

Joseph Pettit – Testimony – 1-21-25 Appropriations – Education and Environment Division

Chairman, members of the committee, my name is Joe Pettit and I am from Minot, North Dakota. I have taught plant science and ecology at Minot State University for 5 years now. I want to speak in favor of the Economic Diversification Research fund. This fund has been instrumental in getting Minot State Students to their desired careers. This is done through funding their research activities which give them ownership of their learning, confidence as scientists, and experience that gets them into jobs, graduate programs, and medical schools.

My students, with this fund, have discovered a plant source of caffeine in North Dakota that has never been described before. Even though there is a record of ethnobotanical use of this plant going back hundreds of years, Minot State University students were the ones who found it.

My students have also been researching a plant that is toxic to humans, we wouldn't want to ingest it, it is toxic to rangeland species, cows and sheep for example, and it is toxic to bees. Minot State students are quantifying the concentration of toxin present in the plant and discerning how the plant is pollinated.

A recent report from an agricultural school in Utah stated that this plant was pollinated by flies. Minot State University Students found that to be false. We found a bee gathering pollen from this plant. This bee gathered pollen from only this plant.

We discovered this because of our collaboration with UND, NDSU, and Turtle Mountain Community College faculty. My lab created a computer program that can tell what plant a pollen grain is from. Our collaborators at UND are trying to identify plant species from pollen based on DNA present in the pollen. We are competing/comparing methods to see who can identify plants from pollen more quickly, accurately, and more cost effectively.

These research projects could not be completed without funds like the Economic Diversification Research Fund. These funds open doors to AI, DNA analysis, and quantitative chemistry which are the next big paths in my field. Our students are trained at the forefront of these technologies making them competitive in the job market. Thank you.