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CHEMISTRY STUDENT RESEARCH REDUCES

Explosion Risk

Working with chemicals can often be dangerous. While chemists follow standard safety protocol, there is always some degree of risk. Chris Copeland, a graduate student in the chemistry program, is researching organic synthesis, which can help to lessen the danger for people working with explosive chemicals.

His advisor, Dr. Peter Norris, explained, “We do what we call multistep synthesis, which is when we have a material we can get from nature, and then we build off of that using organic synthesis to build it to different places. The problem is that some of these steps or reactions we’ve known for many years are dangerous and, for instance, the one that Chris is working on . . . can be very explosive.”

Copeland is specifically looking at azides and their isolation during curtius arrangements, which often leads to explosive results.

Copeland is experimenting with what he has termed the “one pot reaction.” Rather than isolating the azide, he is combining all the elements together.

“We want to avoid some of the pitfalls that people have had with these things. We hope that all of our chemistry is going to happen sequentially in this flask so that we avoid the isolation of the problematic intermediaries,” said Norris.

After the completion of the project, Copeland hopes to publish his results and continue on toward a chemistry PhD. He credits his academic success, in part to Youngstown State’s undergraduate and graduate chemistry program.

Norris elaborated on the hands-on approach of Youngstown State’s faculty and access to state-of-the-art equipment, saying, “one of the main things that attracts people to our program is the availability of instruments and the availability of faculty. We will talk each day about the project to keep it going. With bigger schools, sometimes that’s not possible, because the advisor is not there or is busy doing other things. We’re able to communicate whenever we want, and they get tremendous exposure to instrumentation.”

Norris continued to say that Youngstown State students, like Copeland, are often successful after graduation and have a high placement rate in jobs and PhD programs.

“One of the main things that attracts people to our program is the availability of instruments and the availability of faculty.”

Peter Norris
What a great idea – help second-graders in Youngstown City Schools pass the high-stakes state test while providing Beeghly College of Education (BCOE) teacher candidates the opportunity to utilize strategies they learn in their reading methods courses! This true-to-life, win-win game plan, conceived by President Tressel and actualized through a 21st Century Learning Grant awarded by the Ohio Department of Education, gave birth to Project PASS—Penguin Assistants for Student Success. Co-PIs Dr. Mary Lou DePillo and Dr. Gail Saunders-Smith designed Project PASS during winter break 2014. The formal proposal involved preparing a detailed budget; writing job descriptions, interviewing and hiring a project coordinator and graduate assistants; notifying teacher candidates of the new field hours added to reading courses; and dialoguing with Youngstown City Schools’ (YCS) administrators and teachers about implementation that supports district literacy practices. Shortly after the beginning of the spring 2015 semester, BCOE teacher candidates---and a few other YSU students in non-education majors--- were working one-on-one with 288 second-graders in all six YCS elementary schools. In just one semester, over 90% of all YCS teacher-recommended second-graders had their very own BCOE tutor—a truly remarkable feat in a relatively short period of time! Fall 2015 proved to be just as powerful, with the BCOE providing nearly 300 tutors to YCS now third-graders. Project PASS followed the students as they entered into the new school year, providing consistency, motivation and the ability for even greater individualized literacy intervention. To date, over 15,000 hours of one-on-one tutoring have been invested through this project.

Short-term goals of the project are to increase YCS students’ literacy development in reading comprehension, fluency, and writing while simultaneously providing BCOE teacher candidates with authentic, meaningful field experiences and opportunities to test strategies discussed in reading courses. Long-term goals include fostering a love of reading in YCS students and increasing parent awareness of strong, home-based literacy practices through home links developed by the teacher candidates. Additionally, books were provided by the 2nd and 7th Foundation, an advocacy group founded by three former Ohio State athletes, Mike Vrabel, Luke Fickell and Ryan Miller, to help urban students “tackle illiteracy.” The donation of “seven” books to each 2nd grader helps in growing home libraries and creating more motivated and invested young readers.

