

Friends and Colleagues,

We hope you are enjoying the spring and looking forward to even brighter times and warmer weather in the coming months.

From clinical placements to entrepreneurship, applied learning encompasses many things. The common thread that ties these distinct experiences together is **partnerships**. Applied learning requires the commitment of a partner to help support and guide learning and the connection of theory to practice. Developing and maintaining strong partnerships - where partners, students, and campuses work together and benefit from the relationship - requires effort and dedication to the sharing of ideas and responsibilities. After having produced many issues of The Umbrella on various topics, we decided to focus specifically on partnerships for this issue as a way to highlight how essential they are to student success.

We hope you enjoy reading about the great work being done at SUNY campuses by students, faculty, and staff. Happy Reading!

With much respect,

The Applied Learning Team



PARTNERSHIP SPOTLIGHTS

Since our focus for this newsletter is on partnerships, we are highlighting examples of outstanding partnerships being developed at the SUNY Research Foundation. These all have the potential to yield outstanding applied learning experiences for students.

Upstate and Quadrant Partnering on COVID Saliva Test

By: Emily Kulkus

Upstate Medical University and Quadrant Biosciences have received one of MedTech's 2020 Honors for their work developing a saliva swab test to detect the coronavirus.

MedTech named the Upstate and Quadrant Biosciences COVID diagnostic saliva test as Project of the Year. The saliva swab test is being used across New York State and throughout the SUNY system. The honor is "awarded to an initiative that has had a singular and demonstrable positive impact on public health," according to MedTech.

Med Tech is state-wide trade association of more than 100 pharmaceutical, biotech and medical technology companies, their suppliers and services providers, and research universities.

The test developed by Upstate Medical and New York Start-Up Quadrant Biosciences, called Clarifi COVID-19, recently received a number one ranking for COVID-19 saliva tests by the U.S. Food and Drug Administration for detecting the virus in its earliest stages. The test was cited by the FDA as being among the most sensitive tests regardless of type, ranking sixth worldwide in detecting the virus. The test is also cost-effective and easy to use, which Governor Andrew Cuomo credited for helping SUNY campuses across the state pinpoint cases at the earliest stage of the virus.

"We sincerely appreciate MedTech recognizing the work that Upstate, and our partner Quadrant Biosciences have done in developing this life-saving test," said Upstate President Mantosh Dewan, MD. "The test is ground-breaking, cost



Professor Frank Middleton, PhD, with the Clarific Covid diagnostic saliva swab test he helped develop with others at Upstate and Quadrant Biosciences.

effective and easy to use to detect the coronavirus in its earliest stages. We are proud of this honor as the project is indicative of the incredible research and work happening at Upstate every day."

MedTech Executive Director Winthrop Thurlow said Upstate's saliva test "leapt off the page," when the organization was considering its annual honors.

"It was really the stand-out project of the year," Thurlow said. "One of the criteria is the project should have a significant impact on the industry in New York or the advancement of healthcare in New York State. When we look at the Upstate/Quadrant partnership we really saw that as a significant advancement over the last year in the delivery of healthcare. And it clearly won't be limited to the residents of New York State, it has worldwide potential."



Rheonix is a molecular diagnostics company working with UB. Richard Montagna (left), senior vice president for scientific and clinical affairs at Rheonix, with UB's Michael Buck, associate professor of biochemistry.

University at Buffalo Industry Partners Step Up to Fight COVID-19

By: Jessica Szklany

UB leveraged state funding to connect its academic community with industry partners to foster innovation in the life sciences - particularly in the areas of new therapeutics, diagnostics and medical devices, COVID-19 rapid diagnostic test kits and their reagents. A next-generation vaccine adjuvant platform. How to predict dosing of monoclonal antibodies. Air sterilization technology.

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You may not be familiar with all these terms and technologies, but if you or a loved one contracts COVID-19, they could be vital for prevention, diagnosis, treatment and recovery. And, they are developed right here in Western New York - made possible, in part, through state funding leveraged by the University at Buffalo.

Support from Governor Andrew M. Cuomo, Empire State Development and the Division of Science Technology and Innovation (NYSTAR) has enabled UB to connect its academic community with industry partners to foster innovation in the life sciences - particularly in the areas of new therapeutics, diagnostics and medical devices.

Through UB's New York State Center of Excellence in Bioinformatics & Life Sciences (CBLS), the Center for Advanced Technology in Big Data and Health Sciences (UB CAT) and Buffalo Institute for Genomics and Data Analytics (BIG) - divisions within the **Office of Business and Entrepreneur Partnerships** - UB's industry partners gain access to university expertise in faculty and students, state of the art technology platforms and funding to accelerate the growth of the life sciences companies in Western New York. Several of UB's industry partners have pivoted their research and development efforts toward winning the battle against COVID-19.

ZEPTOMETRIX AND RHEONIX TACKLE DIAGNOSTICS



ZeptoMetrix molecular biologist Lauren Morrow loads reagents into a cartridge used in a digital droplet PCR platform with an automated droplet generator. Photo: Karuna Sharma.

Advancing COVID-19 testing is a focus for ZeptoMetrix, a life sciences company working to develop new and highly effective diagnostic tools for infectious diseases worldwide. Made possible through the support of

BIG, ZeptoMetrix is utilizing technology at the CBLS that enables the precise quantitation of the amount of virus formulated into diagnostic test controls that help to verify accuracy of COVID-19 test results. Without controls, tests can produce false positives or negatives, causing confusion and anguish for patients and their families.

To produce dependable controls, ZeptoMetrix scientists inactivate the coronavirus in a specialized lab that allows them to safely work with highly infectious agents and then formulate the treated virus at target concentrations based upon testing sensitivities. The resulting non-infectious reagents can then be used by hospitals, labs and researchers without risk of infection.

"Through support from BIG and access to sophisticated laboratory equipment located at the CBLS, we were able to better characterize the concentration of inactivated SARS-CoV-2 and thereby create more precise controls that greatly improve the testing community's reliability in conducting

COVID-19 molecular tests," said Shawn Smith, CEO of ZeptoMetrix.

The non-infectious reagents developed by ZeptoMetrix have been utilized by another UB partner, Rheonix, to advance rapid diagnostic COVID-19 testing. Rheonix is a molecular diagnostics company that produces fully automated one-step benchtop testing devices and microfluidic assays, used in part for the detection of infectious disease. The company has a longstanding relationship with UB, including collaborating with researchers at the CBLS and its Genomics and Bioinformatics Core, and receiving support from UB CAT.

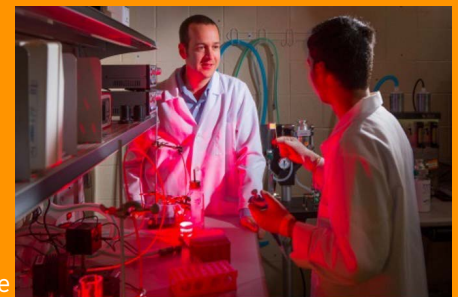
In less than three months after the pandemic struck the U.S., Rheonix produced a fully automated COVID-19 diagnostic test. With minimal training, technicians in approved clinical laboratories can take and test patient respiratory samples using the fully automated Rheonix workstation, receiving results in less than a day versus the several days it can take to receive results when sending them out to testing labs.

In April, the Rheonix test received the U.S. Food and Drug Administration's emergency use authorization (EUA) for COVID-19 testing and is now in use at laboratories in local and regional hospitals and health networks in New York State and beyond.

"Rapid diagnosis is critical in efforts to control the SARS-CoV-2 virus," said Richard Montagna, senior vice president for scientific and clinical affairs at Rheonix. "We at Rheonix are grateful to the people on the front lines fighting the spread of the COVID-19 illness and are proud to be able to support them with a rapid, accurate and automated tool to assist in their efforts."

POP BIOTECHNOLOGIES PURSUES A VACCINE

At the start of the pandemic, POP Biotechnologies, Inc. (POP BIO), a UB spinout company located at the UB Incubator @ Baird, was able to swiftly transition their particle-based vaccine delivery platform to focus on addressing the COVID-19 pandemic. The proprietary platform was originally designed to enhance the performance of vaccine antigens for various illnesses such as respiratory syncytial virus, HIV and cancer - work that has been supported by UB CAT funds.



POP BIO's vaccine platform is based upon research from the lab of Jonathan Lovell, associate professor of biomedical engineering. Credit: Douglas Levere.

POP BIO developed, and has been testing, a SARS-CoV-2 protein vaccine candidate in partnership with Korean vaccine maker Eubionics. The results show the system is effective in preclinical studies.

"The underlying technology can rapidly generate immunogenic particles for vaccine applications, and that is the approach we are pursuing," explained Jonathan Lovell, co-founder of POP BIO and associate professor in UB's

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Department of Biomedical Engineering. “We hope to bring it into clinical testing in the near future.”

