

## AACP REPORT

### School Poster Abstracts Presented at the 122nd Virtual Annual Meeting of the American Association of Colleges of Pharmacy, July 19-22, 2021

#### **A College of Pharmacy's Efforts to Deliver the Curriculum During the COVID-19 Pandemic**

Muhammad Habib, *Howard University*, Monika Daftary, *Howard University*, Jamila Jorden, *Howard University*, Indiran Pather, *Howard University*, Amber Perrier, *Howard University*, Estela Lajthia, *Howard University*, Jesse Runakitwattanukul, *Howard University*, Toyin Tofade, *Howard University*.

**Objective:** Due to the COVID-19 pandemic, a shift to virtual teaching was needed. This abstract provides information on our College's multi-pronged efforts to reduce any gaps in teaching and learning. **Methods:** In the didactic realm, there was a quick move to creation of virtual OSCEs, simulations, and pre-lab sessions supplemented with virtual reality videos. Purchases of a EHR system, Zoom platform, upgrading to Blackboard Collaborate and artificial intelligence-based software for proctoring were made. Laboratory "kits" and Virtual OSCE exercises via zoom were created. Selected Advanced Pharmacy Practice Experiences (APPEs) shifted to virtual learning that included telemedicine and remote monitoring of patients. Course grades were reviewed with historic data. Students were also surveyed. Students performances were evaluated before and during the pandemic for selected didactic, skill-based labs and experiential courses. **Results:** The ratings of APPE experiences were comparable between face to face vs virtual settings: 96.3% vs 94.6% for student evaluations of preceptors, 92.9% vs 90.4% for student evaluation of sites and 89.8% vs 95.9% for preceptor evaluation of students respectively. Implementation of EHRgo and the purchase of an electronic healthcare system further strengthened learning. Virtual testing environment did not impact student performance on didactic assessments substantively. **Conclusions:** The college has learned that the delivery of the curriculum by online instruction can be effective so long as we build in time for the end users to utilize any software system confidently. The hybrid model for experiential was effective and did not reveal gaps. Continued students' engagement and feedback is paramount to ensure the learning process is fruitful. Budgeting for costs of delivering a non-traditional curriculum hybrid must be addressed as this may be a future trend for the pharmacy academy.

#### **A Hybrid Teaching Model in the Second Professional Year During a Pandemic**

Nicole Bohm, *Medical University of South Carolina*, Joli D. Fermo, *Medical University of South Carolina*, Phillip D. Hall, *Medical University of South Carolina*.

**Objective:** To describe practices implemented to adapt to a hybrid of virtual and in-person teaching in the second professional year in an effort to create an effective and engaging learning environment for one college during a pandemic. Secondly, course evaluations will be assessed. **Methods:** Review of course syllabi, learning management system classrooms, exam content, and selected lectures to describe testing methodology, classroom organization, and laboratory and didactic content delivery during Fall 2020. **Results:** Academic practice changes were identified in all areas reviewed. For testing, unmonitored remote testing using open note/book exams were used in most situations, coordinators placed an increased emphasis on application questions, and faculty increased use of questions requiring short answer or fill in the blank. For teaching, a combination of virtual synchronous and asynchronous instruction was used, condensed in-person lectures were combined with pre-recorded videos for laboratory activities, and additional interactive tools were employed including classroom chat, new polling technologies, and shared whiteboards. Classroom management was modernized to include increased structure in the learning management system classroom with consistent alignment across courses and bolstering classroom forums with asynchronous chat on a web-based platform. A review of course evaluations is in progress. **Conclusions:** Faculty rapidly adapted to the use of predominantly virtual classrooms and remote testing. Long-term evaluation of board exam pass rates and student satisfaction will be necessary.

#### **A Multifaceted Approach to Assisting the Community with Vaccination Efforts During a Pandemic**

Katherine M. Tromp, *Northeast Ohio Medical University*, Lukas Everly, *Northeast Ohio Medical University*, Richard Kasmer, *Northeast Ohio Medical University*, Jaclyn Boyle, *Northeast Ohio Medical University*, Mate Soric, *Northeast*

Ohio Medical University, Seth Brownlee, Northeast Ohio Medical University.

**Objective:** To review the numerous ways the NEOMED College of Pharmacy aided the surrounding community with COVID-19 vaccination efforts. **Methods:** The NEOMED College of Pharmacy provided support to ongoing vaccination efforts in the local community through a variety of methods. These methods can be grouped into 5 major areas: 1) supply donations, 2) community education, 3) curricular and co-curricular adaptation, 4) assistance at local and mass vaccination events, and 5) vaccine administration on campus. **Results:** Overall, faculty and students at NEOMED contributed a large number of hours to assisting in the efforts related to COVID-19 vaccination. To date, students and faculty have prepared and administered COVID-19 vaccines at community pharmacies, health centers, and government-run mass vaccination sites. Faculty-driven COVID-19 vaccination education reached an audience of more than 200 local pharmacists and technicians. The Rootstown Community Pharmacy on the NEOMED campus has provided COVID-19 vaccines to 200 individuals; any future allocations of the vaccine will be administered on campus. **Conclusions:** The importance of the pharmacist role has been highlighted during the COVID-19 pandemic. Pharmacists and student pharmacists have been active in assisting in this public health crisis. The NEOMED College of Pharmacy has been actively involved in vaccinating the community and will continue with all of the aforementioned efforts.

### **A School of Pharmacy-led Interdisciplinary Mass COVID-19 Vaccination Program for a Large Urban City**

Richard H. Dang, *University of Southern California*, Carla Blieden, *University of Southern California*, Vassilios Pappadopoulos, *University of Southern California*, Steven Chen, *University of Southern California*, Raffi Svadjian, *University of Southern California*, Kari L. Franson, *University of Southern California*.

**Objective:** To rapidly scale-up COVID-19 vaccinations for City of Los Angeles (LA) in partnership with city leaders, public health, fire department, emergency workers, and interprofessional healthcare students. **Methods:** USC School of Pharmacy (SOP) collaborated with multiple stakeholders (City of LA, LA County, LAFD, Carbon Health, Curative, CORE and community organizers), to strategically plan mass vaccinations. SOP launched a COVID-19 vaccination site in Lincoln Heights (LH) drawing from experience with mass influenza vaccinations. Through rapid cycle process improvement, the program

was scaled up and served as a model for other SOP assisted sites (Dodgers Stadium (DS) and USC Figueroa (UF)), with more pending. Several local SOPs, as well as PA, NP, medical and dental students are now participating. Workflow involves dose preparation, registration, clinician consultation, vaccination, observation, then check-out. Primary roles are dose preparation at DS and UF, vaccination at LH, and USC provides clinician consultation and student training at all locations. **Results:** While workflow remained consistent, almost daily restructuring of the physical space allowed the number of vaccinations at LH to increase from 650 daily doses to over 2,400. At DS, SOP was instrumental in increasing the doses available from 6,800 to over 12,000 without affecting wait times. To date, LH has provided 10%, DS 47% and USC 3% of the City's total 705,633 vaccinations administered. Throughout this expansion of vaccinations, USC SOP has offered consultations, process sharing, and immunization training for pharmacists and technicians. **Conclusions:** As vaccination eligibility expands, services offered by USC SOP continue to scale up at current sites and several additional locations, in addition to training for community pharmacies.

### **A Smooth Transition to Online Learning and Novel Approach to Experiential Challenges during COVID-19**

Erin L. St. Onge, *University of Florida*, Karen Whalen, *University of Florida*, Shauna Buring, *University of Florida*.

**Objective:** To describe the ease of transition to online learning and a novel approach to fulfilling experiential requirements during the pandemic. **Methods:** University of Florida College of Pharmacy (UFCOP) was well prepared to pivot to online learning during the pandemic, employing our previous use of the flipped classroom and technology for delivering online didactic coursework across three campuses. However, experiential learning posed a challenge, as clinical sites cancelled rotations to prioritize patient care and prevent further spread of COVID. Due to the need for cancellation of the first APPE, UFCOP developed an innovative, six-week, six-credit hour course to keep students on track for graduation and meet degree requirements. The virtual course was designed to reinforce clinical skills and provide professional development to ensure readiness to enter the workforce or post-graduate training upon graduation. Course activities included verbal defense of clinical recommendations, documentation of patient care, self-care consultations, preceptor dialogue, and topic discussions. Professional development activities included refinement of CV and letter of intent, exploration of innovative career paths, and interview skills. Students provided feedback on the course via an online Qualtrics survey. **Results:** Students

reported an increased sense of individual accountability and increased confidence in entering APPEs, citing verbal defense and reinforcement of disease states as valuable elements. The focus on individual accountability also aided in identifying students in need of additional coaching and support on early APPEs. **Conclusions:** Unique solutions during the pandemic provided valuable information to guide curricular change. UFCOP will incorporate many of the above elements within the curriculum, such as verbal defense within active learning sessions, role-play for self-care scenarios, and reinforcement of common disease states multiple times throughout the curriculum.

### **“Tip of the Needle”: College Leads the Way in Multipronged COVID Response in East Texas**

Frank Yu, *The University of Texas at Tyler*, Shannon Rice, *The University of Texas at Tyler*, Justin Wilder, *The University of Texas at Tyler*, Elizabeth Yett, *The University of Texas at Tyler*, Kelvin Kenyuru, *Advanta Analytical Laboratories*, Kendra Ray, *The University of Texas at Tyler*.

**Objective:** To describe the involvement of students and faculty of The University of Texas at Tyler Ben and Maytee Fisch College of Pharmacy (FCOP) in public health outreach and patient care efforts during the COVID-19 pandemic. **Methods:** The FCOP began COVID-19 relief efforts early in the pandemic. Three days after the national emergency declared, the FCOP worked with the North East Texas Public Health Department (NET Health) to develop the region's first COVID-19 call center. This center would become an elective, interdisciplinary public health advanced pharmacy practice experience with students' roles including answering public and healthcare provider questions about COVID-19 testing, contact tracing, and rotating through community pharmacies in need due to employee shortage and increased demand for pharmacy services. Identifying the urgent necessity of preceptors to support the education of displaced students, the FCOP, through the Texas Consortium of Experiential Programs, requested the State Board of Pharmacy to waive preceptor license requirements, which was subsequently enacted through emergency order. The FCOP has continuously adapted its efforts according to the changing needs of the community. Through collaborations with Brookshire Grocery Company, NET Health, and UT Health, students were participating in mass testing and vaccination clinics by September 2020 and December 2020 respectively. **Results:** Since March 2020 through student organizations, IPPE "Health and Wellness" hours, and APPE elective, FCOP students have dedicated over 4,000 hours to COVID-19 relief efforts. **Conclusions:** By leveraging its relationship with community stakeholders FCOP has demonstrated its ability to

respond swiftly to the evolving needs of the community during a pandemic.

### **Addressing Health Disparities in Philadelphia During the COVID-19 Pandemic: A Multipronged Approach**

Margaret A. Miklich, *Temple University*, Lisa Becker, *Temple University*, Lawrence Carey, *Temple University*, Ina Lee Calligaro, *Temple University*.

**Objective:** COVID-19 has disproportionately affected poorer and marginalized populations across Philadelphia and nationwide. Neighborhoods surrounding Temple University School of Pharmacy (TUSP) and Temple University (TU) are among the poorest in the city. Data show that Black and Hispanic Philadelphians are more likely to become infected, be hospitalized, or die from COVID-19, yet current COVID-19 vaccination rates are about half that of white and Asian Philadelphians. **Methods:** The faculty, staff, and students at TUSP engaged in multiple initiatives to address health disparities during the COVID-19 pandemic. To address the anticipated strain on local safety-net hospitals, a TUSP faculty member served on the pharmacy leadership team for the city-run COVID-19 Surge Facility (CSF) which was designed to care for patients recovering from COVID-19 after inpatient stays. The leadership team was responsible for meeting regulatory requirements, procuring medications, establishing a drug formulary, and defining workflow. **Results:** As a result, the CSF was prepared to provide pharmacy services for the 152-bed field hospital. To address the nationwide shortage of hand sanitizer, TUSP's Current Good Manufacturing Practices (CGMP) facility began to compound it onsite. Sixty gallons of hand sanitizer were donated to a local homeless shelter and over 500 gallons were donated to local safety-net hospitals. **Conclusions:** To address disparities in COVID-19 vaccine administration rates, TUSP trained students and faculty in immunization delivery and are establishing interdisciplinary vaccination clinics in underserved areas. TUSP is collaborating with TU's College of Public Health to administer vaccines to residents of the Philadelphia Housing Authority and is working alongside TU's Office of Emergency Management to immunize neighboring communities via a Point of Dispensing (POD) clinic.

### **Anchoring the State's Response: University of Rhode Island College of Pharmacy Vaccination Efforts**

Brett Feret, *The University of Rhode Island*, Matthew Lacroix, *The University of Rhode Island*, Katherine Orr, *The University of Rhode Island*.

**Objective:** To describe College efforts in contributing to COVID-19 vaccinations across the state. **Methods:** The University of Rhode Island (URI) College of Pharmacy collaborated with multiple stakeholders for the statewide vaccination response. A descriptive analysis of efforts was undertaken. **Results:** URI faculty, staff and students have participated in various areas of the response during the COVID-19 pandemic. First, faculty with infectious disease expertise were appointed by the governor to the statewide COVID-19 Vaccination Task Force, where policy and clinical decisions were made on the vaccine roll-out in Rhode Island. Others assisted with the logistical and operational roll out of municipal and regional vaccination clinics in conjunction with the Rhode Island Department of Department of Health (RIDOH). Students and faculty have been engaged with various partners providing pharmacy support and vaccinations for eligible patients. These partners include our local health-systems, independent community pharmacies, municipal and regional points of dispensing (PODS), and mobile vaccination teams through local disaster management organizations. Multiple students have been involved with the chain pharmacy vaccination implementation in the long-term care facilities, as well as the pharmacies themselves. Lastly, the College has also been active in the training of additional pharmacists and technicians to administer vaccinations since the start of the pandemic, including 128 student pharmacists, 72 pharmacists, and 57 technicians. **Conclusions:** The vision statement of the URI College of Pharmacy states Excellence Through leadership. This has been put into practice through many different roles and partnerships during the COVID-19 vaccine response in our state.

### **Badgers in Action! One School's Approach to Address Increased Need for Immunizers**

Karen J. Kopacek, *University of Wisconsin-Madison*, Mary S. Hayney, *University of Wisconsin-Madison*, Nikki M. Batterman, *University of Wisconsin-Madison*, Margaret Hoernke, *University of Wisconsin-Madison*.