Beyond these worthwhile and tangible goals, Project PASS envisions that Penguin tutors will become role models and life mentors for the young tutees. And it seems to be working. Many YSU tutors have remained with the same YCS student through spring, summer and fall semesters, with the children looking forward to their tutors’ arrival. The tutors have benefitted as well, seeing a return on their investment as their ability to differentiate, lesson plan, and use assessment data to drive instruction becomes second nature. BCOE teacher candidates are also seeing evidence of literacy growth in their students. Working in a YCS school can be the first opportunity for many teacher candidates to experience urban education up close and personal. Several teacher candidates indicate that this experience has opened their eyes to cultures other than the familiar.

YSU teacher candidates experience 30 hours of school-based teaching/learning events for each reading course taken per semester. Each hour of tutoring is logged by the candidate with a description of materials and activities planned before the lesson, and a focused reflection afterward. The quality of the logs, which serve as a precursor to more formal lesson-planning,
are measured using a rubric. Lesson-planning elements, including using APA citations, details of specific skills, lists of vocabulary and various types of questions, are practiced early on in a candidate’s preparation. This experience contributes to an expanded understanding of the need for specific planning and the real need for flexibility.

A research component has been designed with the Ohio Education Research Center at the Ohio State University to examine the effects of the tutoring component on the students’ literacy development as measured by diagnostic and state achievement tests. A series of formal assessments and informal evaluation measures provide data on the program’s success: teacher surveys, feedback from parents, exit-slip, the growth and passage of third-graders on their state assessment, logs, tiered benchmarking, and teacher candidate readiness for future classroom instruction. Perhaps best of all, tutors have the opportunity to earn scholarship dollars if their tutees pass the test for the Third Grade Reading Guarantee.

**Project PASS** provides a framework wherein tutors assist in the literacy success and growth of YCS students, while YCS students simultaneously assist in the success and developing expertise of BCOE teacher candidates. It’s a true win-win game plan when universities and school districts work collaboratively for the success of all students!
Preserving the History of Home Savings & Loan

In 2012, the Department of History at Youngstown State University entered into an agreement with the Home Savings Foundation (HSF), in support of the Home Savings & Loan, to fund a Graduate Assistant Internship (GAI) for its institution. Under the agreement, the HSF provides a stipend for a master’s student in the History Department’s Applied History Option while the University underwrites the candidate’s tuition cost. The interns, three in the course of the program’s four year duration, have created an archive containing the documents, photographs and objects that constitute a historical record of Home Savings & Loan. The archive, which is cataloged and computer accessible, provides Home Savings & Loan with streamlined access to records, images and objects, allowing the company to better serve its customers.

The $40,000 research project, originating with Darlene Pavlock and continuing under current Foundation Director, Colleen Scott, has funded internships for three students: Lisa Jensen, Katie McClurkin and Aimee Wehmeyer. Overseen by university supervisors, Dr. Donna DeBlasio and Dr. Martha Pallante, the project also relies on the professional and practical advice from Martha Bishop, the Ohio History Connection’s Archival Assistant employed at the Youngstown Historical Center of Industry and Labor.

Wehmeyer will also be creating an exhibit using material from the archives about the history of Home Savings & Loan for the Foundation during the spring 2016 semester as part of her GAI duties.

Ohio Export Internship Program Strengthens Students’ Global Perspective

In the current business market, it is important to ensure that business students are prepared to view the world on not only a domestic, but also on international scale. To make its students more prepared for international business, the Williamson College of Business Administration at Youngstown State University offers The Ohio Export Internship Program (EIP).

The Ohio Export Internship Program, run in partnership between the WCBA and the Ohio Development Services Agency, is an export-focused class in the spring semester with a paid internship during the summer. Students enrolled in the course will learn about expanding to international markets and then apply their knowledge to their internship through hands-on experience.

During their internship, students will be working with senior executives at Ohio companies. Through this partnership, they will acquire valuable skills in the field that they can combine with their classroom experiences for future internships and jobs. The internship will also allow students to network with other industry professionals.

The program is looking for students who are interested in exporting, international business, have organization and planning skills, maintain a 3.0 GPA, and are graduating after Summer 2016.

The WCBA also encourages and financially supports the EIP students to take a national certification exam offered by National Association of Small Business International Trade Educators (NASBITE) to become a Certified Global Business Professional (CGBP). This certification is highly regarded by companies conducting international trade, as well as US government agencies. This program is also supported and recognized by the SBA.
Youngstown State University is committed to serving military veterans and service members. In addition to the recent opening of the Veterans Resource Center, graduate students in the gerontology program are taking a special interest in older veterans by looking into their long-term care.