The company is also working on a peptide vaccine that does not require freeze storage, allowing for easier and more widespread distribution.

According to Lovell, POP BIO’s approach has been shown to be particularly potent for SARS-CoV-2 vaccine development. Through UB CAT funding, POP BIO will continue to generate data to further validate the platform technology.

In addition, the company is receiving a \$3 million equity investment from Eubiologics, with whom it has formed a joint venture, EuPoP Life Sciences, headquartered in Buffalo. POP BIO also has active research collaborations with two major, international pharmaceutical vaccine makers.

ENHANCED PHARMACODYNAMICS EXPEDITES TREATMENT OPTIONS

While much COVID-19 research is concentrated on testing and a vaccine, others are working on treatment options to help save the lives of those who have the virus, including BIG partner and CBLS tenant, Enhanced Pharmacodynamics (ePD). The big data service provider is supporting commercialization of a potential treatment for COVID-19, applying methods normally used in their work on cancer drug development.

Using a quantitative systems pharmacology approach, ePD creates computational models that safely predict how monoclonal antibodies - drugs intended to both prevent and treat existing COVID-19 infections - will interact with the human body. The company’s work enables new compounds to be evaluated and to make preliminary dose projections and other drug development decisions prior to having data in human volunteers from clinical trials.

A partnership with BIG enabled ePD to purchase sophisticated commercial software and grants them access to computational expertise and high-performance supercomputers at UB’s Center for Computational Research (CCR), located in the CBLS. State-of-the-art computational horsepower through CCR substantially optimizes the company’s work. It has also benefited from UB interns, some of which are now ePD employees.

“We utilize the CCR to run computational machine-learning algorithms, which incorporate various in vitro and pre-clinical in vivo data sources, to project minimally effective human dosing regimens to expedite development of these novel treatment options for COVID-19,” said Scott Van Wart, ePD vice president and chief scientific officer.

YOU FIRST SERVICES STOPS AIRBORNE VIRUS IN ITS TRACKS

Equally important to fighting COVID-19 are prevention techniques such as environmental systems designed to remove or destroy pathogens from the air. Buffalo-based company You First Services has licensed technology from UB to develop SteriSpace™, an engineered air sterilization system that uses compressive heating and pressure to break up and destroy airborne pathogens such as COVID-19.



Scott Van Wart (left) and Donald Mager (right), both of Enhanced Pharmacodynamics, at UB’s Center for Computational Research. Credit: Douglas Levere.

SteriSpace can be a standalone unit for individual rooms or can scale up to be integrated into a building’s air handling system and customized for different configurations. The technology can be permanently installed to provide clean air for any indoor environment in which people gather where pathogens are likely to linger, such as hospitals and schools.

In addition to licensing technology from UB, You First Services is leveraging the CCR at the CBLS, as well as funding from UB CAT, to simulate and model airflow in indoor spaces.

“We highly value our long-standing partnership and collaborative links with UB. Through our collaboration with academic institutions, we have gained new perspectives on the latest technologies and developed insight to help combat existing, new and reemerging diseases faster. The incredible quality of the research programs here at UB has helped make Western New York a leading destination for life sciences and biotechnology research,” said Satish Sharma, executive chairman and chief executive officer of You First Services Group of Companies and research associate professor of urology in the Jacobs School of Medicine and Biomedical Sciences at UB.

“Uncontrolled infections can bring miseries, overwhelm the health care system and negatively impact economies. At You First Services, we are committed to continuously working to transition basic research to unique and outstanding clinical applications in terms of productivity, impact and excellence. We will continue to partner with UB to make a significant positive impact on the overall economy of the state and region.”

PARTNERSHIPS SERVE THE COMMUNITY AND BEYOND

These are just some of the potential life-changing, biomedical technologies from UB partners that are transforming prevention, diagnosis and treatment in the global fight against COVID-19. Continued support of future innovations will aid in cementing Western New York as a hub for life sciences and positively impact the health of both community residents and the economy.

“These university-industry partnerships demonstrate the impact of how academic and private organizations in the community can join forces to leverage each other’s strengths to find solutions for complex scientific challenges

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and processes and ultimately contribute to innovation and economic growth in the Buffalo Niagara region,” said Christina Orsi, UB associate vice president for economic development.

“Since the beginning of the pandemic, our campuses went into action to help their local communities and the entire state - whether it was coming up with innovative ways to test for COVID-19 or conducting breakthrough research to understand the virus,” said SUNY Chancellor Jim Malatras. “The recent partnerships between University at Buffalo and local organizations in health care is yet another example of SUNY’s strength in working collaboratively with industry leaders to solve for problems and overcome obstacles caused

by COVID-19. Our ability to share resources and expertise, as University at Buffalo is doing, will continue to serve our communities well as we work together to contain the spread of this deadly virus.”

Empire State Development Acting Commissioner, and President and CEO-designate Eric Gertler adds, “The University at Buffalo’s partnerships with industry leaders in the fight against COVID-19 are highlighting the economic and life-saving benefits of New York State’s industry-university collaborations. Governor Cuomo’s strategic investments in Buffalo, and UB entrepreneurship, have laid the groundwork for this scientific research that is helping communities both battle the pandemic and build back.”

SUNY Campuses Are Partner Institutions in \$115M DOE Center on Quantum Computing

Adapted from press releases from Brookhaven National Laboratory, Stony Brook University and the US Department of Energy

Stony Brook University and SUNY Polytechnic Institute University are part of a new U.S. Department of Energy (DOE) research center devoted to quantum information science research.

Led by Brookhaven National Laboratory (BNL), the Co-design Center for Quantum Advantage (C2QA) will focus on quantum computing. Comprising several national labs, research centers, universities, and industry, the C2QA team will build the fundamental tools necessary for the United States to create quantum computers that provide a true advantage over their classical counterparts. BNL is managed for the DOE by Brookhaven Science Associates, a partnership between the Research Foundation for SUNY on behalf of [Stony Brook University](#), and [Battelle](#).

“The founding of the Co-design Center for Quantum Advantage (C2QA) establishes Stony Brook University as one of the nation’s leading centers in quantum information, a strategically important and highly competitive area of research worldwide,” said Dmitri Kharzeev, PhD, Distinguished Professor in the Department of Physics and Astronomy at Stony Brook University and Director of the Center for Quantum Materials. “C2QA will incorporate Stony Brook’s quantum science expertise to develop new approaches to quantum computing and quantum technology, as well as educate the next generation of quantum scientists and engineers.”

World-leading experts in QIS, materials science, computer science, and theory will work together to resolve performance issues with today’s quantum computers by simultaneously designing software and hardware (co-design). Their goal is to achieve quantum advantage in computations for high-energy and nuclear physics, chemistry, materials science, condensed matter physics, and other fields. Quantum advantage refers to a quantum computer outperforming a classical computer on a useful task.

The other partnering institutions on C2QA are: Ames Laboratory, Caltech, City College of New York, Columbia University, Harvard University, Howard University, IBM,

Johns Hopkins University, MIT, Montana State University, National Aeronautics and Space Administration’s Ames Research Center, Northwestern University, Pacific Northwest National Laboratory, Princeton University, Thomas Jefferson National Accelerator Facility, University of California-Santa Barbara, University of Massachusetts-Amherst, University of Pittsburgh, University of Washington, Virginia Tech, and Yale University.

Quantum computers have the potential to solve scientific and other kinds of problems that would be practically impossible for traditional supercomputers. However, the current generation - called noisy intermediate-scale quantum - suffers from a high error rate because of noise, faults, and loss of quantum coherence. Quantum bits (qubits), the information-storing elements of quantum computers, are very delicate. Vibrations, temperature changes, electromagnetic waves, and other interactions between qubits and the environment or material defects in qubits can cause quantum decoherence. In quantum decoherence, these errors cause the qubits to lose their information, and the calculation cannot be completed.

Through materials, devices, and software co-design efforts, the team will understand and control material properties to extend coherence time, design devices to generate more robust qubits, optimize algorithms to target specific scientific applications, and develop error-correction solutions. To achieve these goals, they will leverage materials characterization facilities at Brookhaven’s Center for Functional Nanomaterials and National Synchrotron Light Source II, device design and fabrication capabilities in industry and academia, and IBM’s Qiskit open-source framework for writing quantum programs and its Q Prime prototype quantum computer.

The DOE announced five research centers in all, based at national laboratories around the country. Supporting the National Quantum Initiative Act, each of these interdisciplinary, multi-institutional centers receives \$115 million in DOE funding over five years.