**Objective:** In response to the pandemic, the University of Wisconsin-Madison School of Pharmacy (SOP) converted in-person courses to virtual and shuttered all student-led community outreach programs in March 2020. As part of our response we sought to maximize the number of strategies that PharmD students and Pharmacy Practice faculty could assist with vaccinating the people of Wisconsin. **Methods:** To increase the number of immunizers, the required immunization course was moved to the beginning of the spring 2021 semester for second-year students and offered to interested first-year students. Third-year students who completed the course in spring 2020 were offered

practice labs to review appropriate technique. The student co-chairs of Operation Immunization agreed to assist with volunteer recruitment and clinic assignments. All interested pharmacies, health departments, and health-system organizations worked with these leaders to schedule the appropriate number of volunteers. Students and faculty testified in support for changes in Wisconsin state law to allow for all PharmD students to immunize after certification. The SOP marketing and communications team provided stories to news organizations which highlighted student immunizers and raised interest in utilizing pharmacy student volunteers. **Results:** In anticipation of COVID-19 vaccine availability through emergency use authorization from the Food and Drug Administration, SOP faculty and students quickly responded to the need for increased immunizers by adjusting the curriculum, advocating for legislative change to state law, and mobilizing student volunteers to participate in vaccination clinics. Final results are not yet available to report as vaccination efforts continue through the spring semester and likely into the summer. **Conclusions:** Flexibility, political advocacy, and student leadership increased the number of student immunizers available to support vaccination efforts in Wisconsin.

### **Beyond the Script: A Commonwealth COVID-19 Vaccine Response**

Brooke Hudspeth, *University of Kentucky College of Pharmacy*, Tera McIntosh, *University of Kentucky College of Pharmacy*, Adrienne Matson, *University of Kentucky College of Pharmacy*, R. Kip Guy, *University of Kentucky College of Pharmacy*.

**Objective:** The University of Kentucky College of Pharmacy (UKCOP) aspires to elevate health for individuals throughout the Commonwealth of Kentucky, including populations with limited access to care. **Methods:** Beginning in 1998, the UKCOP incorporated a robust immunization training program in the required curriculum for student pharmacists; thus, Kentucky pharmacists have played a significant role in vaccinating their communities for over 20 years. Very early in the COVID-19 response planning in Kentucky, the UKCOP was called upon to support COVID-19 vaccine efforts throughout the state. Pharmacist, student pharmacist and non-clinical support was requested by the Kentucky Commission of Public Health, corporate and independent community pharmacies, health systems, and our own University for assistance with their community mass clinic site and mobile outreach events to underserved populations. Given the numerous requests, faculty at UKCOP identified a need to streamline requests, communications, and efforts to maximize our ability to provide support. We developed a COVID-19 Vaccine Taskforce to

determine how to best manage communications and reach individuals interested in providing support for vaccine opportunities. The taskforce distributed a survey to our UKCOP community, clinical and nonclinical, including professional and graduate students, clinical and research faculty, and staff to assess current involvement in COVID-19 vaccine activities and interest and capacity to serve in future support opportunities. We created a “Vaccine Reserve Corps” (VRC) pool of volunteers and developed a Canvas shell to streamline communications and coordinate opportunities from entities across the Commonwealth to the VRC. **Results:** To date, 381 individuals from the UKCOP have registered with our VRC. A survey analysis of engagement in COVID-19 efforts will be utilized to assess the reach and impact of the VRC.

### **Big Shots! The Positive Frontline Impact of Student Pharmacists on COVID-19 Immunizations**

James Nash, *Sullivan University*, Kimberly K. Daugherty, *Sullivan University*, Dale English, *Sullivan University*, Amanda Jett, *Sullivan University*, Daniel R. Malcom, *Sullivan University*, Arthur Cox, *Sullivan University*, Abbey Hardy, *Sullivan University College of Pharmacy and Health Sciences*, Misty Stutz, *Sullivan University*.

**Objective:** To describe Sullivan University College of Pharmacy & Health Sciences engagement in vaccine initiatives during the COVID-19 pandemic. **Methods:** Collaborating with several partnering agencies and organizations, student pharmacists and faculty have actively been on the frontline with vaccination efforts. First, a primary point person was appointed by the dean to organize, communicate and lead COVID-19 immunization efforts to work with both internal and external constituents. The offices of student affairs and experiential education collaborated and ensured students and faculty were able to volunteer, while continuing academic progress in both didactic and experiential coursework. Co-curricular hours were able to be obtained and all volunteers were trained on COVID-19 vaccines utilizing the TRAIN Learning Network, which provides quality training opportunities for professionals who protect and improve the public’s health. The College has also been involved in training pharmacists and technicians in Kentucky to give COVID vaccinations. **Results:** The college has trained over 60 registered local pharmacists and over 100 pharmacy technicians to provide COVID vaccines. The college was also involved in helping to change the pharmacy regulations in KY to allow technicians to provide immunizations. As of March 15, 2021 more than 35 students have participated in more than 70 shifts at multiple COVID vaccine clinics and helped to make one of the small vaccine sites in Indiana the 4th largest provider of vaccinations in

Indiana. **Conclusions:** The College has been very active in both training and providing vaccines.

### **Building Community and Connection to Address Student Well-Being**

Jolene R. Bostwick, *University of Michigan College of Pharmacy*, Mark Nelson, *University of Michigan*, Burgunda Sweet, *University of Michigan*, Bruce Mueller, *University of Michigan*.

**Objective:** An intentional, multi-pronged approach to build community and connection with first-year pharmacy students can effectively create a welcoming and supportive environment in a hybrid learning situation. **Methods:** In the summer of 2020, students, faculty, and staff collaborated on various initiatives centering on engaging our incoming first-year pharmacy students. The emphasis was on building connection and community with a focus on well-being. Interventions include: (1) individual meetings with a dean in student services twice a semester for well-being check-ins, (2) enrollment in a “Well-being for Professional Success” elective, (3) mental health first aid training supported by the college, (4) a mental wellness week hosted by our student organizations, (5) a “Walk with us” program to connect students with faculty and staff outside of the classroom, (6) weekly communications including tips and strategies focused on well-being, and (7) additional support through our pharmacy family structure. Beyond these examples, our partnerships with the University’s health science programs continue to deepen given our mutual interest in prioritizing student well-being. Efforts are ongoing to share best practices, create synergy, and explore interprofessional opportunities for broad impact. **Results:** Our efforts were well received, with students acknowledging and appreciating the visible efforts across our program. Through discussions with our health science program well-being advocates, we hope to expand efforts in the fall focused on peer-to-peer support and training. **Conclusions:** The pandemic has shown the importance of support for well-being and mental health services, needs we believe will continue in the aftermath of the pandemic. Therefore, many of the interventions implemented in the context of the pandemic will be continued and expanded moving forward.

### **Capturing the COVID-19 Virus: From Science to Community Outreach**

Anandi V. Law, *Western University of Health Sciences*, Micah Hata, *Western University of Health Sciences*, Preeti Kotha, *Western University of Health Sciences*, David Sanchez, *Western University of Health Sciences*.

**Objective:** COVID-19 vaccine-related activities surged through each unit of Western University of Health Sciences (WesternU). The College of Pharmacy (COP) incorporated COVID-19 vaccination initiatives into the trifecta of teaching, scholarship and service (both clinical and professional). **Methods:** Pharmaceutical Sciences faculty have been involved in researching how the virus causes disease. They have also been educating the campus and external communities through “Science to Shot” presentations which explain the science of mRNA vaccines, provide insights on trial procedures, safety and efficacy of the vaccines, and the speed of the FDA review process and its EUA approval. Practice faculty who were the first to get vaccinated through their healthcare worker tier, immediately went into action, overseeing and providing vaccinations at various county vaccination pods, local pharmacies, hospitals, and clinics. WesternU itself became a Los Angeles county vaccination site for the local underserved community which was responsive and appreciative. Up until the end of March, WesternU COP personnel including 65 students, 11 faculty, 10 alumni and 3 postdocs have provided more than 500,000 vaccinations at 5 sites, not including pharmacies. **Results:** Vaccination-related activities have also extended to continuing education programming for preceptors and practitioners. Further, scholarship outlining pandemic priorities and a study examining the impact of COVID-19 on health behavior and intention to vaccinate were among the first rapid review publications in the discipline. Outreach has included community engagement through various venues such as student clubs and community organizations. Topics have spanned a wide spectrum including addressing questions, concerns and vaccine hesitancy in underserved communities. **Conclusions:** WesternU COP lived up to its health professions commitment focusing on the science and caring for local communities in its many vaccine engagement approaches.

#### **Collaborative Efforts: TSUCOPHS & Baylor St. Luke's Bring COVID-19 Vaccinations to the Campus and Community**

Cynthia Johnson, *Texas Southern University*, Mario Jenkins, *Texas Southern University*, Abel Davil, *Texas Southern University*, Aisha Moultry, *Texas Southern University*, Willie Capers, *Texas Southern University*, Sondip Mathur, *Texas Southern University*, Rashid Mosavin, *Texas Southern University*.

**Objective:** The objective of this initiative was two-fold: 1). To provide access to COVID-19 vaccination to the Third Ward community where Texas Southern University is located. 2). To engage pharmacy students in providing the manpower necessary to vaccinate 700 persons per day

from February 28 to July 2, 2021 **Methods:** TSU College of Pharmacy and Health Sciences (COPHS) provided the necessary space in the College to set up a fully staffed vaccination clinic with a registration area (7 stations) and a vaccination room (6 stations). In addition, TSU provided security and transportation from the parking lot to the College. Baylor St. Luke's provided all the nursing and clerical staff. Patients were registered in Baylor St. Luke's Epic system and signed consent forms provided by St. Luke's. The College also provided pharmacy students and faculty who are certified in immunization to assist with dose preparation and administration. **Results:** Within two weeks of operation optimization, the clinic had the capacity to vaccinate 700 people a day. A massive awareness campaign began to ensure that the community knew we were available to provide their vaccinations. We engaged specific community groups and also provided education to the community on the safety and effectiveness of the vaccine. **Conclusions:** The partnership between the TSU College of Pharmacy and Health Sciences (COPHS) and Baylor St. Luke's resulted in the availability of the COVID-19 vaccine in an underserved community, Third Ward, in Houston. During a four-month period, we anticipate the vaccination of 75,000 residents in our TSU community.

#### **College and Community Collaboration to Crush COVID-19**

Kim M. Jones, *Union University*, Emily Quintanilla, *Union University*, Ashley N. Pugh, *Union University College of Pharmacy*, Jodi Taylor, *Union University*.

**Objective:** To assist with Tennessee's COVID-19 vaccination efforts through collaborations with various community partners. **Methods:** Prior to the Food and Drug Administration's granting of an Emergency Use Authorization for COVID-19 vaccines, the local health department contacted College of Pharmacy (COP) leadership seeking support. In response, COP faculty members delivered a two-part COVID-19 educational series to students, faculty, alumni, and community partners. COP leadership solidified collaborations with regional and metro health departments, committing trained immunizers for future vaccination clinics with assistance from the American Pharmacists Association – Academy of Student Pharmacists' Operation Immunization Chair. To incentivize student participation, Advocacy and Service requirements for the COP's co-curriculum were modified to include COVID clinic participation. Following the first drive-through clinic, COP faculty provided a mass vaccination clinic training session. COP leadership utilized social media to enlist alumni and preceptors to assist in staffing an 11-county vaccination initiative. Lastly, the College aided alumni and preceptors as they received

vaccine in their respective settings and provided an ACPE-accredited COVID-19 focused immunization update. **Results:** Through various collaborations, the COP educated and vaccinated West Tennesseans. Fifty-five students, 14 faculty, and 35 pharmacists attended the first vaccine presentation. Through Tennessee Department of Health collaboration, 8,866 patients were vaccinated in 18 counties. In collaboration with COP alumni and preceptors, 231 and 386 patients were vaccinated, respectively. To date, 59 COP students and 12 faculty members have participated in the provision of COVID vaccines. **Conclusions:** Through collaboration with multiple partners, the COP provided great assistance in meeting early vaccination goals in West Tennessee. Subsequently, student pharmacists were better prepared to administer and advocate for COVID-19 vaccination in their respective workplaces and on advanced pharmacy practice experiences.

### **Comprehensive Approach to Addressing COVID-19 Pandemic Through Vaccination Training, Vaccination Clinic Deployment, and Legislative Advocacy**

Busse Kristin, *Medical College of Wisconsin*, Michael DeBisschop, *Medical College of Wisconsin*, Rachel S. Kavanaugh, *Medical College of Wisconsin*, Mathew Letizia, *Medical College of Wisconsin*, Karen MacKinnon, *Medical College of Wisconsin*, George E. MacKinnon, *Medical College of Wisconsin*.

**Objective:** Early in 2020, the Medical College of Wisconsin (MCW) School of Pharmacy (SOP) identified student pharmacists could play an integral role in responding to the COVID-19 pandemic. All MCW student pharmacists are trained to administer vaccines, including the COVID-19 vaccine. To accelerate student vaccination training, advocate to advance the role of student pharmacists in administering vaccines, and deploy a COVID-19 Vaccination Clinic serving Phase 1a through 1c eligible individuals, including MCW employees, who are under the education mission of MCW. **Methods:** Planning for clinical responses to the pandemic began in mid-2020 with expansion of the annual SOP influenza clinics on campus, anticipating these clinics would provide experiences for student pharmacists and act as a model for future COVID-19 Vaccination Clinics. In a multidisciplinary effort, the SOP partnered with the MCW Office of Research to create a COVID-19 Vaccination Clinic to be operational by end of 2020. Following a five-year effort, and in collaboration with the Wisconsin state pharmacy association and other academic pharmacy programs, MCW SOP advocated to the state legislature to expand the ability of student pharmacists to vaccinate. **Results:** There was 100% faculty/staff participation in the COVID-19 Vaccination Clinic and 40% from student

pharmacists (equating to 5,000 hours over 46 clinic days). About 20,000 COVID-19 vaccine doses were administered in the campus-based clinic from December 2020 to April 2021. Legislation expanding the role of student pharmacists in vaccine administration was signed into law in February 2021. Additional vaccination training was conducted in April and July 2021 for first-year student pharmacists. **Conclusions:** The multiprong approach to support vaccination training, provide COVID-19 vaccinations, and advocate to expand student pharmacists' role was accomplished.

### **Concordia University School of Pharmacy COVID-19-Focused Health Initiatives**

Michael C. Brown, *Concordia University Wisconsin*, Elizabeth Buckley, *Concordia University Wisconsin*, Robert Burlage, *Concordia University School of Pharmacy*, Audrey Kostrzewa, *Concordia University School of Pharmacy*, Sarah Peppard, *Concordia University Wisconsin*, Sarah Ray, *Concordia University Wisconsin*, Nancy Stoehr, *Concordia University Wisconsin*, Melissa Theesfeld, *Concordia University Wisconsin*.

**Objective:** Concordia University School of Pharmacy (CUWSOP) develops servant leaders who improve the health of our communities. The COVID-19 pandemic provided new ways for faculty, staff, and students to live our mission by partnering with campus, regional, and state entities. **Methods:** The COVID-19 initiatives include seven domains: 1) creation of Emergency & Disaster Management APPE with practice partners 2) use of laboratory capacity for in-house testing, 3) provision of personnel support for county-managed testing, 4) partnering with the university's healthcare programs to vaccinate eligible individuals, 5) volunteering as vaccinators for local county and federally qualified health centers, 6) training area pharmacists and students to be immunizers, and 7) developing well-being and resiliency programming for faculty and students. Each domain required communication, collaboration, and coordination with the other Schools at Concordia, local health care partners, public health departments, and practitioners of underserved communities. **Results:** Seventeen P4 students provided care in their Emergency & Disaster Management APPE rotations. The in-house labs completed more than 20,000 tests for the campus and external community. CUW provided 470+ volunteer hours for COVID testing and 300 hours for vaccination efforts to our counties. On-campus inter-professional clinics provided 2700+ vaccine doses. Thirty-six pharmacists and 105 students were trained to immunize outside of our usual curricular training. Mindfulness training for all students and faculty was incorporated into curricular and co-curricular realms. All domains' efforts are ongoing. **Conclusions:** Through our servant leadership focus,

CUWSOP is a difference maker in our communities. Our work improved access to testing, vaccinations, and COVID-19 related care. These efforts provide opportunities to live our mission of service to others while mitigating the effects of and contributing to end the COVID-19 pandemic.