Amy Plant, Joe Voytek and Amber Durkin, along with the help of Dr. Daniel Van Dussen, set out to evaluate the Veteran’s Home and Community-Based Services Program. According to Plant, the program “was created in 2008 to give veterans a choice of either entering a nursing home or remaining in their homes. It provides veterans with a flexible budget to cover their personal care needs, such as help dressing, food preparation, and other activities of daily living.”

Plant, Voytek and Durkin chose this graduate program because they wanted to help assess areas where improvements can be made, and to enable the possibility of replicating the program on the state and national level.

Voytek stated that he also hoped this project would bring attention to veteran research done in the YSU gerontology program.

“There are many opportunities for veterans research funding, and I hope to see programs at our university come together to pursue them,” he said.

Plant and Voytek attribute the success of the program in part to the gerontology program. Plant described her decision to study at the graduate level by saying “we are a very productive gerontology department, and I feel we also are given the appropriate tools not only to be competitive in the expanding job market in gerontology, but we are also able to pursue our own interests.” The project also received grant funding from the Area Agency on Aging.

Veterans in the Spotlight

GERONTOLOGY DEPARTMENT RESEARCHES LONG-TERM CARE

Better Access to Success: Research Aims to Help Those with Disabilities

The transition to higher education can be a tough academic adjustment for students, made even more difficult when a student has a disability. However, Alex Harless, a student in the MA English program, hopes to help students with disabilities succeed in composition programs.

Harless, who is also a graduate teaching assistant, said, though he had not previously looked into disability studies, he found the research to be highly important. According to Harless, “The research process has provided me with ideas for future growth in the academic field. I have never worked with disabilities studies research, so it was a new learning experience for me.”

Harless is specifically looking at the issues of accommodation and accessibility in composition classrooms. He is looking both what the students perceive to be issues as well as what instructors perceive.

Dr. Tiffany Anderson, one of Harless’s advisors on his project, elaborated on disabilities studies, stating that “it is an interdisciplinary field that is not simply us thinking about the representation of disabled bodies in media and in society.” Anderson particularly emphasizes the importance of the voice of disabled people when discussing these issues.

Additionally, Anderson stated that the initial reaction of able-bodied instructors to disabled students will often be guilt and a desire to apologize.

“By coming from that place of guilt, able-bodied people are affirming their power in being an able-bodied person, and is reinforcing normalcy,” stated Anderson.

Through his research, Harless’s ultimate goal is to help students and faculty not only at YSU, but at universities everywhere. He “hope[s] to discover issues students and instructors may come across in regards to accessibility and accommodations and offer possible solutions.”

From left: Evan Brown, Alex Harless, Oliver Phillips and Dr. Anderson work on essay revisions and MLA formatting via Blackboard Learn.
YSU’s Center for Autism Studies aims to increase the involvement of faculty and students engaged in autism research, improve the preparation of educators and human services professionals who work with individuals with autism spectrum disorders (ASD) and their families, and provide professional development to improve services and outcomes for individuals with autism across their lifespan. One of the Center’s initiatives, the Transition Options in Postsecondary Settings Program (YSU-TOPS) engages YSU students, staff and faculty in supporting young adults with autism spectrum disorders or intellectual disabilities (ID) in an integrated college experience. The program focuses on increasing students’ self-determination and employment skills through participation in: a) inclusive college classes and program specific courses; b) social and recreational experiences; and c) internships within the university and community businesses.

The Center for Autism Studies has been successful in securing external funding to support the program since its inception in 2013. Initial funding was received through Ohio State University’s (OSU) Transition Programs for Students with Intellectual Disabilities Grant from the US Department of Education’s Office of Postsecondary Education to cover program development efforts at YSU. In January 2015, the YSU Center for Autism Studies was one of 12 postsecondary institutions awarded the Autism Speaks® Brian and Patricia Kelly Postsecondary Scholarship Fund in the amount of $25,000 to provide educational opportunities after high school for young adults with ASD. The funds support students’ participation in the TOPS program during the current academic year.