ENTRIES

Current Findings on Higher Education Partnerships and Best Practices

By: *Spencer Brooke Hayes - SUNY Applied Learning Graduate Student Assistant*

SUNY PARTNERSHIPS

Partnerships have continued to become an important aspect of university-community lifestyle. Providing an opportunity for collaborative work creates an environment where common interests and shared goals can be tackled with greater resources and manpower. Recently, partnerships have changed to follow the social distancing mandates throughout the state. By looking at examples from other universities, we can gain a better knowledge about best practices for adapting collaborations.

SUNY has been involved in several partnerships prior to the pandemic and continues to interact with the community. The Office of Research and Economic Development encourages the implementation of system wide resources in the community through three elements, which include the following:

1. "Research Talent: Attract, develop, and retain the best researchers, innovators and entrepreneurs;
2. Strategic Priorities: Strengthen leadership in key scientific and technological domains to drive economic growth, societal impact and human well-being; and
3. Key Partners: Establish long-term, vital partnerships with key stakeholders in strategic areas"¹.

STEAM initiatives are the core for many of SUNY partnerships. SUNY collaborations are particularly interested in environmental health and clean energy, artificial intelligence and next-generation communication, biomedical research and substance addiction, and infectious diseases¹. Infectious diseases have been at the forefront of partnerships worldwide with the pandemic lasting for more than a year. On December 6, SUNY Upstate Medical partnered with the Albany International Airport to administer coronavirus tests to airport employees and travelers². Through this partnership, SUNY Upstate determined that they will be capable of administering 200,000 tests per week through the established testing facilities located at the airport². SUNY Upstate has also agreed to provide take home testing kits for

travelers at a reduced cost².

STRONG PARTNERSHIP EXAMPLES OUTSIDE OF SUNY

The National Council of State Boards of Nursing has assisted in adapting current partnerships between universities and health centers. Typically, "students are hired by the hospital and considered paid employees, while at the same time, earn clinical credit through their educational institution with faculty to oversee and evaluate skills"³. Nursing Departments in Iowa have taken the unfortunate circumstances to create a partnership that allows continued clinicals⁴.

The University of Iowa Hospital and Clinics Department of Nursing Services and Patient Care's partnership with the University of Iowa College of Nursing and Kirkwood Community College has found a way to continue nursing students clinicals in a safe and effective manner⁵. At the start of the pandemic, concern over appropriate protection for nursing students and faculty along with the uncertainty of the virus spread halted students' ability to work in healthcare environments⁵.

As more information regarding the virus has been acquired, better precautionary measures have been implemented to allow nursing students to record clinical hours⁵. When Iowa universities along with others across the country got the stamp of approval from the National Council of States Boards of Nursing to allow students in health care offices, nursing students were then seen as essential workers⁵. This is not to say that there aren't necessary precautions in place for nursing students such restricting their exposure to COVID-19 positive patients⁵. University of Iowa and Kirkwood Community College faculty adjusted their assignments to help with scheduling of student clinical hospital hours⁵.

The University of Iowa and Kirkland Community College found several principles that have made their partnerships with the University of Iowa Hospital successful. For one, communication between all actors is required to ensure information is transferred correctly⁵. It is also important that clinical resources be divided appropriately and especially, to

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where they are needed most first⁵. The goals of all parties should be evaluated, and plans devised to achieve those aspirations⁵. Often to reach these goals, flexibility is required on the part of all⁵. Lastly, students should be considered essential workers during times as such⁵.

For areas that cannot adapt in-person experiences as easily as some areas, consideration of virtual partnerships can be beneficial. Penn State Scranton and S. Seifullin Agro Technical University began their university collaboration, Experiential Digital Global Engagement (EDGE), in the fall of 2019⁶. EDGE is funded through the United States Department and is aimed at creating a bridge between technology and ecology⁶. Through this partnership, students were able to not only develop an interactive Android app, but also learned about each other's cultures⁶.

DEVELOPMENT

To develop a successful virtual partnership like the one explained, there are a few suggested steps educators should take. For one, a pilot collaboration should be used to work out all the kinks in the program and determine the best technology and assignments⁷. When partners are decided, ones that are willing to put in the necessary time

and work⁷. Partners should also be evaluated in terms of the resources they can provide to the collaboration⁷. Taking into consideration time zones is imperative to ensure that class times and meetings respect everyone's scheduling⁷. Lastly, partnerships should benefit parties equally, "experiential learning increases students' abilities in problem-solving by critically thinking through, analyzing and finding solutions to complex problems. For the partner, it provides a service which otherwise would be costly and time-consuming to achieve"⁷.

For campuses interested in involving their students in partnership experiences, SUNY Works provides the opportunity to do so. With a goal of "supporting the growth of experiential/applied learning opportunities for students across the entire SUNY system, especially in areas of cooperative education and internships, and continuing to provide system-level support for students, employers, faculty, and entire campuses," SUNY works can bring new applied learning opportunities to students⁷.

Interested learning more about partnerships and best practices? Keep an eye out for a collection of white papers to be circulated in the upcoming months.

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A Renaissance North of Main in Binghamton: University-Community Partnerships Support Rejuvenation of Binghamton Neighborhood

By: Laura Reindl

For 30 years, a neighborhood in downtown Binghamton has been plagued with a reputation for being dangerous. People were hesitant to live north of Main Street, and those who were there before the problems began struggled to figure out what to do. In the last few years, this neighborhood, now known as NoMa (North of Main), has begun to see a renaissance led primarily by those who live there, aided by city officials, local nonprofits and businesses, and several groups and individuals from Binghamton University.

SAFE STREETS

Mary Webster moved to NoMa's Edwards Street in 1990 and has been a driving force behind bringing the community together ever since. Drug and later gang activity were evident, and a sector of residents was fearful of the neighborhood becoming ever more dangerous.

This was the impetus behind the creation of Safe Streets, a grassroots neighborhood-watch organization, which has evolved into the 501c3 nonprofit organization that now primarily serves as the fiscal sponsor for the current NoMa neighborhood association.

In the early days of Safe Streets, Webster and her neighbors kept watch from their porches, passing along tip sheets to the police with descriptions of suspected drug activity. Eventually, Safe Streets took on a more organized approach, including residents, landlords, business owners and representatives from the city. As its reputation grew, more local organizations and nonprofits got involved.

"As volunteers, we didn't have the knowledge, skills or time to do the work ourselves," said Webster, "but we could identify the problems and bring the experts together to solve them."

One of Safe Streets's biggest accomplishments was the creation of Walnut Street Park in 2013, which gave residents a clean, safe place to gather. The park, part of the Design Your Own Park project led by David Sloan Wilson, distinguished professor emeritus of biological sciences at Binghamton University and president of the Binghamton Neighborhood Project, was a true collaboration. Local business owners purchased the lot and funded construction costs. The PricewaterhouseCoopers Scholars (PwC) from the Binghamton University School of Management raised over \$20,000 to purchase and install playground equipment, flowers and a mural. The city of Binghamton planted trees and provided ongoing maintenance to the park, and



Photo credit: Jonathan Cohen

Assemblywoman Donna Lupardo secured a \$100,000 New York State Community Capital grant, part of which funded the installation of lights in the park. In many ways, Walnut Street Park led to a new iteration of community development in NoMa.

AN INCLUSIVE NEIGHBORHOOD PLAN

Webster and others from Safe Streets next approached Binghamton University, asking for help in rebranding and organizing their growing cohort. George Homsy, associate professor of public administration, and Siobhan Hart, then assistant professor of anthropology, became involved, and the neighborhood officially became NoMa, not just "that area north of Main Street" that people avoided.

Homsy and Hart saw that the residents needed a neighborhood plan to help them get organized. Homsy, whose second career was in city and regional planning, took the lead.

"I was excited to go in there and say, 'Yes, we will do this, and we will commit to doing it for a long time,'" Homsy said. That was in 2015, and six years later, he is still very involved. He began the neighborhood plan process by holding open meetings at Walnut Street Park, hoping to get initial ideas and buy-in from other residents of the neighborhood, who were not involved in the original Safe Streets organization.

"When we started out with any kind of crime or safety issue," said Webster, "the road always led back to the people and social issues. We had to do more outreach - we had to involve people. One of our problems was we weren't a particularly diverse organization."

Homsy and his students interviewed an array of neighborhood residents during events in the park, including the Fall Fest, which has become a neighborhood institution that draws a large number of residents each year and is made possible in part by student volunteers from Binghamton University.

"We came up with a plan," said Homsy, "and one of the 10 or 12 things that came out of it was [the residents] wanted an indoor gathering place - they wanted a community center."

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NOMA COMMUNITY CENTER AT 85 WALNUT ST.