### **Creighton University Experiences with COVID-19 Vaccinations for Students and the Community**

Katherine S. Wadas-Thalken, *Creighton University*, Jennifer Tilleman, *Creighton University*, Shawn Cook, *Creighton University*, Kelly Nystrom, *Creighton University*, Paul Price, *Creighton University*, Evan Robinson, *Creighton University*, Amy Wilson, *Creighton University*.

**Objective:** To ensure health science students (OT, PT, and Pharmacy) receive the COVID-19 vaccine and aid in the efforts to vaccinate the citizens of the Omaha community.

**Methods:** Student vaccination: In January 2021, the Office of Academic and Student Affairs quickly gathered student interest in receiving a COVID-19 vaccine. The Assistant Dean for Student Affairs worked with upper administration to secure the vaccine for all students in the School of Pharmacy and Health Professions (SPAHP) through the Douglas County (Nebraska) Health Department (DCHD). Students received the vaccine at hospital partner, CHI Health, in Omaha. Community vaccination: Creighton partnered with the DCHD to provide mass vaccination clinics on campus for those meeting eligibility criteria beginning in February 2021. The clinics are supported by students and faculty in all health science programs. Initially, the Pharmacy Team was asked to prepare the vaccine for administration. With an increased need in vaccinators, the Pharmacy Team was also asked to vaccinate. **Results:** Student vaccination: The School coordinated the scheduling of 73% (n=339) of SPAHP students in the Omaha area. Community vaccination: Clinics occur every Saturday and will continue well into 2021. Each clinic requires 27 pharmacy volunteers over two shifts. The first clinic vaccinated 1429 people and later clinics expanded to vaccinate 4500+ people. Over 23,000 vaccines have been administered to date. **Conclusions:** SPAHP acted quickly when vaccines became available for students, as well as when the DCHD approached the University about doing large-scale vaccine clinics. The clinics have offered invaluable experience for students in managing mass vaccination clinics while fulfilling the mission of the University.

### **Curriculum Revision and Rollout During the COVID-19 Pandemic at Chicago State University College of Pharmacy**

Edward Ofori, *Chicago State University*, Paul Fina, *Chicago State University*, Michael Danquah, *Chicago State*

*University*, Jeremy Hughes, *Chicago State University*, Charisse Johnson, *Chicago State University*, Janene Marshall, *Chicago State University*, Rahul Garg, *Chicago State University*.

**Objective:** Curriculum revision and rollout in professional programs typically take several years to accomplish. The Chicago State University College of Pharmacy revised and implemented a new curriculum utilizing information from curriculum mapping, gap analysis, and assessment data within half a year. Not only was the period short, implementing these changes during the COVID-19 pandemic made it even more challenging. The purpose of the revision was to improve the learning outcomes of the program. **Methods:** To this end, we employed the principles of agile project management and design thinking that incorporated piloting, assessment, and improvement to inform the rapid changes. **Conclusions:** Herein, we discuss the full-circle curriculum revision process and evaluation of the curriculum implemented.

### **Dealing with a Global Pandemic and Beyond: PharmCAT Family Well-being and Suicide Response Readiness**

Jeannie K. Lee, *The University of Arizona College of Pharmacy*, Nancy Alvarez, *The University of Arizona College of Pharmacy*, Barb Collins, *The University of Arizona College of Pharmacy*, Elizabeth Pepper, *The University of Arizona College of Pharmacy*, Theodore Tong, *The University of Arizona College of Pharmacy*, Terri Warholak, *The University of Arizona College of Pharmacy*.

**Objective:** Stress and suicide ideation among college students increased during the COVID-19 global pandemic. Our objectives were to build college-wide readiness mechanisms to foster well-being and respond to potential deaths by suicide at the University of Arizona College of Pharmacy (UACOP). **Methods:** The PharmCAT Family encompasses UACOP students, faculty, staff, alumni, preceptors, and friends. The Wellness Committee met monthly to transition in-person activities to virtual formats and implement initiatives to foster online connections and enhance well-being among the PharmCAT Family. Before the pandemic, a team of administrators, faculty and staff collaboratively developed a suicide response plan and used tabletop exercises to assess readiness. **Results:** The Gratitude Wall transformed from physical walls on two campuses to a single virtual wall to facilitate broader PharmCAT Family inclusiveness and participation. The weekly Wellness Walks (30-min walks around the campus led by faculty/staff) was converted to online walking/exercise competitions. A comprehensive well-being resources list, weekly Wellness

Tips, and two editions of a student-led wellness newsletter were distributed. Creative virtual activities including a Smoothie Competition, Turkey Chat, Mental Health Check-in, and podcast/book club were launched. The 6-month UACOP Suicide Response Plan development was completed in February 2020, after successful readiness assessments for both campuses. Fortunately, no suicide cases were reported. However, aspects of the plan were executed to manage two non-suicide student deaths. The suicide response plan has been shared with other UA colleges who intend to develop their own readiness plan. **Conclusions:** The innovative wellness initiatives and a suicide response plan helped the UACOP members and PharmCAT Family to cope during the global pandemic. The focus on well-being and suicide prevention initiatives will remain beyond the pandemic.

### **Delivering a Case-Based Problem-Solving Course During COVID-19: Lessons Learned and Future Strategies**

May C. Lui, *University of the Pacific*, Stephanie Manley, *University of the Pacific*, Carly A. Ranson, *University of the Pacific*, Marisella Guerrero, *University of the Pacific*, Cynthia Lee, *University of the Pacific*, Eric Boyce, *University of the Pacific*, Allen Shek, *University of the Pacific*.

**Objective:** Due to the COVID-19 pandemic, the major objective was to continue to deliver a case-based, problem-solving course in an online format. **Methods:** The Doctor of Pharmacy curriculum at the University of the Pacific includes a 4-semester sequence of case-based, problem-solving courses. The on-campus design included dividing the 200-student class into 4 sections of 40-50 students for the first course in the series and then into sections of 12-15 students for subsequent courses. The first course provides instruction and foundational cases to develop abilities to workup patients, use the Pharmacists' Patient Care Process, write SOAP notes, and solve and document patient cases. The subsequent 3 courses involve progressively complex cases of various therapeutic topics following the curriculum, where students solve, document and present cases weekly with faculty-guided active discussions. In March 2020, the goal of pivoting the case-based courses online was to maintain the students' ability to actively participate, receive timely feedback and grow their critical and clinical thinking skills. Classes were held using Zoom for each section. Student submissions and instructor scoring continued to be captured through the Canvas learning management system. Student expectations were similar for the in-person and online courses. **Results:** Delivering these courses online assists in the ability for schools to maintain these hard-to-staff courses by leveraging off-campus faculty and provides learning opportunities to students needing

accommodations, adding much needed flexibility for learners and schools. The major disadvantages were computer and/or connectivity issues, difficulty for a few students to transition to the online environment, and faculty training in using the technology. **Conclusions:** Going forward, delivering these courses online will assist in utilizing off-campus faculty and providing sessions to students who are off-campus temporarily.

### **Designing the Future: Sustaining Lessons Learned from COVID-19 Inspired Transition**

Renee Acosta, *The University of Texas at Austin*, Ashley Castleberry, *The University of Texas at Austin*, Patrick Davis, *The University of Texas at Austin*.

**Objective:** Describe the continued curricular evolution at The University of Texas at Austin College of Pharmacy due to COVID-19 and how the College plans to sustain the positive changes that resulted. **Methods:** As part of an ongoing effort within the college, faculty are reflecting on successes and failures of both online and hybrid delivery. Instead of moving back to traditional delivery methods that have been employed in the past, faculty are identifying lessons learned and aspects of their courses that they plan to continue once in-person teaching resumes. **Results:** Faculty are sharing these lessons in regular teaching spotlights at faculty meetings for a brief overview. These are then followed up with a more in-depth discussion as part of an ongoing "Teaching Conversations" seminar series. The sharing of these experiences, combined with feedback from students and curricular assessment measures, holds the potential for a complete curriculum redesign involving successful pedagogical innovations. These pedagogical innovations are being financially supported by the college through the "Curricular Innovation Challenge Fund." Implementation will commence Fall 2021. **Conclusions:** Spring 2020 ended with a scramble to move in-person teaching online due to the impending pandemic. Summer 2020 was spent in a more thoughtful process for modifying courses for online and hybrid delivery in fall 2020 and spring 2021 utilizing faculty led workshops. Though challenging, these situations propelled us to teach in new and innovative ways; but everything will not just go back to normal when we are on the other side of the pandemic. Now is the time to cultivate lessons learned over the past year and a half to drive redesign of the Pharm.D. curriculum for the future.

### **Developing A Process to Effectively Collaborate with Community Partners to Provide COVID-19 Immunization Services**

Nicole Nielsen, *West Coast University*, Eric Kobayashi, *West Coast University*, Catherine Van, *West Coast*

University, Glenn Morataya, *West Coast University*, Marina Dykhne, *West Coast University*.

**Objective:** To develop a procedure that identifies community partners and designates student pharmacist resources to effectively provide collaborative COVID-19 immunization services. **Methods:** West Coast University School of Pharmacy (WCU SOP) conducted a COVID-19 immunization service partnership design analysis to establish a systematic approach that identifies mutually beneficial partnerships with community stakeholders, designates student pharmacist resources through two experiential learning programs, and establishes a collaborative pathway that is continuously monitored for quality improvement. **Results:** Two opportunities for areas of improvement were identified as initial focus areas during the design analysis. The first opportunity was to prioritize the student pharmacist resources based on strategic needs for both WCU SOP and Community Partners. The second opportunity was to develop preceptor and student affiliation guidelines to manage the operational logistics of student pharmacist participation in the COVID-19 immunization services. **Conclusions:** This approach has allowed for improvements in these two areas by opening new experiential education pathways, bettering student pharmacist experiences, and creating a united effort to respond to the needs of the COVID-19 pandemic.

### **Development of an Interprofessional Hospital Discharge Facilitation Team: Innovative Experiential Learning During the COVID-19 Pandemic**

Diana Langworthy, *University of Minnesota*, Scott Chapman, *University of Minnesota*, Kylee Funk, *University of Minnesota*, Brian Hilliard, *University of Minnesota*, Karyn Baum, *University of Minnesota*.

**Objective:** To describe a novel clinical and experiential teaching innovation developed at the University of Minnesota in response to the COVID-19 pandemic. **Methods:** During the Spring of 2020, when faced with the need to remove APPE students from the acute care setting, an innovative rotation experience was developed for learners to fulfill experiential learning objectives, Faculty members from the School of Medicine and the College of Pharmacy collaborated to create a novel remote discharge facilitation service in partnership with M Health Fairview to utilize medicine and pharmacy students to facilitate accurate and efficient hospital discharges while offloading some of the effort of patient discharge preparation by frontline providers. Discharge medication orders and discharge reconciliation notes were prepared by pharmacy students while a draft discharge summary was prepared by their medical student colleagues.

Students encountered several interprofessional learning experiences including collaborative discharge planning, review of patients for remdesivir allocation, and journal club discussions related to COVID-19 treatment. Pharmacy students responded to a survey rating their experience; this was in addition to the APPE experience evaluation routinely completed by students for all rotations. **Results:** Twelve pharmacy students completed the discharge facilitation rotation with positive provider and student perceptions of the service and the rotation, respectively. These students participated in providing medication reviews, draft discharge medication orders and discharge medication reconciliation notes for 78 patients, reviewed 751 patients for remdesivir allocation, and led eight interprofessional journal clubs over 16 weeks. **Conclusions:** In the midst of the global COVID-19 pandemic, faculty and preceptors at the University of Minnesota developed a novel rotation experience and precepting model that is serving as the foundation for future experiential education enhancements and future clinical services.

### **Doctor of Pharmacy Program Adaptations Amidst a Pandemic in NYC: Lessons Learned**

Elaine Wong, *Long Island University*, Susan Villegas, *Long Island University*, Rebecca Cope, *Long Island University*, Tina Zerilli, *Long Island University*, Jaclyn Novatt, *Long Island University*, Akash Alexander, *Long Island University*, Joseph Bova, *Long Island University*.

**Objective:** Similar to many academic institutions at the time, the Arnold & Marie Schwartz College of Pharmacy and Health Sciences grappled with the best means to continue delivering the Doctor of the Pharmacy curriculum amidst the Covid-19 pandemic. In response to the health crisis, in March 2020 the University suspended face-to-face instruction campus-wide and abruptly converted to a remote learning environment secondary to safety precautions. To ensure a seamless transition into the Fall 2020 semester, a College task force consisting of faculty and administrators was assembled and charged with designing a return-to-campus plan. The goal was to maintain a synchronous learning environment. **Methods:** Some areas addressed included: determining which courses require in-person instruction based on learning objectives and course activities; reviewing and modifying (as appropriate) policies to support student learning; re-assessing course schedules to reduce campus density; and reviewing student wellness services. It was also critical to evaluate anticipated challenges and available resources unique to our program. This included a large class size averaging 200 students, capacity limitations of existing facilities, student access to technology, experiential site restrictions, and public health concerns as a

predominantly commuter campus. **Results:** In adapting to continually evolving circumstances, the College opted to deliver a majority of courses remotely with the exception of select electives, laboratories, and activities. In retrospect, various lessons were learned regarding the limitations of new technology, implementation of remote assessments, resiliency of faculty and students, importance of creating student communities, and challenges with optimizing learning in student home environments. **Conclusions:** An assessment regarding the impact of student learning, retention, progression, and wellness after nearly one year of a modified instructional approach is warranted.

### **Doses of Hope: A Pharmacy School-Led Public/Private Collaboration to Provide COVID-19 Vaccinations in the Community**

Nora Stelter, *Drake University*, Michelle M. Bottenberg, *Drake University*, Erik Maki, *Drake University*, Renae Chesnut, *Drake University*.