During the summer of 2015, Dr. Darlene Unger, the Director of the Center for Autism Studies, collaborated with colleagues from four Ohio institutions (OSU, University of Cincinnati, University of Toledo and Marietta College) in submitting a grant to the US Department of Education Office of Postsecondary Education to enhance and evaluate programs and participant outcomes across programs at the respective universities. YSU will receive approximately $140,000 across the five years of the grant. Unger believes YSU’s collaboration with colleagues across four institutions of higher education provides strong evidence of having developed a network to drive systematic change in education and employment services for individuals with ASD and ID in Ohio as well as position the Center for Autism Studies to secure additional funding to support research and other goals of the Center.

The TOPS program provides additional support and career-focused teaching and learning experiences for students with ASD or ID who enroll at YSU and access typical university services, as well as individuals who do not wish to pursue a degree yet desire opportunities to continue their education and career preparation beyond high school with similar-age peers. The Higher Education Opportunity Act of 2008 expanded opportunities for students with autism or intellectual disabilities with programs similar to TOPS operating at over 245 colleges and universities across the country. The regulations for these programs mandate 50 percent or more of students’ time in the program represent participation in inclusive or integrated environments where the number of individuals without disabilities exceeds the number of individuals with disabilities. As the program evolves, TOPS students will enroll in university classes, participate in internships across the university or community, and access the same university events and services as any other YSU student.
YSU graduate students have been actively involved in the development and implementation of the TOPS program and in writing grant proposals. James Lingo, a 2015 graduate of the Master of Science in Education in Counseling - Student Affairs Leadership and Practice program, served as the project coordinator from 2014-2015. In this role, he was given opportunities to develop and hone his skills in working with students with ASD and cognitive disabilities. Mr. Lingo, who now works as an Academic Advisor to Special Populations at Florida Gulf Coast University communicates, “Coordinating the TOPS program not only prepared me for working with students with ASD and cognitive disabilities, it prepared me to work with students in a holistic manner. Every class with the TOPS Program is unique and can vary from day to day. This constant change and adjustment helped me to think quicker and be more solution focused when working with students in the advising realm. Through working with TOPS, I gained several character attributes that translated well into my job as an academic advisor. Most importantly I learned the value of patience and critical thinking. The critical thinking component must take place in both the advisor and the student for a lesson or appointment to be successful.”

First-year school psychology graduate student, Savannah O’Brien, now serves as the TOPS program coordinator, and graduate counseling student Adam Bickell serves as a TOPS instructor. Ms. O’Brien works to develop curricula and coordinate inclusive activities for TOPS students. She coordinates the involvement of YSU undergraduate students who work with TOPS students though tutoring, instruction in self-determination skills, and also provides social or recreational experiences. Susan Maruca, a practicing attorney and part-time instructor for YSU’s English Department volunteers with the TOPS program, coordinates services for degree-seeking students and provides instruction to TOPS students in writing, self-advocacy and technology integration. YSU students majoring in special education, applied behavior analysis, counseling and psychology have served as educational coaches, and receive training on working with students with ASD and ID in the areas of systematic instruction, based on the principles of applied behavior analysis, and social thinking.

Although numerous support services are available to all YSU students through the Center for Student Progress, students with ASD or ID may be reluctant to seek assistance or be less skilled in communicating their learning challenges or other support needs. Some colleges and universities have been slow to identify and respond to the needs of individuals with ASD, not necessarily because of the lack of interest, services and support available on college campuses, but because of limited knowledge of how to best meet the needs of individuals with ASD or ID. Students with ASD or ID who desire accommodations must register with student disability services and initiate requests for accommodations.

Students with ASD often experience difficulties with social cognition and communication and need further strategy instruction in skills related to perspective-taking and interpreting emotions and the intentions of others in order to advocate for accommodations, participate in class discussions and activities, problem solve with peers, and interact with advisors, classmates and instructors. TOPS program staff and educational coaches provide the critical link between the student with ASD or ID and existing university services. The aim is to go beyond mere compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act Amendments in supporting TOPS students. The program also offers specialized instruction in skills such as self-awareness, self-advocacy, choice making, self-monitoring, goal setting, and communication/perspective-taking. Individuals with ASD and ID may have underdeveloped skills in these areas, yet these skills are necessary to be successful in postsecondary education and employment. For additional information about the TOPS program, please email Darlene Unger (ddunger@ysu.edu) or Savannah O’Brien (sjobrien02@student.ysu.edu).
In order to help populations without easy access to healthcare, the Master of Science in Nursing degree at Youngstown State offers a Nurse Anesthetist Traineeship (NAT) Program, to increase nurse anesthetists in areas underserved by nurse anesthetists.