Because of the train tracks that constitute the northern border of the neighborhood, NoMa is effectively cut off from amenities like The Boys & Girls Club of Broome County, which is only about two blocks from Walnut Street Park but is basically inaccessible. To the east, the Chenango River makes access to amenities like the Broome County Public Library and the YWCA and YMCA difficult.

With support from the United Way, NoMa reached a deal with the Salvation Temple Church to rent a building on its campus known as the Mansion to house the new community center. The center got off to a great start, holding free breakfasts on Saturdays, arts and crafts workshops, after-school programs, Lego nights, movies and more. U.S. Census representatives came in to recruit Census workers. Utility companies explained their billing process, a tenants' rights organization gave advice and the Rural Health Network provided soap and quarters to families who had trouble affording laundromats.

"Then COVID hit, of course, and the whole thing came tumbling down," said Homsy.

OPERATING DURING A PANDEMIC

Just prior to COVID-19 hitting the area, NoMa received a Town Gown Advisory Board grant, funded by the city of Binghamton and Binghamton University, that provided a salary for a part-time community center coordinator who must also be a resident of the neighborhood.

Homsy and others identified Brandy Brown, who had started out attending the arts and crafts workshops and then ran them as a volunteer, as a great fit. It's been a difficult road for Brown, who started her coordinator role in March 2020, when public health precautions curtailed many activities.

There have been some successes, though. Ascension Lourdes is active at the community center, providing weekly virtual or social-distanced wellness, fitness and yoga classes. Binghamton Food Rescue distributes food in the parking lot every Saturday afternoon, and volunteers provide soup and sandwiches for residents.

Brown's greatest personal accomplishment is NoMa's Closet, a collection of clothing left behind by a previous tenant that she has organized and provides to neighborhood residents for free. She also organized a successful donation drive of

handmade scarves and hats to give away this winter and has plans for a pantry of personal hygiene items in the future.

Binghamton University students have also been active volunteers during the pandemic, holding virtual festivals for families, helping sort clothing for NoMa's Closet, writing letters to elderly residents during the holidays and more.

"The students have been like little fairies and angels," said Brown. "Every student who came to the community center to help out really helped, and not just by physically being there, but by being personally invested."

Homsy agrees that it's important for the students to really dig in and understand the systemic issues that face their neighbors.

"Students need to see something different," he said. "I want students who are interested in public service to understand that when they do public service, they don't necessarily do it for people like them. They do it for people who look different, people who talk differently. You can come in with resources from the city, the University, the state, the county, whatever. But you really have to hear what local people want."

Once the pandemic is under control, Brown has big plans for the community center.

"I want it to be a learning experience," she said. "I want it to grow. I want people to come in and get educated on finance, culture and being independent. I want it to be a place where people are nurtured, and they become better than they were before they came. I want to help people to build confidence in themselves."

For now, though, Brown is content with what she's been able to accomplish. "It's just good to have a safe place to go with people who actually care." That sense of caring - of community - is something the majority of the residents seem to agree with, despite their diverse backgrounds.

Webster, who has recently taken a more passive role in the organization, sees this as the motivation behind the last 30 years of work she's put into the neighborhood, and it accounts for the shift from the Safe Streets neighborhood watch to NoMa's neighborhood development.

"We had this idea that we would create community," Webster said, "but the truth of it is that there's already a community here. We just all have to find our place in it."

Apprenticeship Program at The Arc, Oneida-Lewis, Allows Employees to Earn While They Learn

By: Franca Armstrong, Associate Vice President of Workforce Development and Dean of the Rome Campus Mohawk Valley Community College

Dean Evans on why he chose to participate in The Arc, Oneida-Lewis apprenticeship program. - "I was drawn to this opportunity because I always say knowledge is something that can never be taken from you. I like that completing this program will open more doors for me at The Arc, and anything that helps me be better at my job is extremely valuable."

It can be a choice that many people are forced to make, pursue education or a career opportunity? At The Arc, Oneida-Lewis it's possible to do both, thanks to their New York State Department of Labor Registered Apprenticeship Program, aimed at developing Direct Support Professionals.

A Direct Support Professional (DSP) works directly with people who have a developmental disability, making a difference in their lives. They do this by teaching, assisting, facilitating, and building on a person's strengths in the following areas: meal planning and food preparation, shopping for groceries, clothing, and personal necessities; budgeting and bill payment; housekeeping and laundry; personal hygiene; recreation; socialization; health and safety; self-advocacy and more.

"The development of our apprenticeship program has been a collaborative effort between government, education, and industry partners," said Karen Korotzer, Chief Executive Officer of The Arc, Oneida-Lewis Chapter.

The apprenticeship program combines supervised on-the-job training at the organization and related classroom instruction through Mohawk Valley Community College.

"MVCC is pleased to be part of the solution for The Arc, Oneida-Lewis to fill the skills gap that many employers are experiencing in this economy," said Randy VanWagoner, President of MVCC. "We are always working toward building the skills of incumbent workers in our region and providing them with a skill set that will increase their ability to earn more. That's exactly what this apprenticeship program with The Arc will do."

The program will ease the transfer of knowledge from



mentor to apprentice. "This program uses a proven method of career-training built on strong partnerships between businesses, technical colleges, and the government. It truly is a win-win for both the apprentice and the employer," Karen Korotzer.

The Arc, Oneida-Lewis Apprenticeship Program is funded in part through grants from SUNY.

Apprentices have the advantage of learning hands-on from their mentor, and simultaneously through relative classroom instruction. The classes are credit bearing and will apply to a degree in Human Services. The apprentices gain knowledge and work toward an associate degree, which will make them even more marketable, with opportunities to climb the career ladder at The Arc.

The Arc, Oneida-Lewis Chapter is a human services organization that has been a leader in services for people with developmental disabilities since 1954. The agency was founded by a group of parents who envisioned a rich, full life for their children and family members with disabilities inclusive in the community.

Today, The Arc, Oneida-Lewis is one of many chapters of The Arc New York statewide organization. They provide a full spectrum of educational, vocational, employment, residential, family support, guardianship, respite, recreational rehabilitation, day habilitation, clinical, children, adult, and senior services for people with developmental disabilities and their families. The agency is staffed by over 700 professionals and serves over 1,400 people throughout Oneida and Lewis Counties.

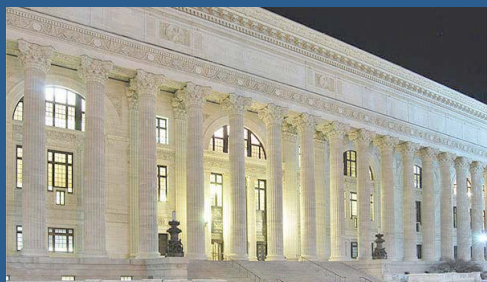


New York State Education Department Partners with SUNY Applied Learning

By: Steven Baldwin

Raising the knowledge, skill, and opportunity of all the people in New York is the mission of the New York State Education Department (NYSED), and we partner with SUNY to do just that. The NYSED/SUNY Student Internship Program is a competitive program that offers paid, part-time positions to students from participating SUNY institutions who have the drive to give back to education while enriching their own professional experience. NYSED is always seeking engaged, motivated, and ambitious students to join our organization through our Internship Program.

Our interns are SUNY students who are matriculated in undergraduate and graduate degree programs, from all majors and academic interests, with outstanding interpersonal, written, and verbal skills. Our wish is that they will make the most of this opportunity by advancing our Department's work and use the knowledge and skills they



New York State Education Department Building

acquire with us to make lasting impacts on their careers. Past interns have worked in our Office of Cultural Education, which includes the New York State Museum, Archives, Library, and Summer School for the Arts. We have also offered professional posts in our Communications Office and Office of Information Technology Services. Additionally, internship positions have also been filled in NYSED's Office of Education Policy, Office of Higher Education, and Office of the Professions.

NYSED strives to ensure that our interns enjoy an intellectually stimulating and professionally enriching experience. As an organization rooted in learning, we hope to learn as much from our interns as they do from us. Here is what SUNY University at Albany Campus Coordinator Stephanie Carson has to say about her students' experiences with our program: "These students have gained experience

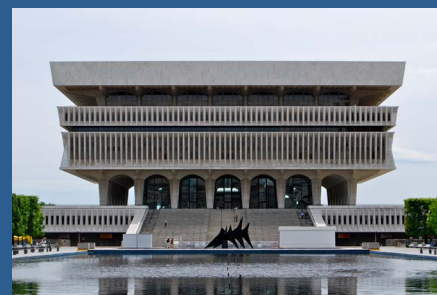


New York State Education Department Building

in many different offices throughout NYSED. As a result, the students have gained a deeper connection with the Albany community in which they live, work, and go to school."