**Objective:** To provide innovative COVID-19 vaccination strategies and solutions by collaborating with private and public entities in the largest county in the state of Iowa. **Methods:** The College partnered with the Polk County Health Department and Hy-Vee, Inc., a regional supermarket chain, to develop a COVID-19 vaccination clinic for citizens of Polk County, Iowa. The clinic provided vaccinations three days per week, four hours per day, starting the first week of January 2021. Pharmacist faculty clinic leaders developed policies and procedures, secured safe storage of vaccines, managed the clinic on site, and organized and trained faculty and student pharmacist volunteers to draw up doses, vaccinate, provide patient education, and monitor the post-vaccination waiting room. The Hy-Vee team managed scheduling/billing and reporting to the state immunization registry, as well as provided supplies and vaccines from the federal supply when available. The Polk County Health Department coordinated communication across county pharmacy partners and supplied vaccines to the clinic when available. The Harkin Center located at the University provided a universally-accessible space for the clinics each week. Mass vaccination clinics were also planned to address immediate community needs. As K-12 schools resumed in-person learning, a clinic for approximately 1,000 educators was held in partnership with Hy-Vee and the Boys & Girls Club of Central Iowa. **Results:** As of April 1st: Vaccinations provided: approximately 600/week; >1000 educators at mass clinic Faculty hours at clinic: 726 Student hours at clinic: 1,315 **Conclusions:** The College successfully collaborated with key campus and community partners to lead efforts in the county for COVID-19 vaccine administration and education.

### **Education, Innovation and Wellness: A Holistic Response to the Covid-19 Pandemic**

Zachary T. Woods, *The Ohio State University*, Nicholas L. Denton, *The Ohio State University*, Colleen Dula, *The Ohio State University*, Marje Winhoven, *The Ohio State University*, Ruth Emptage, *The Ohio State University*, Gina Grumble, *The Ohio State University*, Julie Legg, *The Ohio State University*, James McAuley, *The Ohio State University*.

**Objective:** The Ohio State University College of Pharmacy has taken a holistic approach to responding to the COVID-19 pandemic. Pharmacy educators had to balance several factors when pivoting to remote teaching such as: meeting students' learning goals, limited experience implementing online pedagogies, and shifting university safety policies. **Methods:** The college implemented strategic communication approaches, which included input from students, to encourage all programs to follow university guidelines and meet accreditation standards. College program leaders drafted guiding principles prioritizing health and safety as well as encouraging the use of instructional design processes to ensure activities and assessments were aligned with the desired outcomes. Instructors encouraged engagement by conducting virtual team-based-learning. Integrated pharmacotherapy instructors posted formative assessments and application cases in InteDashboard and used Zoom to enable group interaction with clinical experts. Course announcements included clarifications, case answers, and informational videos. Undergraduate lab courses used Microsoft Teams to design inquiry-team-based learning communities and demonstration video assessments. Lab instructors also used ExamSoft coaching reports to promote self-directed learning and implemented wellness surveys to respond to student concerns with health, finances, housing, and/or racism. Integrated Patient Care Lab instructors used authentic virtual experiences including a community pharmacy simulation program, inpatient EMR, and telehealth visits to complement in-person learning. **Results and Conclusions:** These strategies enabled the college to prioritize skills-based learning while maintaining student safety through smaller face to face cohorts, social distancing, and use of PPE. Students participated in precepted simulations and COVID immunization elective rotations to count towards introductory pharmacy practice experiences (IPPEs). Importantly, virtual rotations were offered for advanced pharmacy practice experiences (APPEs), which met student learning goals and accreditation standards, to enable students to graduate on time.

### **Encouraging Student and Faculty Well-Being During A Global Pandemic**

Sarah Vincent, *University of New England*, George P. Allen, *University of New England*, Rachel Mayer, *University of*

*New England, Emily Dornblaser, University of New England.*

**Objective:** The challenges of a rigorous graduate program, combined with the stressors of living in a pandemic, have brought significant concerns of student, staff, and faculty wellness to the forefront. The University of New England School of Pharmacy expanded its implementation of wellness activities in an effort to enhance overall wellness and combat burnout. The school also led initiatives to support student and faculty involvement in COVID-19 immunization efforts. Our objective is to describe the development of wellness activities across the school in the midst of a global pandemic. **Methods:** In 2020-2021, we developed a wellness educational series, school wellness events, community pandemic support opportunities, interprofessional activities, and curricular modifications. Wellness events included a school-wide Wellness Week with virtual sessions devoted to activities such as yoga. Pandemic support activities included training of pharmacists and technicians to become certified immunizers and the administration of COVID-19 vaccines by students and faculty. Curricular modifications included development of an elective course that explores burnout. Many of these initiatives were organized by the school's Wellness Committee. **Results:** We will report results of a survey of faculty, staff, and students that is designed to evaluate the quantity and types of wellness initiatives offered and the degree to which these stakeholders believe that wellness is being incorporated into our program. We will also describe data highlighting the impact of our students and faculty on COVID-19 immunization efforts and the need for engagement by non-clinical students (first-year and undergraduate students) to support COVID-19 immunization initiatives. **Conclusions:** We expanded our implementation of efforts supporting the wellness of students, faculty, staff, and the community during the COVID-19 pandemic. An assessment of the impact of these efforts is ongoing.

### **Ending the Pandemic: How the Loma Linda University School of Pharmacy Came to the Rescue**

Caroline M. Sierra, *Loma Linda University School of Pharmacy*, Jody Gonzalez, *Loma Linda University School of Pharmacy*, Nancy Kawahara, *Loma Linda University School of Pharmacy*, Jacinda Abdul-Mutakabbir, *Loma Linda University School of Pharmacy*, Danielle Davis-Khoromana, *Loma Linda University School of Pharmacy*, Christopher Jacobson, *Loma Linda University School of Pharmacy*.

**Objective:** To describe the involvement of Loma Linda University School of Pharmacy (LLUSP) faculty, residents,

staff, and student pharmacists in mass vaccination during the COVID-19 pandemic. **Methods:** LLUSP implemented five main interventions in response to vaccination needs due to the COVID-19 pandemic. First, LLUSP faculty (n=13) and student pharmacists (n=61) partnered with Student and Employee Health and the School of Nursing to coordinate 25 influenza vaccine clinics and vaccinate 1,824 students and 1,125 employees in September and October of 2020. Second, LLUSP faculty, residents, staff, and student pharmacists administered COVID-19 vaccines at 43 vaccination clinics to over 20,000 university healthcare professionals, students, and employees from December 2020 through February 2021. Third, LLUSP collaborated with the Schools of Nursing, Medicine, Dentistry, and Allied Health to develop and staff an on-campus mass COVID-19 vaccine clinic for the community, targeting 2,000 vaccinations each weekday. The LLUSP-led clinic provided over 40,000 vaccinations between January 27th and March 24th, 2021. Fourth, LLUSP faculty, staff, and student pharmacists executed COVID-19 mobile vaccination clinics targeting racially and ethnically minoritized communities, namely Black and Latinx persons. **Results:** Of 675 people vaccinated at these clinics, over 82% were Black or Latinx; 91% returned for the second dose. An LLUSP Black female faculty member also delivered educational COVID-19 vaccine webinars to minoritized groups. Fifth, the LLUSP pharmacy clinic located in a Federally Qualified Health Center area provided vaccines against COVID-19. LLUSP faculty and student pharmacists vaccinated 1,169 people over four days; over 93% of people returned for the second dose. **Conclusions:** The LLUSP is actively involved in ongoing mass COVID-19 vaccinations for healthcare professionals, students, and community members, as well as the underserved population.

### **Engaging Pharmacy Faculty and Students in Community and Institutional COVID-19 Vaccination Clinics**

William A. Prescott, *University at Buffalo, The State University of New York*, Jaime Maerten-Rivera, *University at Buffalo, The State University of New York*, Christopher Daly, *University at Buffalo, The State University of New York*, Nicole Albanese, *University at Buffalo, The State University of New York*, Richard F. O'Brocta, *University at Buffalo, The State University of New York*, Nicholas M. Fusco, *University at Buffalo, The State University of New York*.

**Objective:** To engage pharmacy faculty and students in COVID-19 vaccination initiatives in the Buffalo/Niagara region. **Methods:** Our school used a three-pronged approach to engage pharmacy faculty/students in COVID-19 vaccination initiatives. First, clinical faculty and IPPE/

APPE students sited at hospital/health-systems assisted with clinics vaccinating healthcare professionals. Second, in cooperation with professional student organizations, students were paired with faculty/adjunct-faculty at long-term care facilities, community pharmacies and state/county Department-of-Health sites targeting high-risk populations and essential workers. Here, licensed pharmacists modeled, coached and facilitated student engagement in patient education and vaccination technique. Third, starting with the 2021/22 academic year, key community pharmacies will be identified and IPPE/APPE students will be scheduled to ensure continuity of student presence at sites engaged in COVID-19 vaccination. Information was collected regarding the experiences and a survey is being developed to assess student perceptions. **Results:** As of March 2021, 6 faculty and at least 42 students have participated in at least one COVID-19 vaccination clinic: 43% of students participated in a community pharmacy, 31% in a long-term care facility, and 26% in a community-based clinic. During February/March 2021, students and faculty vaccinated more than 1,000 patients, accounting for one-quarter of all patients vaccinated at these sites. Overall, 95% of students rated their experience as good-excellent. The majority of students who participated in a vaccination clinic earned IPPE credit (80%). During their experience, students primarily engaged in patient education (74%), vaccine reconstitution (67%), vaccine administration (57%), post-vaccine patient monitoring (57%), and patient intake (55%). **Conclusions:** In line with our mission and strategic plan, our school successfully engaged both faculty and students in COVID-19 vaccination efforts, positively impacting student education and public health across the Buffalo/Niagara region.

### **Establishment of an Interprofessional COVID-19 Vaccination Center at the University of Puerto Rico**

Wanda T. Maldonado, *University of Puerto Rico*, Francisco J. Jimenez, *University of Puerto Rico*, Carmen Zorrilla, *University of Puerto Rico*, Suane Sanchez, *University of Puerto Rico*, Humberto Guiot, *University of Puerto Rico*.

**Objective:** Describe the implementation of an interprofessional COVID-19 Vaccination Center at the University of Puerto Rico Medical Sciences Campus. **Methods:** The Schools of Nursing, Pharmacy and Medicine partnered to establish the COVID Vaccination Center to serve the Medical Sciences Campus academic community, as well as the Puerto Rico community in general. The center began its operation on December 28, 2020, with the volunteer participation of faculty and students from the Campus' professional schools. The School of Pharmacy is responsible for preparing the Pfizer/BioNTech COVID-19 Vaccine doses. Nurses, pharmacists, physicians and the students from these

programs have participated in the administration of the vaccine. The School of Medicine has provided the staff physicians for the post-vaccination observation process. The installations of the School of Nursing and its infrastructure serve as the Center's clinic site. **Results:** Nurses, pharmacists, physicians and the respective professional students have participated in the administration of the vaccine. Faculty from the different professional programs have collaborated with the registration process as well as with the entry of patient information into the Puerto Rico Health Department database. To date, 30 clinics have been held, and over 7,400 vaccine doses have been administered. **Conclusions:** The clinic has become an exemplary interprofessional practice scenario with participation from the faculty and students from the six professional schools on campus. To date, 29 clinics have been held, in which over 7,400 vaccine doses have been administered. For the students from the various health professions, the center has provided an opportunity to enhance the academic experiences related to their engagement with COVID initiatives firsthand, while contributing to the ultimate goals of protecting patients from COVID-19 disease and achieving herd immunity in our community.

### **Evaluating and Improving Mental Wellness of Pharmacy Students at University of Houston College of Pharmacy**

Austin De La Cruz, *University of Houston College of Pharmacy*, Marjan Zakeri, *University of Houston College of Pharmacy*, David Wallace, *University of Houston*, Sujit Sansgiry, *University of Houston College of Pharmacy*, Kimberly Nguyen, *University of Houston*.

**Objective:** To describe the three areas that support student mental health at the UHCOP (University of Houston College of Pharmacy) **Methods:** The COVID-19 pandemic has been associated with many mental health challenges including the rise of anxiety and depression in U.S. adults. These mental health difficulties appear to be more prevalent in young adults aged 18-29 years. This age range encompasses a majority of pharmacy students who attend the UHCOP. Before the start of the COVID-19 pandemic, UHCOP established a priority to monitor the mental health of students. When the COVID-19 pandemic occurred, the College was already tracking and implementing interventions in order to promote wellbeing and resilience. The monitoring, detection, and reporting of mental health trends among the student body were completed through CCAPS-62 surveys, which were administered biannually. The survey results were measured using a retrospective study to evaluate the mental wellness of P1-P3 students with 305 students in Fall 2019, 238 in Spring 2020, and 159 in Fall 2020. **Results:** An ANOVA test comparing Fall 2019 (pre-

pandemic), Spring 2020 (at the start of the pandemic) and Fall 2020 data (middle of the pandemic), identified no significant difference in the students' overall mental health. In contrast to the national decline of mental health outcomes, UHCOP students' general mental health scores remained stable. **Conclusions:** Despite state mandated stay-at-home orders, UHCOP continued to provide students with an abundance of resources, virtual resilience programs, and opportunities to participate in wellness activities that were promoted by the Student Wellness Advisory Council (SWAC), Student Services, and Co-Curriculum. The disparity between student mental health outcomes and the national average could be attributed to the protective measures implemented by SWAC, Student Services, and Co-Curriculum.

### **Evaluation of Student Performance Based on Assessment Location: Remote vs. In-person**

Aaron Burton, *University of Saint Joseph*, Mark Sweezy, *University of Saint Joseph*, Anothony Nicoletti, *University of Saint Joseph*, Tamara Malm, *University of Saint Joseph*.

**Objective:** The COVID-19 pandemic has affected all aspects of the curriculum, one of which is the delivery of summative assessments to students. In spring 2020, the university adopted the HyFlex model of content delivery, allowing students to choose between on-campus and remote synchronous learning as needed throughout the term. This flexibility allows students to take summative assessments either remotely or in-person. With students completing the same examinations, we had the opportunity to evaluate student performance based on venue, proctored either remotely via Zoom or in-person. **Methods:** De-identified summative examination performance data was collected from seven second professional year Therapeutics courses during fall 2020 and spring 2021 (remote n=297, in-person n=110). Student performance was compared across courses using two-way ANOVA to analyze mean examination score by venue and Chi-square test of independence to analyze the frequency of examination outcome (pass or fail) by venue. **Results:** Performance differences did not reach statistical significance for students who took the examination in-person vs. remotely. The two-way ANOVA demonstrated similar mean scores by venue for each course and Chi-square test demonstrated similar outcome frequencies by venue across courses. **Conclusions:** The HyFlex model allowed student flexibility and did not show a difference in student ability to perform between remote vs. in-person delivery. Others have speculated that remote testing has a greater potential for academic dishonesty, but our study did not detect that. More study is needed to evaluate best ways to support student success on assessments.

### **Expanding the Pool of Pharmacist Immunizers**

Barry A. Bleidt, *Nova Southeastern University College of Pharmacy*, Robert McGory, *Nova Southeastern University College of Pharmacy*, Goar Alvaez, *Nova Southeastern University College of Pharmacy*, Michelle A. Clark, *Nova Southeastern University College of Pharmacy*.

