learning activities in all of my classes. This has included courses like BIOS 4270 which takes students on field trips to natural plant community types in MI to identify plants. Over the past 25 years that has resulted in the identification of state-protected species on WMU and other localities in Kalamazoo County. In the case of the dwarf hackberry, the class discovery resulted in revisions to the Michigan flora text book to accommodate our find. In other cases, the experiential learning opportunities have been locally important such as generating DNA sequences to prove the existence of state-protected species in Kalamazoo County. At the other end of the spectrum, BIOS 5260 is a true Course-based undergraduate Research Experience because it is aimed at the generation of novel data. In this course, students have cloned more than 100 genes from different plants in order to prove the functions of them. This semester-long endeavor allows students to engage in authentic research experiences. The multi-year investigations have been so fruitful that the results have been recently published in peer-reviewed literature ad have even overturned findings in previously published papers. The first paper to arise from the class was published in 2022 and have included more that 54 student co-authors. The work was published in *Molecular Biology and Evolution* which has one of the highest impact factors for biology journals. A second manuscript with a new set of 51 student coauthors has been reviewed and is accepted for publication in *Genome Biology and Evolution* pending revisions which we have almost completed.

I have always engaged in experiential learning opportunities because I can remember these as being the most impactful for me as a student. I firmly believe in the impact these experiences have on students to not only enhance their understanding of the material but to inspire, prepare and empower them to pursue research career paths. While I am convinced of the positive impact of the experiences based on anecdotal evidence, we have endeavored to measure the impact in more systematic ways. For the last two years, SAMPI has assessed and conducted interviews with BIOS 5260 students.

For instance, 8 out of 10 students indicated their career interests had changed because of the course
Some comments included:
• *Through taking this course I have strengthened my desire to work in a scientific lab*
• *Prior, I was a pre-med interest, but after doing these procedures, I see myself enjoying this kind of laboratory procedural work and am more interested in research*
• *This course has increased my interest in working with plants and working in the laboratory*
• *This class has made more interested in working in research.*
• *I have gained real hands-on research experience in techniques that are essential to a job in the sciences or a lab*
• *This class gave me so much experience with lab work. I want to use the skills I learned to produce medical research on women's health.*
• *I learned lab etiquette and am now interested in working in a lab!*