Marlowe Cochran, NYSED's Chief Information Security Officer has loved having student interns on his team, as they play an important role in creating and executing new projects:

"As we begin to implement new technology, improve processes, and update policies and procedures, the interns were able to contribute to the ISO Office evolving and working towards our strategic goals. The best part has been the partnership with NYSED/SUNY Internship Program to provide the interns with an opportunity to learn new skills or sharpen the ones they have already acquired through their studies or previous work experiences."



New York State Cultural Education Center

Interns also work with underserved populations and communities in need. Michael Whitney, Senior Librarian in the State Library's Talking Book and Braille Library, says this about the Internship program:

"We've loved having the interns work with us and they have all made important contributions to our Library workflow by serving our visually and physically disabled patrons. Interns have primarily worked in our busy circulation unit, which has allowed them to learn how special libraries work and participate in many internal procedures."

If your students are interested in obtaining an exciting and valuable learning opportunity, please let them know about NYSED's internship program. We know they're up for the challenge!

To learn more about our NYSED/SUNY Internship Program, visit [our website](#) or email us at INTERNSHIPS@NYSED.GOV. For more information on becoming a participating institution, please contact Laura at AppliedLearning@suny.edu.

Note: This program is on hold through Summer 2021 due to budgetary constraints. The availability of funds is reevaluated each term and our website is updated accordingly. We look forward to relaunching this program as soon as possible.

Submitted by: Heather Childs

The goal of the NYS Department of Transportation partnership with SUNY is to turn hands-on training into full time careers - while earning credits toward graduation. NYSDOT is an essential agency, and our Fleet Division keeps the traveling public safe by ensuring vehicles and machinery

are ready to maintain the roads in the summer and clear the roads in the winter. Our partnership has engaged 15 students over the last few years, with one becoming a full-time employee..

Partnering Across Pedagogy, Disciplines, and Cultures at SUNY Cortland

By Hailie Addison, Institute for Civic Engagement Action Team Intern

In October of 2018, SUNY Cortland's Institute for Civic Engagement launched Cortland Applied Learning Practitioners (CALP), a community-of-practice professional development program for faculty who want to incorporate applied learning pedagogies into their teaching.

CALP has nurtured several partnerships between SUNY Cortland professors, students, and the greater Cortland community. One unique feature of this program is that community partners receive the same stipend as their faculty colleagues because community partners contribute their expertise to the design and running of the applied learning project. Two themes that connect many CALP projects are Students Teaching and International Cultures.

Some CALP projects are creating opportunities for SUNY Cortland students to educate people on campus and in the broader community about anti-racism. For example, students in Dr. Elizabeth Bittel's Methods of Social Research I course - and students in Dr. Kent Johnson's Human Evolution and Survival course - are working with teachers in the Cortland Enlarged City School District to develop and share antiracism information at SUNY Cortland and in the greater Cortland community.

Bittel's students will develop and use surveys and focus group interviews to poll SUNY Cortland freshmen about their perspectives on race. Johnson's students will use the survey and interview data to develop anti-racism messaging that will be distributed to the college's campus and to the Cortland Enlarged City School District.

Johnson explained how this project fits into the national situation: "The antiracism materials that students build will be specifically tailored to our college and Cortland community." Bittel echoed Johnson's comment, saying that "The year of 2020 has been really monumental for race relations in this country. We felt that it was the right time to be working to dispel these myths that are deeply culturally ingrained about what race is and how it operates in society."

Another major situation from 2020 is, of course, COVID-19. Dr. Laura Dunbar, a Professional Writing instructor at SUNY Cortland, and Dr. Roberta Schlehr, Chairperson of the Visual Communications Technology Department at Erie Community College, partnered to help college students share their experiences with COVID-19. Students from the two campuses were each other's community partners.

Dunbar's and Schlehr's students collaborated to make a multi-modal online book for exhibition across SUNY. That book is a documentary narrative about specific aspects of COVID-19 that students feel are most relevant to their lives. This project blends meaning found in the written word with the meaning developed through electronic communication. The partnership allows students at two different campuses to be put in the center of their own learning.

Just as this virus is a global concern, so is environmental conservation. Essential to this issue is the concept of regeneration, which can, in part, be achieved with composting. Dr. Szilvia Kadas' Graphic Design II students and Dr. Jeremy Jimenez's Foundations of Modern Education students are partnering with the city of Cortland's Environmental Advisory Committee (EAC) and with an expert at the Tompkins Center in Ithaca to learn about composting.

Kadas and Jimenez explain that the role of students in this multi-disciplinary collaboration is to teach each other principles of inclusion in student learning and principles of design as they create a digital and printed book on composting. The book will be field-tested with one or more schools in the Finger Lakes region.

This work helps the EAC in its community outreach efforts regarding composting and recycling. Those efforts can help EAC secure a Climate Smart Grant from New York State.

A different kind of environment is the teaching/learning environment. Students taking Dr. Gigi Peterson's 300-level Teaching Secondary Social Studies course and Dr. Jared

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McBrady's 300-level Teaching and Learning History course will help pilot a "HISSTory Support Network." These junior-year teacher candidates will offer academic and socio-emotional supports to fellow students of history. Students in two introductory level HIS classes will become a community of practice for McBrady's students

"This project squarely supports our mission statement of helping students 'grow as engaged citizens with a strong social conscience,'" said Peterson and McBrady in their CALP proposal. "Teacher candidates will promote others' well-being in ways that foster their own 'academic excellence' as future educators."

The theme of International Cultures is obvious for students in Dr. Alex Balas' The Making of the Modern World course as they partner with Interfaith Works of CNY to interview foreign-born people in the Cortland area. Students will create an aggregate needs-assessment for those folks in Cortland County, based on their blending of course-based knowledge of immigration policy and their interviews with Cortland-area immigrants.

Balas pointed to the importance of this kind of work, noting that, "as students interact with their immigrant partners, they'll develop an understanding of the role of immigration policies on culture shock and shifting culture."

One project combines the two themes. Dr. Amanda Tepfer and her colleagues in SUNY Cortland's Adapted Physical Education program, for example, realized that "many preservice teachers are not exposed to diverse populations before or during their student teaching placements," so she created an applied learning project that incorporated people from a variety of cultural backgrounds and from across ages that ran from young children to adults.

Her Lifespan Motor Development students created and implemented developmentally appropriate motor activities and lesson plans for use with children from different cultures. The students partnered with the Cortland/Homer Afterschool Motor Program, the YWCA, the SUNY Cortland Day Care Center, and the Franziska Racker Center.

Since the start of CALP in 2018, there have been 13 awards given to faculty (Faculty Fellows), as well as to students (Student Entrepreneurs) in 2019-2020, to create new or redesigned applied learning courses in Anthropology/Sociology, Childhood Education, English, Environmental Studies, Geography,

International Studies, Physical Education, and Women's, Gender, and Sexuality Studies. For more information on CALP, visit http://www2.cortland.edu/programs/civic-engagement/servicelearning/Cortland_Applied_Learning_Practitioners_CALP.dot email john.suarez@cortland.edu

"Green Day": An Education in Green Building Practices NCC Engineering and the American Society of Civil Engineers Partnership

By Nina Shah-Giannaris, Associate Professor Engineering/Physics/Technology, Nassau Community College and Douglas Das, American Society of Engineers Long Island President

Ten years ago, I started an event with the Engineering/Physics/Technology Department at Nassau Community College called "Green Day." I started the event the same year that I started teaching a new non-lab science course that I developed called "Green Building Practices." I felt that it was important for students to be able to learn from professionals in the field. This event is aimed at educating attendees in methods used in the design and construction industry to make projects more sustainable and healthier for the environment.

"Green Day" is a full day event consisting of five one-hour presentations and is held annually on the first Wednesday in March at Nassau Community College in Garden City, NY. This year due to COVID-19 it was held virtually. The American Society of Civil Engineers (ASCE) began partnering with the NCC Engineering Department after the first year and has



been a valuable partner and has helped this event grow each year. Professionals in the engineering and architectural industries can be found sitting alongside students from NCC or this year joining virtually via the Webinar platform. The ASCE Long Island President Doug Das was instrumental this year in helping this event to run using the Webinar platform.

Each year at "Green Day," participants attend seminars and

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visit vendor displays where they are able to learn about different sustainable design and construction methods and attain professional education credits in New York State. This event is attended by approximately 300

people each year with over 100 professional engineers. The event is successful at allowing the professionals and the NCC community of students and educators to simultaneously learn about sustainable design and construction methods, sustainable growth measures, green products, clean energy installations and clean energy initiatives such as offshore wind in New York State and energy conservation. The students have the extra benefit of making connections with the professionals and some can gain employment in the engineering industry after attending this event. The partnership between NCC and the ASCE has allowed this Applied Learning event to be successful in all the past years and hopefully in many more years to come.