**Objective:** NSU College of Pharmacy responded to the COVID-19 pandemic by establishing a community immunization center on its East Campus and training hundreds of immunizers. These actions were taken in response to the Secretary of the Department of Health and Human Service's emergency proclamation elevating pharmacists to frontline providers by authorizing them to order and administer vaccinations to persons three-years-old and over. **Methods:** As an added NSU touch, APhA provided material was supplemented by information pertinent to Federal immunization authorization, COVID-19 disease morbidity and mortality, and vaccine pharmacology and storage. Additionally, Florida-specific information was incorporated, including how to use the state's vaccine registry (FloridaSHOTS) and how to apply for the FSBP Immunizing Pharmacist Certificate. **Results:** Three training sessions were offered on a staggered timetable to support pharmacists with varied work schedules. Participants could choose to demonstrate their injection techniques live on campus or live, via Zoom. By the end of February, a total of 274 pharmacists and over 200 student pharmacists earned their immunization certification through NSU workshops. Nearly one-third of the trainees were hospital-based pharmacists, and many were retired, wanting to contribute where they could. Our program was advertised on a national mailing scale and many participants were from outside of south Florida and the state. We also attracted dozens of pharmacists from Puerto Rico. **Conclusions:** A significant workforce of immunizers was uncovered in a population of pharmacists who were not expected to immunize by their employers or had left the profession before obtaining their certification. Colleges of Pharmacies are important not only for training the pharmacy workforce but also by providing opportunities for lifelong learning for pharmacists.

### **Expanding the Pool of Pharmacist Immunizers and Reliance on Pharmacy Learners for COVID-19 Vaccination Efforts**

Lisa Kroon, *University of California, San Francisco*, Valerie Clinard, *University of California, San Francisco*, Tram Cat, *University of California, San Francisco*, Judie Tran, *University of California, San Francisco*, Sharon Youmans, *University of California, San Francisco*.

**Objective:** 1) To describe efforts to expand the pool of pharmacist immunizers and 2) To describe the key role pharmacy learners played in an academic medical center's COVID-19 vaccine program. **Methods:** Pharmacists and pharmacy learners are considered essential to the health care mission and health care response to the COVID-19 pandemic. In mid-December 2020, UCSF Health implemented their COVID-19 vaccine program. UCSF SOP leadership, in partnership with UCSF Health Pharmacy Enterprise, offered pharmacy learners and faculty to not only serve as immunizers, but importantly, to support pharmacy operations for vaccine preparation. SOP faculty created a plan to conduct immunization trainings to pharmacists across California. **Results:** To expand the pool of pharmacist vaccinators, SOP faculty conducted two virtual immunization trainings (December 2020 and March 2021) and an in-person skills practicum for over 80 pharmacists, including our volunteer faculty, at partner sites across California. We prioritized the in-person APhA Immunization Certificate Training for all first year pharmacy students in the fall. Beginning in 2020, pharmacy learners and faculty volunteered at the UCSF Health COVID-19 vaccine clinic. In an effort to ensure consistent support, SOP experiential faculty incorporated the clinics into existing IPPE and APPE rotations. Similarly, the COVID-19 clinic support was integrated into UCSF pharmacy residents' rotations. To date, more than 225 students have participated in multiple UCSF Health COVID-19 clinic sites. **Conclusions:** By creating more certified pharmacist immunizers, these pharmacists can serve as additional trainers and preceptors for student immunizers. Pharmacy learners play a key role in COVID-19 vaccination efforts by providing significant workforce support while also receiving lifelong learning experiences.

### Exploring Cultural Humility in Pharmacy Assessments Through Interprofessional Collaboration

Chadwin Sandifer, *Fairleigh Dickinson University*, Denise Rizzolo, *Fairleigh Dickinson University School of Pharmacy & Health Sciences*, Michael Avaltroni, *Fairleigh Dickinson University*, Julie Kalabalik-Hoganson, *Fairleigh Dickinson University*, Nora Lowy Lowy, *Fairleigh Dickinson University*.

**Objective:** The Accreditation Council for Pharmacy Education (ACPE) Standards includes the need for "students' demonstration of cultural awareness and sensitivity."<sup>1</sup> Cultural competency and humility should not only be interwoven throughout the pharmacy curriculum but also in the assessment tools. Exam item writing can be a difficult task but becomes more challenging when trying to integrate

questions that are culturally responsive to the audience. Race and ethnicity have a role when writing test items, but need to be used appropriately so they do not introduce unconscious bias. Fairleigh Dickinson University School of Pharmacy and Health Sciences (FDU SOP&HS) has been examining their didactic exams (non-laboratory course) to determine if the case vignettes have the potential to add to unconscious bias in students. **Methods:** A total of 27 courses from first-year to third-year were selected and 3621 questions were reviewed. Forty questions mentioned race and were further analyzed to determine if race was central to the question. Two independent reviewers examined each exam item. If there was a lack of agreement between the reviewers, a third reviewer examined the exam item. **Results:** Of the 40 questions that included race the following breakdown was found: Caucasian 25%, African American 35%, Asian 15%, Hispanic 20% and Pakistani 0.5% of the questions. Race was determined to only central to the question in 2 of the test-items. **Conclusions:** Exploratory analysis suggests that race is intermittently used and when it is in the vignette, it is not central to the question. While educators are well-intentioned when writing test-items, they should be cognizant that they are not contributing to unconscious bias in students that could have a negative impact on patient care when they become practicing pharmacists.

### Faculty and Student Engagement in COVID-19 Vaccination Initiatives; A Collaborative Community

Sheila M. Seed, *MCPHS University–Worcester/Manchester*, Jennifer Towle, *MCPHS University–Worcester/Manchester*, Patrick Zeller, *MCPHS University–Worcester/Manchester*, Abir O. Kanaan, *MCPHS University–Worcester/Manchester*, Paul Belliveau, *MCPHS University–Worcester/Manchester*, Anna Morin, *MCPHS University–Worcester/Manchester*.

**Objective:** Our engagement in COVID-19 vaccination initiatives reflects our school's mission in improving health-care by preparing PharmD graduates who contribute to patient well-being and participate in interprofessional team-based care. It also highlights our faculty service engagement and core values representing adaptability, collaboration, and compassion. **Methods:** Our school led vaccination initiatives in three categories: training, community outreach/service, and partner engagement. Faculty adjusted curricular requirements to allow students to complete the APhA Pharmacy-Based Immunization Certificate ahead of schedule. Students also completed cardiopulmonary resuscitation and OSHA blood-borne pathogen trainings. A faculty, appointed as the university's COVID-19 officer, collaborated with public health departments and community partners to identify site specific needs, and mobilized

faculty and students to help with preparation and administration of COVID-19 vaccines. A University COVID Immunization Committee was developed to support affiliates and partners in vaccination initiatives in MA (Worcester) and NH. **Results:** Ninety first year professional students (50%) completed the immunization certificate adding to existing student workforce of second and third professional year students. To date, 15 faculty and 75 students participated in vaccine preparation and administered over 1000 doses. Our community outreach and partners included: senior/low-income housing, long-term care facilities, a local university, and mass vaccination sites in MA and NH. These results do not include students who helped with vaccination efforts at rotation or employment sites. Faculty and students volunteered while attending to academic responsibilities. Although initial participation was limited due to vaccine availability, our community service and partner engagement is expected to increase as more vaccination sites and eligibility phases become available. **Conclusions:** Our school's response to the vaccination needs of our communities highlighted the pharmacist contributions and outreach during a pandemic.

### **Giving it Our Best Shot: Supporting Immunization Efforts Amid the Global COVID-19 Pandemic**

Mary M. Bridgeman, *Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey*, Tin Le, *Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey*, Leslie Barta, *Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey*, Carol Goldin, *Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey*, Donna M. Feudo, *Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey*, Joseph A. Barone, *Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey*.

**Objective:** To describe a collaborative response encompassing training and education; student, faculty, and preceptor engagement; and establishment of a vaccination corps to support coronavirus disease 2019 (COVID-19) vaccine distribution efforts. **Methods:** The global COVID-19 pandemic and emergency use authorization of vaccines against SARS-CoV-2 has resulted in unprecedented demand for vaccine distribution support. The School of Pharmacy has engaged in a multifaceted response, including collaborative training and education in injection competency in alliance with the state pharmacists association; engagement of students, preceptors, faculty and staff in vaccine distribution clinics around the state; and creation of Rutgers Biomedical and Health Sciences VAXCorps, an interprofessional health care group comprised of students, faculty and staff volunteers, to assist with the coordination of a mass vaccination

response for our university community and stakeholders. **Results:** As of March 2021, four immunization administration training programs for pharmacists and one for pharmacy technicians have been conducted, enabling more than 90 pharmacists, 400 students and 30 pharmacy technicians to fulfill training requirements. A significant portion of students, clinical faculty members and preceptors are supporting immunization efforts and taking on varied roles in vaccine distribution and clinic support, from patient education, scheduling, pre-vaccination screening, immunization and post-immunization monitoring. Our School is approved as a testing and vaccination center. A University-wide COVID-19 vaccine distribution clinic is planned for spring 2021. **Conclusions:** The COVID-19 pandemic and emergency use authorization of vaccines against SARS-CoV-2 have necessitated a rapid scaling up of an immunization provider workforce to meet the demands of a mass immunization response. Our school community – students, faculty, preceptors and staff – has been integral in supporting state-wide COVID-19 immunization distribution and education and training for expanding the immunizer workforce.

### **Harding College of Pharmacy Partners to Administer COVID-19 Vaccine and Foster a Community of Mission**

Sarah Griffin, *Harding University*, Julie Hixson-Wallace, *Harding University*, Ellen Jones, *Harding University*, Jeanie Smith, *Harding University*, Anissa Harris, *Harding University*, Rayanne Story, *Harding University*, Jeff Mercer, *Harding University*.

**Objective:** Partnering with community stakeholders enhances COVID-19 vaccination aims within Arkansas communities. **Methods:** Harding University College of Pharmacy, commissioned by the larger University, partnered with community stakeholders to serve as a “spoke” in the hub-and-spoke distribution model for administering COVID-19 vaccine in Arkansas. Harding leveraged existing partnerships with Unity Health - White County Medical Center (UH - WCMC) and community pharmacies easing the burden on local vaccination clinics by enhancing coordination of resources, personnel, and space. As an approved program provider through the Arkansas Health Department (ADH), Harding was also able to administer the vaccine directly, demonstrating good citizenship in the community. Finally, the College of Pharmacy adjusted curricular experiences to support interprofessional vaccination clinics statewide. These collaborations provided pharmacy students meaningful ways to contribute to a public health initiative with a far-reaching impact on overall community health. **Results:** By partnering with AHD, UH - WCMC, and local pharmacies, Harding administered –within a

60-day span—more than 1,000 COVID-19 vaccines to faculty, staff, and other University associates. Through collaborative connections with UAMS and the Arkansas Pharmacist Association, students logged more than 2,425 service hours in vaccination clinics elevating administration rates, freeing up other pharmacy vaccine supplies, and increasing access to care. The College of Pharmacy has played a pivotal role in fostering a community of mission, enhancing interprofessional collaborations, and highlighting the role of the pharmacist in providing public health and immunizations. **Conclusions:** Rapid and widespread administration of the COVID-19 vaccine continues to benefit the overall health of local communities through the reduction of COVID-19 cases. Harding utilized collaborative partnerships to boost access to the vaccine and improve the health of our communities in White County and throughout Arkansas.

### **How UAMS College of Pharmacy Supported COVID-19 Vaccination in Arkansas**

Megan Smith, *University of Arkansas for Medical Sciences*, Seth Heldenbrand, *University of Arkansas for Medical Sciences*, Mary Prosser, *University of Arkansas for Medical Sciences*, T. Scott Warmack, *University of Arkansas for Medical Sciences*, Lanita White, *University of Arkansas for Medical Sciences*.

**Objective:** To describe the UAMS College of Pharmacy's impact on vaccine initiatives within the state of Arkansas

**Methods:** As of August 2020, 74 of 75 counties in Arkansas are classified as medically underserved areas. When COVID-19 appeared in Arkansas, it was apparent pharmacists would be essential to vaccinate 3 million residents. In Phase 1 vaccine distribution, 80% of the State's allocation was distributed to community pharmacy partners and 20% to health systems. UAMS COP collaborated with Arkansas Department of Health and Arkansas Pharmacists Association to implement the plan. Faculty identified and recruited pharmacies targeting each county to have at least 1 vaccine provider. Our students engaged by volunteer efforts and academic coursework in Advanced Pharmacy Practice Experiences. COP developed a state-wide volunteer process, which was shared with neighboring college of pharmacy. Students and faculty opted-in to text alert service notifying them immediately of volunteer opportunities. **Results:** From December 15, 2020, to March 28, 2021, 52 pharmacies and mass clinic sites received help from 136 UAMS COP students. In total, UAMS COP students devoted 1592 hours to vaccine initiatives. A total of 39 students were reassigned to 160-hour COVID-19 pandemic response APPE rotations between January and April of 2021. Nine students were assigned to health-system

preceptors, 13 were assigned to community preceptors at COVID-19 vaccine tier 1 and tier 2 pharmacies, and 17 students were assigned to a college of pharmacy faculty that coordinated student assignments based on vaccine administration efforts of community pharmacies across the state. **Conclusions:** UAMS College of Pharmacy engaged via faculty support, APPE rotations, and a coordinated volunteer program to assist with vaccine planning and distribution, and administering COVID19 vaccines.

### **Hybrid Teaching Strategies to Improve Student Learning During Emergency Remote Teaching and Online Education**

Rajesh Vadlapatla, *Marshall B. Ketchum University*, Ajoy Koomer, *Marshall B. Ketchum University*, Amir Shirazi, *Marshall B. Ketchum University*, Edward Fisher, *Marshall B. Ketchum University*.

**Objective:** The COVID-19 pandemic forced many institutes to shift quickly to emergency remote or virtual instructional delivery. The objective of this presentation is to discuss key strategies employed at our College in emergency remote teaching and online education and provide a comparative analysis and assessment of didactic and laboratory activities during remote versus in-person instruction. The integrity of remotely administered assessments was maintained by using online proctoring software. **Methods:** A comparative analysis of remote vs. in-person instruction was performed in didactic curriculum and laboratory settings. The student feedback was received using student focus groups to learn student experiences pre and post-pandemic situations. In addition, faculty responses on remote/virtual learning were also collected through a survey. **Results:** The existing technology infrastructure and the instructional pedagogies employed by the faculty have successfully handled emergency remote teaching. There was no significant change in student performance in remote vs. in-person instruction. Overall, the students and faculty members are satisfied with the remote education. **Conclusions:** Virtual learning provides advantages to students, including learning the content at their own pace and flexibility in their internship working hours. It also abolishes the time and space constraints associated with the "in-person" delivery of courses with foundational concepts that are ubiquitous. It indirectly allows an institution to commit additional resources to laboratory and experiential courses that need on-campus/site participation by students to demonstrate critical psychomotor skills essential to competent practicing pharmacists. Besides, an institution with robust IT and instructional technology infrastructures can use remote teaching as leverage to market their programs to

prospective students with greater flexibility in class schedules by eliminating the need for campus trips that save time and commuting hassles in congested highways.

### **Impact of the COVID-19 Pandemic on Faculty at Research-Intensive U.S. Schools/Colleges of Pharmacy**

Kimberly Illingworth Plake, *Purdue University*, Michael J. Fulford, *The University of Georgia*, Lisa Lebovitz, *University of Maryland*, Andrea S. Franks, *The University of Tennessee*, Kayleigh Greene, *The University of Georgia*, Trisha Branan, *The University of Georgia*, Amber Clemmons, *The University of Georgia*.

