

Biology students excel in research at Behrend

ANDREA ADAMS
science co-editor

Research projects have always been around, but a lot of students did not know that they could start as early as their freshmen year.

Lara Trozzo, a Biology major who has spent her four years here at Behrend, has been doing research since her sophomore year. She has been conducting the research project "Effects of Thermoregulation on Foraging in *Anolis carolinensis*." *Anolis carolinensis* are also known as Carolina anoles, or lizards.

Trozzo got a head start when she began helping Dr. Margaret Voss with research projects until she got the opportunity to head her own project working with animals. Her project tracked the lizards' body temperature as they hunted for food on a cold side of a tank, while the other side was hot, thereby tracking how body temperature changes with their hunting behavior.

She has gone through the process of writing proposals for research grants, researched her topic and gathered materials, conducted the experiment, and now she is writing her thesis for

Schreyer's Honor College, which she hopes will be published.

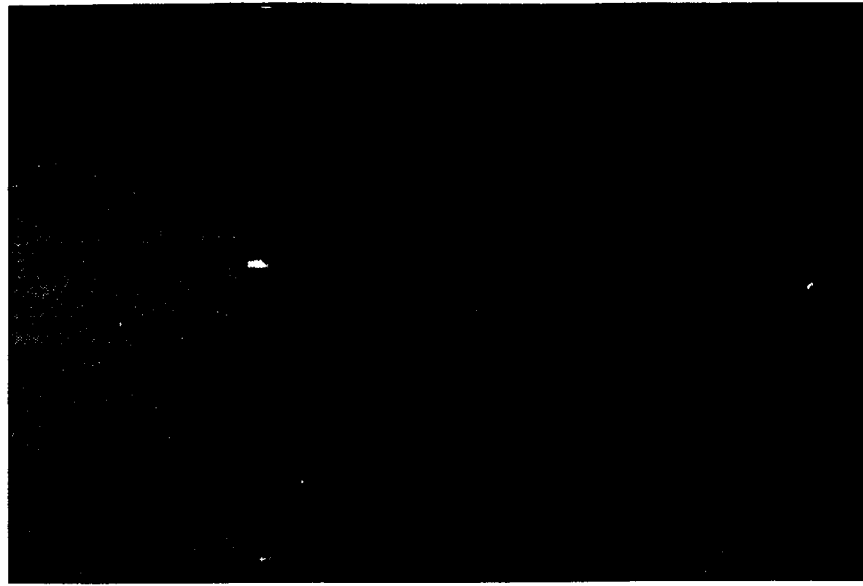
Kolby McIntyre is another of the many research biologists at Behrend. McIntyre is a junior and has been conducting a research project since his spring semester of his freshman year. His project is "A Survey of Farm Management Techniques and the Potential for Control of Parasitic Nematodes in Horses."

McIntyre's project involves collecting grass and manure samples on three local farms and measuring the amount of parasites that are in both. This way he may develop an idea of the probability of re-infestation of the horses with those parasites.

Researching has been very fulfilling for both students, to the point where they count it as one of the most valuable experiences of their college careers.

"Behrend is an awesome place for undergraduate research," says Trozzo. "When you go to larger campuses there aren't many opportunities to do research as there are on smaller campuses."

Research can also boost a resume so that students can be more competitive for graduate schools.



Contributed Photo

Lara Trozzo displays her research on thermoregulation in the biology building.

"This opportunity has been invaluable," says Kolby, who is aiming to be a veterinarian, "and it is going to help me in my career."

All researchers who get their money through Behrend have to present their projects at the end of the year at the Sigma Xi research conference. The conference often serves as an eye-opening experience to students who may not have been interested in research before.

The conference covers different topics of research, and can help students branch out to different organizations.

Those organizations have been another highlight to both the collegiate careers of McIntyre and Trozzo.

Both are officers of the Behrend Chapter of Beta Beta Beta, the National Biological Honor and Research Society. This society reaches out to students whose major is Biology as well as Biological researchers. Certain criterion needs to be met to be considered for the

Behrend Chapter of Beta Beta Beta.

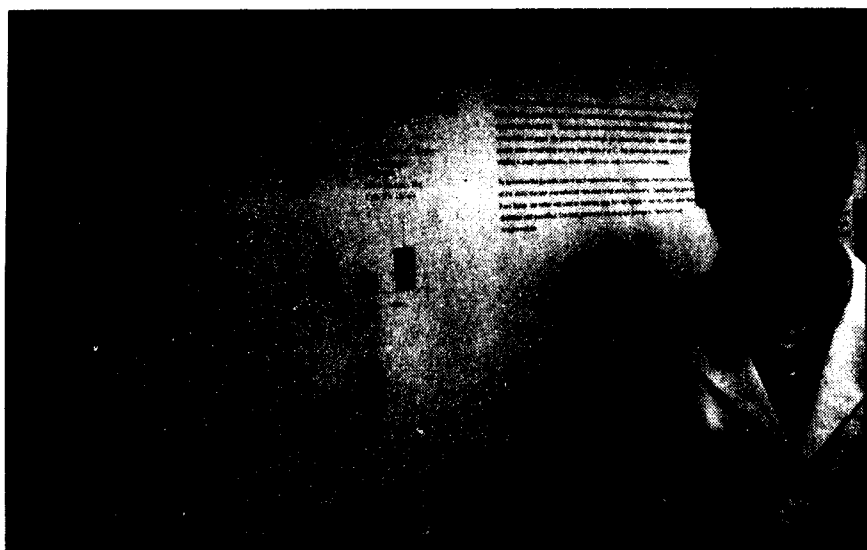
Accommodations for a busy schedule can also be made for student researchers. Lara, for instance, not only gets money from her research grants, but she acquired 2 credits per semester as well.