The program is funded in part by a NAT grant, which provides students funds to assist them with tuition, books and other school related costs. This funding allows the students to spend more time focusing on the traineeship program. One hundred percent of the eligible students in the traineeship were awarded the grant. “The anesthesia students are unable to work outside the classroom while in this program, due to the significant classroom and clinical time involved while attending school. The Nurse Anesthetist Traineeship grant monies are applied to student tuition, helping to relieve some of the stress and great financial burden that the students experience,” says Dr. Valerie O’Dell, Principal Investigator of the Nurse Anesthetist Traineeship Program.

Within the program, many of the students are planning on practicing in a medically underserved community after graduation.
George Kubas, a PhD Materials Science and Engineering student, and Bill Rees, a master’s student in Biological Sciences, are working on a project focusing on peptides and explosives that will eventually help military personnel.

“We are finding a peptide, which is a short chain of amino acids, that’s selective towards explosives. The selected peptide would then be connected to carbon for implementation into a sensor project. We would then have selectivity, and carbon nanotubes have the ability to have high sensitivity as well, so it offers has the best of both worlds for the sensor,” according to Kubas.

The project combines Kubas’s background in materials science with Rees’s background in biology to put detectors on military personnel so, if someone were hurt, help would be able to be sent quickly.

The peptides act as a sensor and are bound to carbon nanotubes, which, when they come into contact with specific chemicals, change their electrical properties. This change allows outside detection of explosives and other chemicals. Additionally, the peptides identify albumin, which is the protein most commonly found in human blood.

Rees is advised by Dr. Diana Fagan. Rees and Fagan scan the peptides for the ability to bind to the molecule that Kubas and his advisor, Dr. Pedro Cortes, have specified. Then, it is purified and bonded to the nanofibers.

According to Cortes, this is novel research. “Even though we are a small university, we are doing high tech research that many other universities are not doing. No one has done the project we’re doing here, with either the human blood or with the explosives.”

In addition to the innovative research, Rees says he enjoys the master’s program because of the close relationship between faculty and students.

“Youngstown State has great master’s programs, especially in biology. Everyone is so personable. They do a great job of helping you understand lab techniques and real world applications of your own project, and to think like a scientist; to investigate and talk about your project in the scientific way,” he stated.

While the project is ongoing, Kubas and Rees have already been able to present their findings. Students get the opportunity to present their research both during QUEST, Youngstown State University’s annual event to showcase student research, and during Biology Day, which is sponsored by the biological sciences department. According to Fagan, “students have the ability to present their work on and off campus.”

Additionally, Kubas is presenting his findings at a conference sponsored by the Department of Defense in Austin, Texas, this December.
Sometimes, in order to fully experience everything art has to offer, one must travel around the world. This is what Dragana Crnjak, associate professor of art at Youngstown State University, is currently doing in the former Yugoslavia.

Currently Crnjak is living in Trebinje, a small town in Bosnia, while she researches art located in 13 medieval monasteries located in Bosnia and Montenegro. The monasteries are the oldest in the region built between the 12th and 14th centuries, and house a particular style of art known as the Rashka School style of architecture and painting. Her objective is to analyze the frescos and to document the design and ornamental structures. She is also focusing on the architecture in the interior of the monasteries.

According to Crnjak, “I am excited by the challenge of finding the ways to fuse the traditional elements of the medieval fresco painting with the geometric and abstract visual thinking in my work.”

In addition to studying the work, Crnjak is also using the research to create original pieces. She is creating “sixteen 20 inch by 15 inch mixed media works based on the sketches and observational drawings from the on-site research.” To do this, she is combining acrylic paint, photo transfers, stenciled patterns and other painting mediums.

When she returns to her Youngstown-based studio in December 2015, she will also be creating 12 additional pieces based on her research.