**Objective:** To describe the impact of the COVID 19 pandemic on teaching, research, practice, and work-life integration for pharmacy faculty. **Methods:** An online survey was sent to faculty at nine research-intensive as part of a collaboration assessing the impact of COVID 19 on United States schools/colleges of pharmacy. Survey items included the transition to remote work and its impact on faculty responsibilities. Respondents were asked to identify and rate challenges (0 = not at all challenging to 10 = extremely challenging) they faced in teaching in the remote learning environment in Spring 2020 and those anticipated in Fall 2020. Respondents' level of concern regarding the pandemic's impact on promotion, performance reviews, course evaluations, and student safety were assessed. Demographic data included affiliated institution, years in academia, discipline, age, race, and gender. Descriptive statistics were performed for all items. Parametric statistics were utilized for comparisons of faculty's challenges and concerns between spring and fall semesters, for the types of students taught, and by faculty discipline. **Results:** Surveys were completed by 279 faculty (36% response rate), with 62% identifying as pharmacy practice faculty. Respondents reported numerous challenges ( $\geq 7/10$  point scale) during the pandemic, most commonly were family/home responsibilities (41%), assisting children with schoolwork (28%), and availability of childcare (22%). Faculty voiced concerns regarding increased workload, potential for student academic dishonesty, and inability to effectively conduct hands-on activities. Pharmacy practice faculty encountered barriers with telehealth and delivering virtual experiential education, while both practice and research faculty reported concerns with research progress. **Conclusions:** The pandemic led to substantial challenges and increased workload in teaching, research, and practice. As the pandemic persists, administration should consider these reported barriers and concerns to inform policies and procedures to support faculty.

### **Improving Student and Faculty Well-Being Through a Pharmacy School-Run Focused Testing COVID-19 Clinic**

B. DeeAnn Dugan, *Samford University*, Roger Lander, *Samford University*, Michael Kendrach, *Samford University*, Peter J. Hughes, *Samford University*, Michael Crouch, *Samford University*.

**Objective:** Describe the development and health corollaries of a pharmacy-run focused testing COVID-19 clinic. **Methods:** Samford University devoted significant resources for a safe campus plus considered the well-being of students and employees. Included was a robust COVID-19 testing program consisting of pre-campus arrival screening plus random and focused COVID-19 testing. The McWhorter School of Pharmacy faculty and first, second, and third year student volunteers ran the Focused Testing Clinic from September 2020 until April 2021. All university students were selected for testing in targeted clusters by residence, organization, school, demographics, or event participation based on possible or direct exposure to the virus. Test samples were collected by a self-administered nasal swab and then tested using a point-of-care rapid antigen test (Sofia 2 by Quidel). Students were counseled on their result on-site (eg, continue following CDC prevention guidelines or be isolated). Results were collected and submitted to the Alabama Department of Health. Data for this study were collected retrospectively from these results. **Results:** Over 2700 tests have been done in this program; 45 (1.7%) tested positive. Positivity rates declined from the fall (2.50%) to the spring (0.92%) semester. Of the six graduate level programs tested, only the pharmacy program had any positive results with four students (2.4%). For undergraduates, Junior level students had the highest positivity rate in the fall (5.7%) while Seniors had the highest rate in the spring (2.6%). **Conclusions:** The Focused Testing Clinic, as part of the testing strategy at Samford University, enabled students, and employees to maintain physical health that led to the ability to remain on campus and supported continuation of face-to-face classes.

### **Incorporation of Trauma-Informed Care (TIC) into Pharmacy Education Through Active Learning**

Kelly N. Gable, *Southern Illinois University Edwardsville*, Stephanie Hunziker, *Southern Illinois University Edwardsville*, Lakesha M. Butler, *Southern Illinois University Edwardsville*.

**Objective:** The experience of trauma is common and directly linked to negative health outcomes. The Adverse Childhood Experiences (ACEs) study showed the powerful relationship between the experience of trauma and heart

disease, cancer, diabetes, depression, and substance use. Community trauma is embedded within systemic inequities, including lack of affordable/safe housing, community violence, and discrimination. Our healthcare system is currently facing syndemic trauma from the COVID-19 pandemic, alongside the trauma of racism within healthcare. TIC allows clinicians to recognize and adequately address this trauma, but there is sparse TIC learning within pharmacy education. **Methods:** Throughout the 2020-2021 calendar year, SIUE conducted 4, 1.5-hour virtual TIC trainings, offered to a pilot group of 25 students, faculty, and staff. Content within sessions included the emotional/physical impact of trauma, the ACEs study, historical trauma, systemic oppression, poverty, and racism, and community healing. Participants completed a poverty-TIC simulation and were provided a copy of Dr. Kendi's *How to be an Antiracist*, to utilize as a learning guide. Additionally, all 2nd year pharmacy students enrolled in a Health Promotion and Literacy course completed a 2-hour TIC learning session, mirroring content from the pilot program. The Knowledge, Attitude, and Practice Related to Trauma-Informed Practice was used to assess the impact of both learning experiences. **Results:** 73% of student participants indicated strong agreement supporting the principles of TIC at the completion of their training (vs 14% at pre-assessment). 78% strongly agreed (vs 38% at pre-assessment) that TIC is essential for working effectively with patients. **Conclusions:** Preliminary results from these experiences demonstrated a profound shift in understanding of TIC, allowing our pharmacy school community to build upon empathy and have intentional, antiracist, trauma-aware approaches to providing patient care.

### **Innovations in Teaching During the COVID-19 Pandemic**

Stephen Kerr, MCPHS *University–Boston*.

**Objective:** Due to the COVID-19 public health crisis, didactic, lab, and experiential PharmD courses for over 1,000 students adapted to virtual platforms. The objectives with adaptation included supporting students, faculty, and staff; ensuring similar educational outcomes; and maintaining 2016 ACPE Standards. **Methods:** Several didactic courses used a team-based managed approach utilizing pre-session readings/videos, ExamSoft tests/quizzes, and student group participation. PY1 and PY3 community pharmacy skills courses utilized the LMS platform for dissemination of time-released assignments, and maintenance of a comprehensive grading system, affording the ability to track and assess outcomes. Individual assessments, assignments, and one-to-one sessions enabled faculty to see where students needed additional support, allowing faculty to pivot

accordingly. Team-based experiential faculty collaboration afforded the Class of 2020 an on-time graduation with one fully remote APPE that was evaluated for quality. Lastly as a health-science focused institution, intentional priorities to combat COVID-19 were initiated. **Results:** Qualitative strengths included one-to-one meetings, approachable professors, technology adaptability, and small learning groups that increased individualized education. Lessons learned include longer-than-expected adaptation time and technology competency development needs. For experiential education, the majority of students (83.4%) viewed APPE remote education as equal to or better than onsite education. Preceptor response was significantly impactful ( $p < .05$ ) along with technology concerns ( $p = .01$ ). Simulation and telehealth were vital to remote experiential learning. To combat COVID-19, an additional 225 interns, 30 pharmacists and 135 pharmacy technicians were certified in immunizations this year. Several faculty and students have volunteered in COVID-19 Vaccination Clinics to reconstitute or administer hundreds of doses per day. **Conclusions:** Although pivoting quickly to the virtual setting was challenging, feedback has been positive and constructive with recommendations to maintain some elements in the traditional on-campus setting.

### **Innovative Strategies for Engagement in Teaching and Learning During a Pandemic**

Alvin B. Oung, *University of Wyoming*, Michelle L. Blakely, *University of Wyoming*, Lauren R. Biehle, *University of Wyoming*, Michelle L. Hilaire, *University of Wyoming*, Tracy D. Mahvan, *University of Wyoming*, Allison M. Mann, *University of Wyoming*, Jessica Papke, *University of Wyoming*, Baskaran Thyagarajan, *University of Wyoming*.

**Objective:** The COVID-19 pandemic has impacted pharmacy schools across the country and around the world. Like many other institutions, the University of Wyoming School of Pharmacy adopted and implemented creative strategies to meet the needs of our students. **Methods:** First, we introduced a cohort, hybrid delivery model to minimize the spread of infection, while allowing for limited student-faculty face time. We also conducted a review of our curriculum and optimized course schedules to align with campus guidelines. This proved to be a fluid process given the dynamic nature of the pandemic. For in-person labs, students adhered to specific sanitation, mask, and social distancing guidelines. In the didactic setting, many faculty completed both internal and external workshops to expand their skillset in online teaching. In addition, new technologies and strategies were widely employed, including asynchronous discussion boards, online tools for student

collaboration, video recording, and online proctoring software. In the experiential setting, the restrictions of physical space across rotations challenged faculty to be creative in rethinking and redesigning both virtual and in-person rotations. **Results and Conclusions:** While many APPE students were able to continue with traditional rotations, others were trained in the delivery of virtual video visits, telehealth, and population health initiatives. Similar to the didactic setting, new technologies such as an educational electronic health record, digital escape rooms, and virtual classrooms have been instrumental for student development in the experiential setting. Finally, we are more conscious than ever of the many hardships that students may be facing. As a result, advising teams are more proactive about evaluating not only academic needs, but also mental health, well-being, family, finances, food insecurity, and others.

### **Interprofessional Education During the COVID-19 Pandemic**

Teresa Seefeldt, *South Dakota State University*, Brittney Meyer, *South Dakota State University*, James Clem, *South Dakota State University*.

**Objective:** To outline changes to interprofessional education (IPE) activities in the didactic curriculum at a non-academic health center campus due to the COVID-19 pandemic and discuss challenges as well as opportunities for future virtual IPE. **Methods:** In the didactic portion of the curriculum, five IPE activities were held virtually, one was conducted in-person, and one event was canceled. The virtual IPE activities were conducted using video conferencing technology. Modifications were made to IPE pre-work to facilitate virtual interactions, including pre-recording videos for students to watch prior to the IPE and incorporation of online individual simulation activities followed by group debriefing. Breakout rooms in the video conferencing program allowed students in each discipline to meet independently before coming together to discuss. Safety precautions were put in place for the in-person IPE, including restricting the number of students in the simulation room, offsetting simulation group times for less contact during transitions, using video observation in a separate classroom for observers, additional cleaning and sanitizing, and use of personal protective equipment. **Results:** The virtual events were implemented successfully, and the IPE student learning outcomes continued to be met. Advantages of virtual IPE included participation of health professions students in online programs, reduced physical space needs, and decreased travel requirements. Challenges in virtual IPE included technical issues, unclear professionalism expectations in the virtual environment, issues sharing resources across professions virtually, and problems with tracking

data. Concerns regarding missing roles and responsibilities including in-person communication skills and physical assessment were also noted. **Conclusions:** Virtual IPE presents several opportunities for programs at non-academic health center campuses. Programs can consider a balance of in-person and virtual IPE experiences post-pandemic.

### **Lessons Learned during the COVID-19 Shutdown: Recommendations for Future University Pandemic Responses**

Brittany N. Palasik, *University of North Texas Health Science Center*, Meenakshi R. Ramanathan, *University of North Texas Health Science Center*, Meredith L. Howard, *University of North Texas Health Science Center*, Annesha White, *University of North Texas Health Science Center*.

**Objective:** The aim of this well-being initiative was to increase virtual wellness offerings to student pharmacists, faculty, and staff. **Methods:** Recognizing that wellness-focused efforts would be challenging with the global pandemic, a coordinated effort of stakeholders was initiated. The College of Pharmacy (COP) Student Wellness Workgroup, Senior Associate Dean of Academic Affairs, COP Wellness Fellows, and representatives from the Center of Academic Performance (CAP) reviewed previous wellness offerings and brainstormed methods to encourage student wellness amidst virtual education. The Work-Life Journey Committee was founded in 2017 to assess and promote well-being amongst COP faculty and staff. The group of 4-6 members initially gathered information on faculty perceptions of work-life balance. The committee brainstormed well-being topics to include in an online Work-Life Journey Toolkit. They implemented, assessed, and updated the Toolkit, while promoting well-being through various platforms. This group was tasked with keeping everyone connected virtually during the pandemic. **Results:** The student wellness stakeholders created longitudinal group challenges to foster student relationships in a virtual environment. Monthly wellness handouts or synchronous virtual presentations were provided. Due to low turnout at synchronous presentations, the Big-Little program for first year students was expanded for "bigs" to deliver wellness information during meetings. The Work-Life Journey Committee met monthly to develop handouts and offer virtual social support sessions. Example session topics were grit, resilience, and vision-boarding. Special guests performed engaging activities like escape rooms and magic shows, and use of the Toolkit was encouraged. Faculty and staff were surveyed to request examples of relaxation techniques and the committee promoted use of the COP virtual relaxation room. **Conclusions:** Wellness offerings were transitioned to a virtual

environment and were utilized by students and COP employees.

### **Lessons Learned from COVID-19 Instructional Challenges in an Accelerated, Dual-Campus Pharm.D. Program**

Patti W. Black, *South University*, Nicole Ras, *South University*, Tracey Meade, *South University*, Kenric Ware, *South University*, James Fetterman, *South University*, Wei Deng, *South University*.

**Objective:** Evaluate COVID19-associated instructional challenges involving classroom-based (CB) and laboratory-based (LB) instruction and experiential education (EE). Evaluate strategies to navigate instructional challenges of virtual and hybrid environment. Identify strategies to retain in the post-COVID learning environment. **Methods:** Faculty experiences during each academic quarter were monitored using intraquarter check-in meetings and survey data to identify instructional challenges faced and successful strategies used to navigate challenges. Student reactions to virtual and hybrid learning options were monitored using polls and feedback collected from Advisors, Academic Success Coordinator and Student Affairs. **Results:** Top challenges identified by faculty during COVID-19 pandemic included student engagement/attendance, technology, barriers to peer-to-peer learning, and academic integrity. Technology challenges in both virtual and hybrid modalities primarily related to connectivity issues and adequacy of virtual platforms to facilitate student engagement. Session recordings were provided to students experiencing connectivity issues. Videoconferencing platform preferences were based on capacities for webcam-sharing, breakout rooms, and free-writing or drawing. Live polling software was used in many courses for quizzing and gaming. No suitable option was identified for free-writing or drawing in hybrid environment. Overall, students in both didactic cohorts preferred virtual over in-person instructional modality. Academic probation students unanimously preferred in-person instruction. Virtual options were incompatible with most LB instructional activities and assessments but not for EE. Telemedicine and virtual rotations increased in IPPE/APPE rotations. **Conclusions:** Student engagement persisted as a challenge in virtual modality despite technology options. Virtual or hybrid modality for some electives and select core courses could be effective, although lower performing students may require additional support. LB instruction requires mostly in-person activities and assessments. Supplemental videos in LB instruction and telemedicine or virtual rotations in IPPE/APPE should continue in post-pandemic instruction.

### **Marshall University: Taking Care of Each Other**

Pharmacy Practice Department, *Marshall University School of Pharmacy, Huntington, WV*.