“Green Day has become an amazing event that we at the ASCE look forward to every year. Our primary goals as a Society are to provide continuing education credits to our licensed engineers, to foster networking through a professional platform, and to inspire student and young engineers to one day fill our shoes as leaders in the infrastructure of our great nation. Those goals are all achieved through Green Day and every year we look forward to it. Especially now during this pandemic with a lot less face to face networking and interactions, having a platform for students to hear from successful engineers working on mega projects is vital for them to find inspiration. We are so proud of the Nassau Community College’s dedication to the concept of educating these students through not only theory but also incorporating the practical applications.”
 – Doug Das, ASCE Long Island President



Alfred State Partners with Wellsville Chamber of Commerce to Provide Valuable Internships

By: Jonathan Hilsher

Alfred State College’s commitment to advanced applied learning includes field placements with organizations throughout the region. These hands-on experiences enhance learning and equip students to be prepared for the workforce. Partnerships with local businesses, non-profit, and government entities are key to successful experiences.

One example is the Wellsville Area Chamber of Commerce (WACOC). This organization exists to support and promote the greater community with a vision to enhance the community, accentuate local commerce, maintain economic stability, and to make Wellsville a destination of choice.

Chambers are always seeking more effective ways to serve their members. WACOC and Alfred State students have benefited by a mutually beneficial internship initiative designed to place student interns in meaningful roles within the organization. Students from a mix of majors, including digital media and animation and business administration, have supported Chamber programs and provided services directly to members.

In recent years, interns have organized the Annual Golf Tournament & Clambake, provided leadership to Main Street Festival planning, directed the marketing presence for the Evening Under the Stars event, designed the newsletter, and managed the social media presence.

Alfred State Assistant Vice President for Student Affairs Spencer Peavey, who serves on the Wellsville Chamber Board, said, “The relationship we have established between the college and community is symbiotic. The

college increases its impact and relationship with the local community, connecting our students to a variety of small, large, and private or public experiences. The community taps into the skill and innovation of these young pre-professionals and connects them with small businesses and local startups that may not have the resources to hire a marketing firm, graphic designer, or IT professional. If these experiences lead to a full-time position after graduation, then the college/ Chamber relationship has added a skilled graduate to the community, and we’ve improved our community in a number of ways.”

While COVID-19 interrupted the program, this partnership has resulted in four internships over past several years including one starting this coming month.

Student interns through this program have been compensated through work-study funds utilized for work that improves the quality of life for community residents. SUNY Performance Improvement Fund monies have also been instrumental in supporting this initiative. Funding has allowed any student, regardless of socio-economic background, to gain critical workforce experience while earning wages.

The plan is to partner with more local Chambers and related organizations to support regional economic development initiatives and enhance student learning. The vision is that this initiative supports the county-wide economic development goal of retaining skilled students in the local workforce after graduation. Ultimately, all stakeholders benefit from the connections and learning generated through these invaluable field experiences.

Connecting with Students Through Academic and Industry Partnerships

Stony Brook University Career Center

By: Elizabeth Ann Moon, Stony Brook University Marketing and Digital Content Specialist, Career Center

The Stony Brook University Career Center has always used partnerships as a method of educating students and connecting them with industry professionals. These strong partnerships became even more important at the start of the pandemic in March 2020. Working with faculty and staff across campus, employer partners, and student led organizations allowed us to have a greater understanding and wider reach in facilitating applied learning in an adjusted format due to COVID-19. It was because of the partnerships that were already in place that made it possible for us to respond quickly to the many changes that occurred in a new virtual world.

Our relationship with our local, regional, and national employers allowed us to connect students to experiential opportunities despite the challenges of COVID-19. The [Stony Brook University Career Center Employer Partnership Council](#) includes employers from various industries who work closely and serve as mentors for several Career Center programs and events, including our Diversity Professional Leadership Network. In collaboration with these employers, we developed several initiatives to support students during this time. This past August we created a portal on our website to highlight remote and hybrid experiences for students to easily apply to through Handshake; the portal has had over 12,000 pageviews since its inception. We also launched a brand-new [Center for Remote Experiences and Experiential Learning](#) to support employers in creating remote opportunities for students. The center provides resources and consultation for building remote internship programs, conducting virtual interviews, and managing communication in a remote format to ensure a meaningful experience for Stony Brook students.

The Employer Relations team conducted several town halls at the start of the pandemic and throughout on topics related to how our institution was handling the public health crisis, [diversity related issues](#), and virtual recruitment. Maintaining these partnerships during challenging times made it possible for us to organize eight Virtual Job and Internship Fairs during the 2020-2021 academic year, with over 5,000 employer connections for students in the fall semester alone. This resulted in more experiential opportunities for students at Stony Brook and better ability for students to connect with potential employers.

Faculty and staff in all academic and administrative

departments on campus are essential applied learning partners. Members of the Career Center team maintain close relationships with faculty and staff to connect with students and share information about our resources, services, and events. We partner with faculty members to offer presentations in their classrooms on experiential opportunities, work closely with academic departments to connect them to our employer partners to create experiential projects in the classroom, provide tailored Career Center services to specific colleges, and provide Career Success Modules as a method of equipping faculty with the ability to share information with students on applied learning and other career related topics.

These partnerships have been very successful and allowed us to support students in several ways including providing specialized support for over 250 nursing students with the School of Nursing, tailored preparation for accounting students prior to the Accounting Job and Internship Fair with the College of Business, and programming created for students in the Women in Science and Engineering (WISE) program with the College of Engineering and Applied Sciences. Our Student Employment Specialist provides training and support for faculty and staff on student employment and the [GROW \(Guided Reflection on Work\)](#) program in order to ensure meaningful experiences for student employees. Currently over 200 supervisors have been training using the GROW program across over 60 departments from both the Division of Student Affairs and Academic Affairs.

Similar to our work with faculty and staff, our team has built strong connections with active student groups on campus to increase awareness of experiential learning opportunities and educate student members about how to be successful in acquiring an experience. Our staff worked with The Stony Brook Robotics Team (SBRT), Society of Women Engineers (SWE) and Women in Computer Science (WiCS) to organize employer recruiting events and panels on a variety of important topics such as Inspiring Women in STEM Academia. We also serve as advisors for many student organizations including Oxfam America, Leadership Student Association, Pre-Med Society and more. Student leaders who serve as executive board members for the clubs and organizations or in other leadership roles on campus act as champions of the Career Center by connecting our office and all that we offer to students that they work with consistently.

Farmingdale State College Applied Learning Partnership with Cornell Cooperative Extensive of Suffolk County

Submitted by: Rena Varghese, Executive Director of the FSC Nexus Center for Applied Learning & Career Development

At Farmingdale State College (FSC), the Nexus Center for Applied Learning & Career Development (Nexus Center), through its Social Science Research Institute (SSRI), has forged an applied learning partnership with Cornell Cooperative Extension (CCE) of Suffolk County. CCE staff is dedicated to making Suffolk County a desirable place to live and work. They help preserve the county's vast heritage, protect eco-systems, support families, and provide youth opportunities for community service and research-based education in science, technology, engineering and math (STEM).

Vanessa Pino Lockel, Executive Director of CCE-Suffolk, a long-time advocate for the region, welcomed the partnership with FSC. "Cornell Cooperative Extension of Suffolk County is so pleased to collaborate with Farmingdale State College on an initiative where students learn hands-on by working alongside our staff in all departments. Students are assigned projects in areas of Agriculture, Marine, 4-H Youth Development and Community Education, as well as in upper-level administrative management. This is an amazing learning experience and infusion of new thinking for the staff as well!"

The interdisciplinary partnership involves collaborating with faculty supervising students from various academic programs across multiple schools of the college: Business Management; Psychology; Visual Communications/Interaction Design (School of Business); and Science, Technology and Society (School of Arts & Sciences).

This spring 2021 semester, 18 students have been placed with CCE in a variety of projects, including remote work, such as the Animal Assisted Therapy, Sea Explorers Marine Camp, Disability Accessibility, Diversity in 4H programs, Human Resources, and Administrative Positions (with opportunities to work in areas like Public Relations, Social Media, Grant Writing, Event Planning, and Videography).

Students are either receiving internship credit or formally approved co-curricular applied learning credit, all satisfying FSC's Applied Learning Graduation Requirement.

SSRI Program Director, Eva Pearson, supported by colleagues in the Nexus Center, worked closely with CCE staff and faculty across each academic department to facilitate all student placements. She also serves as the supervisor of students in non-credit co-curricular placements. "The multitude of applied learning experiences with Cornell Cooperative Extension enables FSC students from across the academic spectrum to apply and expand

upon classroom knowledge while creating concrete solutions for the community. These experiences are invaluable to the next generation of thought leaders."