When you go to larger campuses there aren't many opportunities to do research as there are on smaller campuses.

Lara Trozzo
Senior - Biology

If that option interferes with planned curriculum, then there is always the option that McIntyre has taken. Kolby has been researching for the last two summers instead of during the school year. The summer researching is often very convenient, because students can generally put more hours in and choose their own hours.

The simplest course of action a student can take if interested in completing more research is to contact a professor and request to get involved with their research. Professors generally welcome the help of students and are eager to assist motivated students into research of their own.



Contributed Photo

Kolby McIntyre, a junior, displays his research on parasitic nematodes.

Despite setbacks, math ed. remains at Behrend

NICHOLE BUCZYNSKI
math writer

The mathematics department at Penn State Behrend is always looking for new ways to improve upon itself and found an opportunity in the fall of 2007 when it started up a Secondary Mathematics Education Bachelor of Science program here on campus. The program is currently entering its third year. Interestingly, Behrend does not offer the completion of any other education program on campus, except for mathematics. Why, do you ask? It is really actually quite simple.

The mathematics department was approached by the community to start a mathematics education program that was more math intensive and pro-

vided more qualifications. The math department was already trying to look for ways to expand itself and found a great opportunity in the community's request. The program at Penn State Behrend is actually more strenuous than at most other college campuses due to the fact that at Penn State Behrend, the Secondary Mathematics Education program is an addition to the mathematics degree; whereas, many other campuses have programs specifically developed for teachers. Therefore, mathematics secondary education majors from Penn State Behrend have more background in mathematics than at other schools.

In an interview with the Interim Mathematics Education Coordinator, Professor Joseph Previte, Professor Previte explained that the program

has faced many setbacks; including the loss of a prominent faculty member and the possibility of losing the program altogether due to a recent push by Pennsylvania to implement special education classes as a requirement for becoming a teacher. The mathematics department was unsure if they could provide the necessary means for the special education courses. However, with careful deliberation, many of these problems were resolved and Penn State Behrend still continues to offer Mathematics Secondary Education.

While the Mathematics Secondary Education Program has faced a lot of setbacks, it has overcome them in tremendous fashion. According to Professor Joseph Previte, the first graduates should be graduating next

year. The major has a lot of requirements to even enter the major. Some of these requirements include 80 hours of community service dealing directly with teaching and passing the Praxis Exams. It is due to these numerous requirements that the program only has two people in it. However, it looks as though many more may enter in the coming spring. According to Penn State Behrend's Mathematic's website, analysts predict that 240,000 new mathematics and science teachers will be needed over the next decade. Penn State Behrend is pushing forward to the future to provide the necessary means for our nation to fill these vacancies with the creation of an intensive mathematics education program.

Trip to Taiwan

MARIE EBNER
chemistry writer

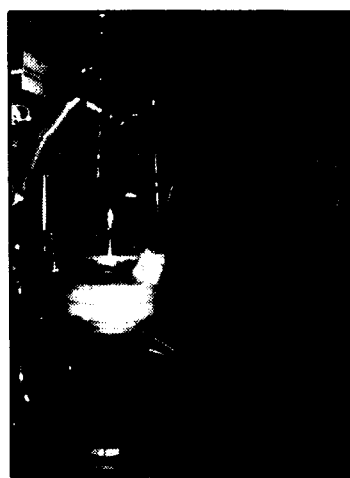
An intricate web of hardware, cords funneling to computers, tubes funneling to recording devices, a funnel.

Indeed, gazing at the Matrix Isolation Spectroscopy Apparatus of Dr. Jay Amicangelo, an associate professor of chemistry, gives the vibe of a laboratory worthy of Dr. Jekyll.

This elaborate device uses a "matrix" of argon pressurized at 10-6 to 10-7 torr and cooled to 10 K, close to absolute zero, and either a microwave discharge, a vacuum-ultraviolet photolysis source, or a pyrolysis source to trap transient, unstable species of SixNiy which have never been isolated or studied before.

However, there is one device lacking in Dr. Amicangelo's lab which would not only greatly increase the knowledge of known compounds in the universe but make Dr. Evil proud: a laser beam.