**Objective:** Communication, collaboration, and community outreach are challenging to achieve under normal circumstances. When the pandemic necessitated our academic community to suddenly switch to online teaching and learning, many felt isolated. **Methods:** The school realized that our "pharmily" needed attention beyond the online classroom environment. Therefore, the school arranged weekly virtual town hall meetings with students, faculty, and staff in the spring semester of 2020. Additionally, trivia night began every Wednesday evening on Facebook with virtual teams during the spring semester of 2020. Students, faculty, and staff formed teams to compete against each other. During the fall semester of 2020, our wellness committee organized game nights for the three pharmacy classes to compete against each other. **Results:** These game-based activities aided the school with communication as well as formed a sense of community. Nevertheless, there was still a need to address a sense of self. Thus, mindfulness exercises were introduced as a part of the first-year students pharmacy practice class. The school also realized that our greater community needed attention. Faculty compounded hand sanitizer for the fire department and multiple charities. Various pharmacy organizations helped create an "at home Quarantine-O-Ween scavenger hunt" for our community center, provided a student-staffed drive-thru clinic for COVID-19 testing, and sponsored several drive-thru food collection events that will continue throughout the year. Lastly, faculty and students participated in multiple COVID-19 vaccination clinics sponsored by our health department, independent and chain pharmacies, the National Guard, and more, resulting in vaccinating thousands of eligible people. **Conclusions:** Together we thrive!

### **Meeting the Challenges of COVID-19 Head-On: Lessons Learned from the Transition to Virtual Learning**

Melissa A. Burmeister, *William Carey University School of Pharmacy*, Donna M. Adkins, *William Carey University School of Pharmacy*, Charles R. Breese, *William Carey University School of Pharmacy*, Elina Delgado, *William Carey University School of Pharmacy*, Jessica L. Johnson, *William Carey University School of Pharmacy*, Samantha Odem, *William Carey University School of Pharmacy*, Kristopher G. Virga, *William Carey University School of Pharmacy*, Abby J. Weldon, *William Carey University School of Pharmacy*.

**Objective:** In response to the COVID-19 pandemic, WCUSOP transitioned to a virtual learning format from March-July 2020. **Methods:** Apart from periodic real-time interactive components, most instruction during quarantine occurred asynchronously. Faculty utilized lecture capture and learning management software to disseminate pre-recorded course content. A detailed calendar helped students maintain the expected pace of engagement with material. Students were required to routinely engage with classmates and instructors (eg, video conferencing, discussion boards) and to complete active learning assignments. Courses and experiential rotations were re-arranged to circumvent delays in progression. Most assessments were monitored in a semi-secure environment (ie, faculty proctors and video conferencing). **Results:** Outcomes data positively reflect the School's virtual learning format. Exam outcomes from the 2020 virtual iteration of courses were similar to those from the 2019 in-class iteration. Post-course evaluations and COVID-19 survey comments indicated that students preferred synchronous, in-person instruction to optimize engagement. New procedures implemented during quarantine (and revised following student feedback) created a critical framework for the School, allowing students to return to a modified classroom environment after only one term of virtual learning. Some policy modifications have been maintained, particularly pertaining to student absences (COVID-19-related or otherwise). Lectures are now live streamed when necessary, allowing students to remotely attend class at regularly scheduled times, and monitoring software is used to ensure exam integrity. Despite adaptations to safely conduct experiential, interprofessional, and co-curricular activities, quality and quantity were not impacted. Budgetary impacts were cost neutral. The School's "COVID-19 Task Force" strictly enforces safety protocols according to CDC and government guidelines to responsibly accommodate in-person instruction. **Conclusions:** Collectively, the School's dynamic COVID-19 response fostered student success not only during distance learning but also moving forward.

### **Modified Approaches in Hybrid Teaching and Experiential Learning: Successes and Challenges During COVID-19**

Jason Guy, *University of Findlay*, Julie H. Oestreich, *University of Findlay*, Susan Lewis, *University of Findlay*, Suzanne Surowiec, *University of Findlay*, Timothy Burkart, *University of Findlay*, Tonya Dauterman, *University of Findlay*.

**Objective:** To highlight approaches to teaching in a College of Pharmacy during the COVID-19 pandemic as well as the associated challenges and successes. **Methods:** There were

many innovations during the COVID-19 pandemic at the University of Findlay College of Pharmacy related to curricular design and assessment strategies. During the 2020-2021 academic year, the College of Pharmacy offered hybrid learning allowing classes to be taught simultaneously to face to face and remote learners. Hybrid learning allowed for technologies to be used more frequently in the classroom including enhanced uptake of Zoom features, iPads, lecture recording, and polycom devices to facilitate student learning. Additionally, the college utilized creative approaches to delivering content including more experiential learning opportunities and game-based tools optimized to facilitate discussion and improve engagement. Adaptive approaches to teaching shifted how learners are assessed both through adaptive technology and increased low stakes assessment for better pacing through courses. Finally, faculty leveraged enhanced experiential, service learning, and co-curricular opportunities during vaccine rollout. **Results:** Faculty utilized new technologies and pedagogy to enhance learning for hybrid courses. Numerous successes resulted from these modifications including providing more accessible and engaging content. However, adjusting rapidly especially in the Spring of 2020 came with some challenges including adjusting to new technologies, assessment strategies, and protocols. Specifically, adapting content came with an increased workload for faculty and identifying assessment strategies that were secure took multiple attempts and additional resources to optimize. **Conclusions:** Modifications in the utilization of technologies, pedagogy, assessments, and experiential learning have helped the College of Pharmacy adapt to the challenges brought on by the COVID-19 pandemic.

### **Moving Education Forward by Adapting During COVID: Presbyterian College's Experience**

Kayce Shealy, *Presbyterian College*, Giuseppe Gumina, *Presbyterian College*, Mary Douglass Smith, *Presbyterian College*, Scott Kincaid, *Presbyterian College*, Talisha Ratliff, *Presbyterian College*, Erika Tillery, *Presbyterian College*.

**Objective:** To describe the delivery of pharmacy education in a small, private, liberal arts, church-affiliated school of pharmacy during the COVID pandemic, and how this has positively shaped the future. **Methods:** In March 2020, Presbyterian College School of Pharmacy announced plans to shift to emergency remote delivery of all courses for the remainder of the spring semester at the conclusion of spring break. Planning for the 2020-2021 academic year began in May 2020, and was guided by experience from the spring 2020 semester. Faculty and students provided input through a survey administered by the assessment committee; faculty

provided feedback during town-hall meetings and through electronic queries. Course performance during the pandemic was compared to pre-pandemic offerings to identify any statistical differences. **Results:** Many changes were instituted during the 2020-2021 academic year, and several will be highlighted. A virtual introductory pharmacy practice experience was delivered by faculty; a faculty-led virtual evidence-based medicine advanced pharmacy practice experience was also offered. All didactic, lecture-based courses were delivered in a hybrid format in fall 2020, with all exams administered on campus in test blocks across cohorts. No statistical difference in overall performance in courses was noted in fall 2020; comparison of course performance for spring semester courses will be presented. Resumption of full on-campus learning began in spring 2021. Plans for the 2021-2022 academic year will be shared, including pandemic changes that will be maintained. **Conclusions:** On short notice, faculty adapted their teaching methods to different delivery formats while overcoming logistical and technical difficulties to ensure a quality learning experience was delivered in the safest possible way. Many lessons have been learned, and new opportunities identified.

### **Moving the Needle: COVID-19 Vaccine Initiatives at the Wegmans School of Pharmacy**

Ramil E. Sapinoro, *St. John Fisher College*, Keith DelMonte, *St. John Fisher College*, Kathryn A. Connor, *St. John Fisher College*, Amy Parkhill, *St. John Fisher College*, Christine Birnie, *St. John Fisher College*.

**Objective:** The landscape of the pandemic has demonstrated the vital role that student pharmacists and pharmacy faculty can play to meet the needs of the community to form a culture of trust, increase vaccine confidence, and promote public health in our communities. **Methods:** The vaccine initiatives at the Wegmans School of Pharmacy span five main areas: COVID-19 immunizations, didactic education, community education, community engagement, and the spirit of connectedness. **Results:** COVID-19 Immunization: COVID-19 vaccine clinics in conjunction with the Monroe County Health Department and the United Way POD (point of distribution) vaccine locations, and establishing a pop-up immunization event at a clinic that serves the 'working poor' populations within the city of Rochester. Didactic education: COVID-19 vaccine education introduced into the APhA immunization course, inclusion in therapeutics course sequence, Medical Reserve Corp elective, Medical Missions elective, and APPE elective rotation. Community education: Continuing Education programs, ROC Community Immunity project, Fisher Pharmacy Podcast, campus-wide education sessions and professional

development workshops. Community engagement: Finger Lakes COVID-19 Vaccine Task Force, COVID-19 vaccine sign-ups, vaccine town halls. Spirit of connectedness: Annual WSoP Service Day dedicated to local/community COVID-19 vaccine initiatives. **Conclusions:** Through these collective efforts, the Wegmans School of Pharmacy has moved the needle to promote safe, effective, and equitable COVID-19 vaccines to save lives. Together we educate, advocate, and vaccinate.

### **Necessity is the Mother of Invention: Innovative Responses to COVID-19**

Cathy H. Ficzero, *Belmont University*, Angela Clauson, *Belmont University*.

**Objective:** To describe the lessons learned by faculty while teaching in the COVID-19 pandemic at the Belmont University College of Pharmacy (BUCOP). **Methods:** The authors consulted with BUCOP faculty on teaching innovations utilized in Spring 2020, Fall 2020, and Spring 2021 to identify innovative teaching practices and lessons learned. Innovation was defined as new or transformed pedagogy that ensured student competency while accommodating an online model. **Results:** Innovative practices were identified in several courses including but not limited to the following: Health Assessment, Pharmaceutical Care I, Biomedical Literature for Pharmacy, and Advanced Pharmacy Practice Skills. Student performance was at or above that of previous semesters. Practices that will be continued include breakout groups, telehealth simulations, and peer assessments. **Conclusions:** Many lessons were learned that can be translated to traditional delivery of instruction.

### **Optimizing Small Group and Active Learning in a Remote Setting**

Allison M. Bell, *University of Cincinnati*, Katelyn E. Johnson, *University of Cincinnati*, Emma C. Palmer, *University of Cincinnati*, Karissa Y. Kim, *University of Cincinnati*, Anne H. Metzger, *University of Cincinnati*, Michael A. Hegener, *University of Cincinnati*.

**Objective:** The University of Cincinnati JLW College of Pharmacy embraces active learning in small group settings throughout various courses in the curriculum. In March 2020, when the COVID-19 pandemic transitioned all coursework to a remote setting, faculty were challenged to maintain high quality teaching methodologies in a virtual environment. Courses requiring team-based learning (TBL) and application of skills had the greatest need for creative and accessible methods of delivery. **Methods:** A variety of different methods were employed at the college in an attempt to enhance the online experience. The team gathered

informal feedback from faculty and students engaged in TBL, small-group facilitation, and objective structured clinical examinations to provide qualitative information about delivery methods. **Results:** Faculty reported using a variety of software enhancements in their courses. For quizzes, TBL, and small group assessments, Microsoft “Forms”, Socrative, and Canvas were used most frequently. For active engagement, Kahoot!, Mentimeter, and Educaplay offered gamification of online activities. Microsoft Teams allowed for recording and storing of presentations and activities through their “Stream” application. Additionally, the use of simulated electronic health records via EHR Go allowed for remote charting and patient evaluation. Per student feedback, students felt engaged and participation has been high during this transition to virtual learning. **Conclusions:** Faculty have embraced the challenge to deliver high quality content in small group format while promoting active learning and engagement through use of technology and various software programs. This transition has been successful based on student feedback. While we are eager to resume in person learning, remote learning lessons and techniques will likely continue and evolve in the future.

### **Pharmacy Leadership Within the Community to Support COVID-19 Testing and Vaccination**

Kelsey M. Woods, *Shenandoah University*, Solomon Adams, *Shenandoah University*, Erin Adams, *Shenandoah University*, Robert Kidd, *Shenandoah University*, Jeremy Fox, *Shenandoah University*, Rebecca Andersen, *Shenandoah University*.

**Objective:** Bernard J Dunn School of Pharmacy played an intentional role within the community to prevent the spread of COVID-19. **Methods:** In order to monitor the prevalence of the disease and minimize University-related outbreaks, the School of Pharmacy developed a pooled saliva testing to rapidly and cost-effectively test Shenandoah University students, staff, and faculty. Faculty in the Departments of Pharmacogenomics and Biopharmaceutical Sciences augmented the broad surveillance program with reflexive Oxford Nanopore sequencing of positive samples. The sequencing also included positive samples from the local health-system to provide broader community surveillance of novel and existing variants in the SARS-CoV-2 genome. This effort supported decision-making for the university and local and state health departments. Meanwhile, the Department of Pharmacy Practice supported vaccination efforts in both Winchester and Fairfax, Virginia. **Results:** School leadership provided resources to ensure faculty were prepared to serve and advocated for students to serve as vaccinators. The University’s athletic center was transformed into one of four vaccination pods for the Lord Fairfax Health

District in partnership with Valley Health. Pharmacists, technicians, and student interns from the Winchester campus daily drew up vaccines and administered vaccinations, striving towards a maximum goal of 2500 shots each day starting in January 2021. Faculty encouraged student involvement by supervising student vaccine administration in Winchester. At the Fairfax campus, faculty and students assisted the Inova Health System clinic. At both sites, students assisted in registration, clerical services, delivering vaccines to vaccinators, and answering questions. **Conclusions:** The leadership and service of faculty and students at both campuses were recognized by local news outlets, promoting the importance of pharmacists in vaccination efforts.

### **Pharmacy School Engagement in Crushing the COVID-19 Pandemic**

Amy M. Pick, *University of Nebraska Medical Center*, Allison Dering-Anderson, *University of Nebraska Medical Center*, Ashley Bogus, *University of Nebraska Medical Center*, Victoria Cunning, *University of Nebraska Medical Center*, Kyle Janssen, *Community Pharmacy*.

**Objective:** Timely administration of COVID-19 vaccines has required an all hands-on-deck approach. University of Nebraska Medical Center (UNMC) College of Pharmacy (COP) students were in a unique position to support the earliest COVID-19 immunization initiatives. Here, we describe the training and experiences provided that prepared students for early engagement. **Methods:** Community engagement initiatives, such as immunization clinics, are paramount to the pharmacy curriculum at UNMC. All COP students complete the APhA Pharmacy-Based Immunization training in their P1 year, and many begin vaccinating as pharmacist interns at their place of employment. Additionally, COP students are involved in providing mass immunizations initiatives through Operation Immunization, which provides influenza vaccinations to the campus and community. All pharmacy students complete 40 hours of Introductory Pharmacy Practice Experiences (IPPEs) Patient Care and 16 hours of Professional Development service-learning throughout their first three years in the program. Students write reflections for each activity. COP relies on community partners to achieve the desired learning outcomes. **Results:** The College collaborated with numerous community partners and college-affiliated experiential sites to assist with the administration of COVID-19 vaccines starting in December 2020. The facilitation of events was orchestrated by the Operation Immunization student co-chairs and two faculty members: the faculty advisor for Operation Immunization and the Director of the Office of Experiential Programs. Volunteer requests were sent to

students and immunization-trained faculty. To date, students and faculty have administered vaccines in long-term care facilities, healthcare workers, UNMC students, and the public. Student clinic reflections illustrate a high level of engagement and personal/professional satisfaction. **Conclusions:** Pharmacy schools play an instrumental role in crushing the COVID-19 pandemic. This pandemic has highlighted the importance of the pharmacist in providing public health services.