Student Daniel Murphy, '22, is applying what he has learned in the Business Management program to a placement in CCE's Human Resources department. "Professor Sue Moon connected me to this great opportunity with the Nexus Center SSRI Program. Now, not only am I gaining real-world experience in the career field I want to pursue, I've also been provided a pathway to post-graduation employment."

Dr. Moon emphasized the importance of industry and community partnerships for students and faculty. "These experiences allow students to contribute to organizations, like CCE, with missions promoting social well-being and economic vitality. Students also enrich their classroom learning with real-world work experiences, gaining career readiness as well as confidence. Furthermore, industry and community partnerships provide faculty with insights and ideas for applied learning and curriculum development, to better prepare SUNY students with knowledge, skills, and other characteristics that anticipate industry demands and serve the broader community."

In the Visual Communications/Interaction Design program, all 13 students from Professor Niyati Mehta's IxD 330 Design for Social Change class are applying the skills they have learned in Interaction Design to work collaboratively with CCE in identifying social needs and solving them through user-centered design.

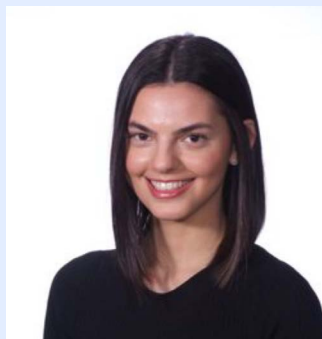
Professor Bill Steedle, Assistant Dean, School of Business and Acting Chair of Visual Communications, acknowledged the decades-long history of Farmingdale students in the Visual Communications program working with community partners using creativity and design as problem-solving tools. "The relatively new Interaction Design program continues that tradition by using the unique knowledge and skillsets students learn in this emerging field. The Applied Learning opportunities with community partners provide valuable experiences for the students and viable solutions for the clients."

In addition, all students participating in internships or applied learning activities are being funded for their work by the Nexus Center SSRI through dedicated social justice grants gifted by the Hagedorn Fund and administered by the Research Foundation for SUNY.

CLINICAL EDUCATION

SUNY Optometry Applied Clinical Education From Fourth Year Clinical Externships to Advanced Clinical Outcome Support

By: Thomas A. Wong, OD, FNAP, DIPL ABO, Associate Clinical Professor, Director of Clinical Externships & Director of New Technologies



The transition to increased autonomy and independence in patient care has always presented challenges and unique learning opportunities for fourth year Doctor of Optometry students at the SUNY College of Optometry. Last year the impact of the global COVID-19 pandemic greatly impacted the clinical education and professional journey of our SUNY Optometry students. This presented us with the opportunity to create virtual clinics to discuss clinical cases in depth, and to create Digital Distance Learning resources (lectures, peer-reviewed journal articles, evidence-based studies, webinars, etc.) to educate and prepare



students for real world optometric patient care. Topics in the Distance Learning resources include primary eye care, pediatrics including myopia control, cornea & contact lenses, anterior segment disease/cataract, glaucoma, retina, neuro-ophthalmology, low vision, head trauma, binocular vision/strabismus, systemic disease, and ophthalmic surgery/peri-operative management. SUNY Optometry Clinical Grand Rounds went virtual, and some of our partners at NYU Ophthalmology and Columbia University Ophthalmology allowed our optometry faculty, residents, and students to participate in their ophthalmology grand rounds and guest lecture series. These collaborations continue to provide us with additional clinical educational programs for our SUNY Optometry community. When our clinics returned to full time patient care in June, these additional resources have remained an integral part of our students' clinical education.

Modern optometric care has evolved with innovative new technologies that improve patient outcomes, e.g., automated visual fields, medical imaging, and optical coherence tomography (OCT) used in the diagnosis and management of many eye conditions especially glaucoma and retinal disease. With the help of our many clinical externship programs (hospitals, VA medical centers, etc.) we have started two new applied clinical learning programs at our externship sites:

1. Clinical Externship Case of the Month: Students submit interesting clinical cases encountered during their externship rotations. Students submit cases for consideration on Google Forms, and the winners present their cases interactively to our students, faculty and residents.
2. Advanced Clinical Outcome Support Case of the Month: Presented by Gentile Retina (A private vitreoretinal practice within New York Eye and Ear Infirmary of Mount Sinai) to interactively improve the clinical skills necessary to interpret and utilize medical imaging, ocular disease progression analysis, artificial intelligence, and other advances in modern eye care.

SUNYOPTOM'21 Clinical Externship Case of the Month for February 2021 was won by Ray Farmer SUNYOPTOM'21 Glaucoma Microcredential'21 a clinical extern at Downtown EyeCare in Brooklyn NY, and the Boston VA Medical Center for the presentation of a patient with bilateral subdural/subarachnoid hematomas and Terson's Syndrome. Ray Farmer published a blog article in the February edition of Primary Care Optometry News titled: [BLOG: How to use OCTA in glaucoma diagnosis, management.](#)

SUNYOPTOM'21 Clinical Externship Case of the Month for March 2021 was won by Daniela Perlstein SUNYOPTOM'21 a clinical extern at NY Ophthalmology and Metro Eye MD for the presentation of a patient with neovascular glaucoma. Daniella Perlstein published a newsletter in Ophthalmology Management titled: [Will Myopia Control Help Glaucoma Patients?](#)

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SUNY Optometry has required fourth year professional students to satisfactorily complete clinical externship rotations since the 1980s. The SUNY Optometry Clinical Externship Program currently requires that fourth year students complete four rotations:

1. An inhouse externship at SUNY Optometry's University Eye Center
2. One Ocular Disease Rotation Hospital/VAMC
3. One Family Practice Rotation Primary Eye Care/Contact Lens
4. One Specialty Rotation (Examples: Specialty Contact Lenses, Surgical Co-Management, Vision Therapy, Low Vision, Neuro)

The SUNY Optometry clinical externship program offers eighty-two rotations in every one of the five boroughs of New York City, Long Island, Albany, Buffalo, Cooperstown, New Jersey, twenty different states, and four countries. We maintain collaborations with NYC Health + Hospitals including

Bellevue and Woodhull Hospitals, Gouverneur Community Health Center, and East New York Diagnostic Center, Mount Sinai, and NYU Ophthalmology. SUNY Optometry also maintains nineteen residency programs offering advanced competency training. Our clinical externship programs, and residencies allow our students and graduates opportunities to provide modern optometric care to the diverse communities of both New York City and NY state.

CONCLUSION

Advances in technology including medical imaging have created advanced clinical outcome support to improve the diagnosis and management of ocular disease and other conditions improving patient outcomes. The use of HIPAA compliant communication vehicles has allowed optometry students the opportunity to analyze and discuss clinical cases. Meaningful interaction offers SUNY Optometry students new methods of applied clinical learning. It is hoped that friendly competition will increase student enthusiasm for learning by creating a library of interesting paradigmatic clinical cases.

APPLIED LEARNING IN PRACTICE

Examples of Applied Learning as Practiced by the SUNY Schenectady's CSTEP+LSAMP Community Applying Scientific Research Projects to Better the Local Environment and Community Through Education

By: Elizabeth M Rivera, Hafsa Zorqane, Richard R Simons PhD, and Lorena B Harris PhD

Vale Park and Cemetery (VPaC) is a recreational site located at the core of Schenectady, NY. Vale Park and Cemetery host locals who enjoy the playgrounds and many other recreational activities such as fishing, hiking, swimming, picnicking, biking, birding, and walking around. The Union College, MiSci (Museum of Innovation and Science) and SUNY Schenectady County Community College utilize the cemetery and park for historical, research and academic purposes. The geographic location of the Vale Park is defined by DMS 42° 48' 26" N, 73° 55' 45" W and Geo URI 42.807222, -73.929167. The Vale Park is a 100 Acres (40 ha) land, with (two trails, including the main Greenway trail), two ponds (Tranquility and Schenectada) that are connected by the Cowhorn creek that flows throughout the park. Each pond has two drainage pipes from the Schenectady County floodwater runoff. Four drainage pipes flow into Cowhorn Creek. The ponds drain into underground systems that enter the Mohawk River near the SUNY Schenectady Science building.

Vale Park as an experimental learning opportunity has been the niche for the SUNY Schenectady's CSTEP program (faculty and students) to hold a series of umbrella research projects. Applying the scientific method, the team began surveying the wetlands and woods for vertebrate organisms. Input of different students' curiosities diverged into a series of studies, such as, the topographical analysis, development of a field guide, which includes fungi, flora and fauna, and a micro plastic study. Inquiry into a lack of salamanders inspired the finding of an invasive species *Amyntas agrestis* (aka the crazy worm). The presence of the *Amyntas* worm introduced other plausible inquiries concerning the effects on herpetological populations, soil and water ecology within the VPaC boundaries.