This is the basis for Dr. Amicangelo's upcoming sabbatical to the National Chiao Tung University in Taiwan in the laboratory of Professor Yuan-Pern Lee. He will be leaving this spring 2010 semester under a Fulbright Scholarship which covers all of his living expenses. This lab contains a



Contributed Photo

Dr. Amicangelo.

high powered laser, which is only available in about six labs in the world. This laser allows for a laser vaporization generation source for matrix isolation spectroscopy which is different than any other source that Dr. Amicangelo has used before.

He is hopeful that this data will fill in the gap in knowledge of key intermediates in the making of computer chip insulators and allow people to identify compounds in space from his man-made molecules.

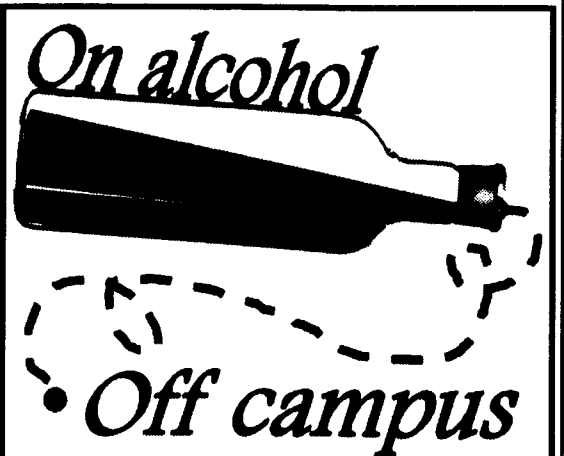
He is also hopeful that this sabbatical research in Taiwan will allow him to write a future grant proposal to have Penn State Behrend's very own laser vaporization source.

Code of Conduct Academic Integrity

Academic dishonesty includes, but is not limited to, cheating, plagiarism, fabrication of information or citations, facilitation of acts of academic dishonesty by others, unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, and tampering with the academic work of other students.

The University takes violations of Academic Integrity seriously. When an act of academic dishonesty is believed to have occurred, the process begins with a conversation between the faculty member and the accused student and follows the procedures outlined by the Faculty Senate (<http://www.psu.edu/dept/oue/aappm/G-9.html>). Only in the limited instances in which the faculty member believes that disciplinary, as well as academic, sanctions are appropriate should the process move from the realm of faculty and the college to the Office of Judicial Affairs.

Academic Dishonesty cases which result in academic sanctions only will not be reported out to others with the exception of when a subsequent academic dishonesty violation occurs. When an academic dishonesty case results in disciplinary action assigned by the JA Designee, the charge and sanction become part of the student's record which will be reported out following the guidelines outlined in our records policy.



When alcohol related activity occurs off the premises of the University, the Office of Judicial Affairs may consider initiating disciplinary action under Off-Campus Misconduct Policy. The University reserves the right to impose sanctions for the use, possession, service, or consumption of alcoholic beverages off the premises of the University campus when such behavior affects a Substantial University Interest.

http://www.sa.psu.edu/ja/off_campus.shtml

Top Science News:

ANTHROPOLOGY

Scientists have found what some are calling the "missing link" in human development - a 4.4 million year-old skeleton. Complete with a skull with teeth, arms, hands, pelvis, legs and feet, it indicates that the common ancestors of people and African apes (which include chimpanzees and gorillas) did not resemble chimpanzees, as many scientists have assumed, says anthropologist and project director Tim White of the University of California, Berkeley.

SPACE

Newly confirmed water on the Moon's surface could sustain astronauts with water, if a microwave device being created by NASA works as it should. The water was detected using 3 space shuttles that used infrared beams to find the water or hydroxyl, a chemical made of hydrogen and oxygen. If water could be properly harvested, new and longer space missions might be made possible.

HEALTH

A new study suggests that sleep deprivation, which most college students experience, could help accelerate the development of Alzheimer's Disease.

In the study, levels of beta-amyloid protein were studied in correlation with sleep. In sleep-deprived mice, the protein's abundance was higher, which caused more plaque buildup, which some suggest is a cause of Alzheimer's.

Scientist of the Week:

Today, October 2nd, Christian René de Duve was born. He is the man who discovered lysosomes and peroxisomes.

As we all remember from biology, lysosomes are the digestive organelles in a cell while peroxisomes are the site of metabolic processes. In 1974, he received the Nobel Prize for Physiology or Medicine along with Albert Claude and George Palade.

Chemistry Speakers:

WEDNESDAY, OCT. 14

Speaker: Dr. Shanhu Lee - Kent University / Ph.D. in Chemistry from Tokyo University

Background: Atmospheric, analytical chemistry - composition and effects of aerosols in the Earth's atmosphere

WEDNESDAY, NOV. 18

Speaker: Dr. Patrick Holland - Head of "Holland" Group at University of Rochester

Background: Molecules and the transformations they undergo (like those of enzymes and surfaces)

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