Decomposers such as *Lumbricus terrestris* (earthworm) are important to soil and water ecosystems because they bring humus to the deeper layers of soil where roots retrieve these

nutrients along with water, completing the nutrient cycle (Ziemba et al, 2015). The effect of leaving the decomposed organic matter on the soil surface in large, granulated mounds and the removal of the fallen leaves causes loss of amphibian's habitats and erodible soil. One of the two complementary studies address the effects on populations of amphibians and their predators. Due to snow melt, flooding and increased water movement, soil nutrients are washed into streams and ponds where the nutrients remain as part of the sediments; and dissolved in water. For the life of that water shed the nutrients remain deposited in the sediments, or until microorganisms are able to process them, which allow nutrient to reenter the cycle.



SUNY SCCC Vale Park LSAMP research team

Water samples were taken from Cowhorn Creek and the ponds to understand the chemistry of the aquatic ecology in the park. Chemical tests were performed to determine hardness and pH, and to test for the presence of sulfides, iron, phosphates, nitrates and chlorine. The pH and levels of various ions were high due to multiple sources of pollutants contributing to the water composition, creating a toxic environment supporting the life of opportunistic pathogens.

The study of microbes found in different VPaC water sources allowed for the identification of a group of opportunistic pathogens from the VPaC (NCBI published). This process

continued on next page



SUNY SCCC LSAMP community outreach and mentoring opportunity. CSTEP college students running lab for Rise High Inc. students

began the SUNY Schenectady Organisms Universal Library (SOUL), which aims to serve and grow as a repository. The organisms kept in SOUL will form an accessible record of the population structure of the aquatic community over time. To identify the genus of these microorganisms, students learned best practices through sampling water from five water sources in VPaC, used multiple techniques to determine if microbes were gram positive or gram negative, among ten other different tests performed. In addition, SUNY Schenectady LSAMP students learned and practiced molecular biology techniques to isolate, amplify and sequence the microbial DNA. The obtained sequences were submitted in the National Center of Bioinformatics (NCBI) repository and species identification was completed for at least 70% of the samples isolated.

REFERENCES:

Ziemba, Julie, L; Cameron, Alex C., Peterson, Kim., Hickerson, Carri-Ann, M., Anthony, Carl, D., (2015). Invasive Asian earthworms of the genus *Amyntas* alter microhabitat use by terrestrial salamanders. Department of Biology, John Carrol University, Canadian Journal of Zoology, Iss 93: pg. 805-811.

Gülşen Altuğ*, Mine Çardak, Pelin Saliha Çiftçi Türetken, Samet Kalkan, Sevan Gürün (2020) Antibiotic and Heavy Metal Resistant Bacteria Isolated from Aegean Sea Water and Sediment in Güllük Bay, Turkey Johnson Matthey Technol. Rev., 64, (4), 507doi:/10.1595/205651320x15953337767424

Among the microbes identified, i.e: *Brevundimonas diminuta*, *Citrobacter freundii*, *Klebsiella oxytoca*, *Stenotrophomonas maltophilia* are gram negative and antibacterial resistant; and *Bacillus pumilus* is gram positive, also reported in the Aegean Sea and perhaps linked to the pollutants and heavy metals in the environment (Altug, et al 2020). Exposure to these microbes can cause infections that are difficult to treat. Therefore, Zorqane and Rivera presented this information to the Vale Park Task Force, which proposed signage to restrict fishing and swimming in these waters.

The SUNY SCCC CSTEP community hopes to use research geared scientific projects to build a better environment for the local community by creating awareness of VPaC and its ecosystem by being a part of it, learning from it, and making efforts to preserve it. CSTEP and LSAMP Students presented their research in different conferences both national to international events in a poster and oral presentations formats. Presentation of the findings have been made from state conferences and to the Vale Park Task Force. SUNY Schenectady students engaged in educational outreach through volunteering at MiSci Science Festivals, supporting educational tours, supporting educators in the Schenectady and NY State. In addition, Dr. Harris and Dr. Simons presented their findings to New York State educators in the STEM field. This model has been used as a case study to introduce the scientific method and STEAM methodology to the after-school professionals and educators that lead programs to empower the community and educate their youngsters through learning about their close-to-home parks and environment.

30 DAYS OF GIVING SUBMISSION

College Seminar through Service Learning

Submitted by: Danielle DiMauro; Suffolk Community College Professor of History & College Seminar

How do you teach a hands-on course virtually during a pandemic? This is a question that Professor Danielle DiMauro-Brooks of Suffolk County Community College raised with students in the new course, College Seminar Through Service Learning at the Michael J. Grant Campus. The course was designed to introduce students to the concept of learning through service to others and reflects a growing trend in higher education. Service-learning increases student "EQ" or emotional intelligence, which is linked to success in all careers. However, due to COVID-19 the course was reimagined in the new virtual world. The students enrolled in this course decided to launch an educational and awareness campaign on topics such as animal abuse, environmental concerns, domestic violence, suicide prevention, hunger, mental health and censorship.

Throughout the semester, students have organized virtual walks for their service projects, collected donations, created e-cards for the college community educating their peers about their topic and have created various art projects that illustrate their project including a Virtual Clothesline Project and a Tied in Kindness Art Project. Over 200 powerful T-Shirts were created virtually, and the work will be displayed at the Victims Information Bureau of Suffolk Virtual Art Show on November 19. This allowed students to create visual displays to raise awareness about the reality of violence in our society as part of their campaign. In addition to the Virtual Clothesline Project, students tied dyed masks for the residents at the Pilgrim Mental Health Facility. At the conclusion of this course students hosted a celebration of diversity event where they created a virtual multicultural tree and participants shared items representative of their culture.

GRANT OPPORTUNITIES



MORE INFO

Charles Koch Foundation

Information and submission link can be found at:

<https://www.charleskochfoundation.org/our-approach-to-partnership/general-proposal/>

MORE INFO

The Teagle Foundation

Information on grant options and submission process outline can be found at:

<https://www.teaglefoundation.org/Home>

CONFERENCES AND WEBINAR SERIES



MORE INFO

Student Success Summit

The Summit took place on April 22-23, and a number of proposals centered around equity in higher education. Advising, Student Success, and Applied Learning will come together as one to support equity throughout the SUNY system.

MORE INFO

NACE Conference + Expo

This year's NACE Conference + Expo will bring strategies and learning experiences on student engagement, the ability to formulate networks between employers and university staff, and marketplace solutions. Registration information will be available soon on the NACE Conference + Expo website along with the sponsors and exhibits. The conference is planned for June 7-11, 2021 on a virtual platform.

MORE INFO

Center for Research on College-Workforce Transitions Webinar Series

Over the past several months, CCWT has conducted several webinars centered around higher education and workforce development at universities across the country. These webinars focus on program adaption to the struggles that have arisen from the pandemic along with discussing social issues and how university personnel are approaching them.

MORE INFO

2021 Global Internship Conference

Taking place June 14-18, 2021, this year's Global Internship Conference will be held in a remote setting. Encouraging the submissions of proposals, the conference is aimed at the discussion of experiential education and workplace alignment with academic success.

MORE INFO

2021 Assessment Institute

Hosted by IUPUI, this year's 2021 Assessment Institute will be held virtually from October 24-27, 2021. This year's session will be focused on the following topics: community engagement, diversity, equity, and inclusion, faculty development, global learning, graduate/graduate professional education, high-impact practices in the states, learning improvement, STEM education, student affairs programs and services, and student partnerships and engagement.

IN MEMORY OF REGINA LETTIERI

Submitted by: Nathan Wallace, SUNY Erie Applied Learning and Global Engagement Director

Regina Lettieri, Project Director for Service Learning at SUNY Erie Community College, passed away unexpectedly on Sunday, March 21, 2021. Regina's passion for service-learning, civic engagement, community building, and experiential learning was evident in the many collaborative projects that she completed. Students and faculty from across all three SUNY Erie campuses had the opportunity to engage in service projects that brought vitality to academic curriculum while improving the Western New York Community. As the planner and facilitator of SUNY Erie's Constitution Day event, Regina provided an avenue for recent immigrants to express their thoughts about the U.S. Constitution. She was also an active member of the Western New York Service Learning Coalition, contributing her expertise to advance service across the region. Regina put her whole self into everything that she did and every conversation that she had. She will be greatly missed.



Next Issue

For our next issue, we are looking for stories that showcase the creative ways applied learning is being incorporated into the liberal arts. We also, of course, welcome submissions on any other applied learning topic as well.

If you have something to submit, please send your submission to appliedlearning@suny.edu by August 1, 2021.