### **Pharmacy-Led COVID-19 Vaccine Clinics Provided for an Academic Medical Center Campus and Underrepresented Local Communities**

Susan E. Conway, *The University of Oklahoma*, Eric Johnson, *The University of Oklahoma*, JoLaine Draugalis, *The University of Oklahoma*.

**Objective:** The University of Oklahoma (OU) College of Pharmacy led COVID-19 vaccine clinics for our campus and local communities to address the critical and urgent need for mass vaccine distribution and to provide opportunity for our faculty, staff, and students to serve as front-line public health workers to respond to a global pandemic. **Methods:** Based on an 11-year history of leading campus influenza vaccine clinics, two OU College of Pharmacy faculty were appointed to the academic medical center's COVID-19 push partner committee and selected to lead the phase 1 vaccine distribution efforts. Our phase 1 population included medical center employees and health sciences campus faculty, staff, and students with patient care responsibilities. Subsequently, the pharmacy team has focused their efforts on phase 2 patient populations in underrepresented communities. Vaccine was distributed through point-of-distribution clinics beginning within 24 hours of the first vaccine shipment and scheduled based on vaccine allocations. **Results:** In Phase 1, the pharmacy-led vaccine clinics have administered 19,419 vaccines at 40 clinics over a 12-week period. In Phase 2, a total of 1,788 vaccines have been administered within the first month of this effort in 3 clinics at local churches and schools. Collectively, the OU College of Pharmacy has executed the clinics with 100 pharmacy students, 9 post-graduate trainees, 40 faculty, and 30 staff providing a total of 5083 hours of service. The College of Pharmacy has collaborated with 17 administrators from across campus in planning and many health disciplines' students, faculty, and professionals from across the campus in the vaccine delivery. **Conclusions:** The OU College of Pharmacy has successfully implemented and led COVID-19 vaccine clinics for meaningful contributions to the pandemic response.

### **Population Health Impact of a Metropolitan Pharmacy School Engagement in COVID-19 Surveillance and Vaccine Initiatives**

Michael Liu, *Touro College of Pharmacy-New York*, Henry Cohen, *Touro College of Pharmacy-New York*, Rebecca Kavanagh, *Touro College of Pharmacy-New York*.

**Objective:** Colleges of Pharmacy have knowledgeable and skilled labor and resources to provide COVID-19 surveillance, education, and vaccination services for optimal population health. Engagement of urban Colleges of Pharmacy in such endeavors is rarely published. Our primary objective is to examine and compare the positivity rate of our surveillance service for Touro University and the diverse population we serve to the corresponding general population of New York City and State county positivity rate. Our secondary objective is to provide insights into vaccination efforts made by our college. **Methods:** The COVID-19 surveillance team comprises of pharmacy deans, one of whom is a state-registered lab director, faculty, and alumni. We utilized the Abbott BinaxNOW rapid antigen test. The vaccination team similarly includes pharmacy deans and faculty, yet with the addition of pharmacy fellows and students, all of whom are state-registered immunizers. Nominal data was analyzed with the chi-square test of independence. **Results:** From October 2020 to March 2021, our surveillance team collected a total of 3,308 specimen from a total of 78 events conducted across 18 sites located within 7 counties. Town or city population density ranges from 6,726-to-8,175,133, with median household income from \$22,671 to \$107,344. Our surveillance's average positivity rate for COVID-19 was 0.32% (range: 0%-5.77%), compared to the average county rate of 4.29% (range: 0.70-8.5%) in the same time period ( $p < .01$ ). From February 2021-to-March 2021, a total of 810 vaccines were administered at 6 events. The number of students and fellows on-site and involved in these vaccination events average at 5 (range: 2-9) **Conclusions:** Through early recognition of COVID-19 and education and vaccination, Urban Colleges of pharmacy play a crucial role in providing optimal population health during the pandemic.

### **Remote Advanced Practice Pharmacy Experiences (APPEs): Pandemic Innovation Gives Rise to Future Opportunities**

Pamela L. Smithburger, *University of Pittsburgh School of Pharmacy*, Lawrence Kobulinsky, *University of Pittsburgh School of Pharmacy*, Susan Skledar, *University of Pittsburgh School of Pharmacy*, Michael W. Perry, *Duquesne University*, Madeline Kreider, *University of Pittsburgh School of Pharmacy*, Randall Smith, *University of*

*Pittsburgh School of Pharmacy, Amy Seybert, University of Pittsburgh.*

**Objective:** We aimed to develop an innovative and scalable remote APPE that included direct patient care, simulation augmentation, and cross-school collaboration that improved student knowledge and critical thinking, enabled on time graduation, and had post pandemic utility. **Methods:** PittPharmacy faculty, a graduate student, and staff created a remote acute care APPE that included direct patient care, simulation augmenting knowledge, interprofessional communication, scalability through pharmacy resident co-preceptor expansion, and a cross-school COVID-19 collaboration. Student patient-centered clinical and problem-solving skills, knowledge base, communication, and confidence were assessed through pre/post case-based multiple-choice examinations, intermittent clinical examinations (ICE), and anonymous surveys. **Results:** Included students in each cohort were: 17 initial offering cohort; 34 co-preceptor cohort; 82 cross-school collaboration cohort. Clinical skills, problem-solving skills and knowledge base increased from baseline for all cohorts. The written exam scores (median[range]) were: initial offering cohort 38 (29-47) vs 40.5 (31-51)  $p < .001$ ; co-precepted cohort 41 (31-52) vs 50 (43-55),  $p < 0.001$ ; collaboration cohort 21.2 (19-23) vs 26 (23-28);  $p < .001$ . Cohort scores (median [range]) for the ICE were: initial offering 38 (23.5-60.5) vs 65.25 (54-70);  $p < .001$ ; resident expansion 36 (18-55) vs 59.5 (43-70),  $p < .001$ ; collaboration 33 [28 – 36] vs 36.5 [29.5 – 43.5],  $p = .004$ . Student confidence (median [range]) increased in all cohorts from baseline (initial offering 5 [1.2 – 8.4] vs 7.1 [5 – 9],  $p < 0.001$ ; resident expansion 5 [1-8] vs 6.1 [3.5-9.5],  $p < .001$ ; collaboration 3 [2-4] vs 6 [4-7],  $p < .001$ ). **Conclusions:** A remote APPE afforded on-time graduation and advanced student pharmacist skills and knowledge. It was expandable through resident co-precepting and was further grown through cross-school collaboration. Knowledge augmentation with simulation, bandwidth expansion with resident co-preceptors, and cross-school collaborations will be used for future onsite rotations.

### **Responding to a Global Pandemic: Southwestern Oklahoma State University College of Pharmacy's COVID-19 Vaccine Initiatives**

Stephen D. Drinnon, *Southwestern Oklahoma State University*, Krista Brooks, *Southwestern Oklahoma State University*, Randy Curry, *Southwestern Oklahoma State University*, Sally Drinnon, *Southwestern Oklahoma State University*.

**Objective:** To describe the initiatives led by Southwestern Oklahoma State University College of Pharmacy (SWOSU-COP) in providing COVID-19 vaccines to rural

areas. The COVID-19 global pandemic has raised many challenges in the care of our patients, particularly in rural western Oklahoma. SWOSU-COP and its Rural Health Center (RHC) have responded through engagement in various vaccine initiatives **Methods:** SWOSU-COP and the RHC's primary goal is to maximize outreach and availability of the COVID-19 vaccines to rural Oklahomans. Through early planning and joint ventures with our local and state health departments, the RHC and SWOSU-COP faculty and students participated in several rural immunization clinics as soon as COVID-19 vaccines became available. The success of these clinics led to the opportunity for interprofessional collaboration. Cooperating with the local health department, the SWOSU-COP and the RHC began hosting weekly large vaccination pods on campus with faculty and students from pharmacy, nursing, and allied health all working together to provide COVID-19 vaccine services to the community. Administration, faculty, staff, and students from all departments on campus provided support in non-medical roles at the immunization clinics. **Results:** Oklahoma continues to boast one of the highest vaccination rates in the country with approximately one-third of eligible patients having received at least one shot. Oklahoma will enter phase 4, vaccination availability to all eligible adults, on March 29, 2021. SWOSU-COP involved clinics have helped vaccinate close to 20,000 individuals thus far. **Conclusions:** Providing vaccination pod clinics in small rural communities and businesses utilizing one-dose vaccines may be the next step in SWOSU-COP's response to the global pandemic. The RHC and the SWOSU-COP faculty and students will continue to adjust and adapt to our state's ever-changing healthcare needs.

### **Responding to the COVID-19 Pandemic: Vaccine Initiatives Undertaken at a School of Pharmacy**

Karl Hess, *Chapman University*, Albert Bach, *Chapman University*, Neeloufar Fakourfar, *Chapman University*, Sharon Xavioer, *Chapman University*, Maryam Zeineddine, *Chapman University*, George Zikry, *Chapman University*, Jeff Goad, *Chapman University*.

**Objective:** To identify, quantify, and describe the COVID vaccine and vaccination activities that faculty, students, and external preceptors at this School of Pharmacy have undertaken during the COVID-19 pandemic. **Methods:** An anonymous internet-based survey was developed by study authors and administered to Pharmacy Practice and Biomedical and Pharmaceutical Sciences faculty members as well as to students and to external preceptors affiliated with this institution. The survey was designed to collect COVID-19 vaccination activities that individuals have been involved with, including, but not limited to: organizing

and/or volunteering at vaccination clinics, conducting COVID-19 related research, and training student pharmacists at the rotation site. Individuals were instructed to select all activities that they have been involved with since the start of the pandemic. Free text responses were used to help capture details for each activity. **Results:** Overall, 82 preceptors, 35 students, and 22 faculty responded to our survey. The primary activity reported amongst faculty and students was volunteering at a COVID-19 vaccination clinic (30% and 60%, respectively). The primary activity reported by rotation site preceptors was training students on either their Introductory or Advanced Pharmacy Practice Experiences (43%). Overall, 28 respondents (20%) reported that they had yet to participate in a COVID-19 vaccination activity, but that 54% (n=15) of them have plans to participate in a future event. **Conclusions:** As the local supply chain for COVID-19 vaccines improves and as more groups of individuals become eligible for vaccination, more opportunities will exist to organize COVID-19 vaccination events and administer vaccines to the public.

### **Responding to the Pandemic – UConn’s Engagement in the Connecticut Vaccine Roll-out**

Jill M. Fitzgerald, *University of Connecticut*, Jeannette Wick, *University of Connecticut*, C Michael White, *University of Connecticut*, Joanne Nault, *University of Connecticut*, Diana Sobieraj, *University of Connecticut*.

**Objective:** Connecticut is consistently in the top 5 states for the percent of its’ population receiving the COVID vaccine. The faculty, students, and staff of the University of Connecticut School of Pharmacy (UConn SoP) supported major vaccination efforts in a multipronged approach to educate healthcare providers, reduce vaccine hesitancy, and directly immunize patients, including those with health disparities. **Methods:** The UConn SoP (students, faculty, staff) partnered with the Connecticut Department of Public Health to provide training and certification of allied health vaccinators (dentists/hygienists, EMTs, veterinarians) and supported vaccine clinics statewide including a traveling FEMA van. Additionally, the UConn SoP produced YouTube videos in a variety of languages to surmount vaccine hesitancy by answering common questions. Finally, we developed and disseminated nationally a written free pharmacist CE activity to refresh pharmacist’s technique. These activities allowed students to professionally engage with the public and future colleagues. **Results:** Vaccine Clinic Hours – >2000 to date New Professionals Educated – >800 to date YouTube – 80 videos in 5 languages – >5,100 views to date # of pharmacists and technicians who took the CE – >1200 to date Students Involved in the Effort – ~150 students (50% of our student body) **Conclusions:** UConn SoP has supported

major COVID vaccine efforts in a variety of creative ways and continues to assist Connecticut in leading the percent of the population being vaccinated nationally.

### **Roles of Pharmacy Students and Preceptors in a University Run Interprofessional Community-Based COVID-19 Vaccination Clinic**

Jennifer R. Courtney, *California Northstate University*, Bin Deng, *California Northstate University*, Erika Titus-Lay, *California Northstate University*, Jeffrey Nehira, *California Northstate University*, Kayla McCann, *California Northstate University*, Kimberly Vongnalith, *California Northstate University*, Ashim Malhotra, *California Northstate University*.

**Objective:** Preceptors’ contributions in pharmacy students’ practice-readiness is immeasurable. However, the COVID-19 pandemic negatively impacted the availability of precepted activities in the community setting. We designed and implemented a community-serving COVID-19 vaccination clinic which provided students and preceptors with opportunities for patient-centered care activities in an interprofessional practice setting. In addition, our University Vaccination Clinic (UVC) served as a rotation site for Introductory Pharmacy Practice Education (IPPE) Specialty and Advanced Pharmacy Practice Education (APPE) rotations, and an interprofessional education and practice (IPEP) site for pharmacy and medical students. We also integrated our Co-curricular Learning Outcomes (CoCuLO) with UVC. Here we describe the design and implementation of the UVC and the roles of pharmacy students and preceptors. **Methods:** Pharmacy students from all four academic years were recruited to staff UVC 5 days per week. Pharmacy students included IPPE, APPE, IPEP students, and those completing CoCuLo requirements. Logistically, UVC was operationalized through five patient care stations: (1) patient check-in and pre-screening, (2) patient COVID-19 vaccine information counseling, (3) drawing of vaccine, (4) immunization, and (5) post-vaccination monitoring. **Results:** From 01/06/2021 to date over 27,000 doses were administered at UVC, estimated at 7% of vaccination volume in Sacramento County. While the clinic remains in session, it is likely that this data will only increase. **Conclusions:** Installation, management, operationalizing, and assessment of UVC was a challenging but rewarding experience for medical and pharmacy faculty, staff, and students. UVC offered immediate community-service opportunities for healthcare professionals at a time of urgent need. Our clinic brought much needed attention to the impact that well-trained and practice-ready pharmacy and medical students can have on the provision of quality care to diverse and otherwise underserved populations.

### **SAFE: Saliva-based SARS-CoV-2 testing for the University of South Carolina and the community**

Michael D. Wyatt, *University of South Carolina*, Carolyn Banister, *University of South Carolina*, Philip Buckhaults, *University of South Carolina*, Michael Shtutman, *University of South Carolina*, Daniel Brown, *University of South Carolina*, Julie Sease, *University of South Carolina*, Stephen Cutler, *University of South Carolina*.

**Objective:** In the earliest days of the SARS-CoV-2 pandemic, faculty in the University of South Carolina (UofSC) College of Pharmacy jumped to action putting their expertise to work helping mitigate the effects of the pandemic. **Methods:** Faculty began a collaboration in March of 2020 with Dr. Helmut Albrecht, an infectious disease expert at Prisma Health Midlands and the UofSC School of Medicine. They began SARS-CoV-2 testing by RT-PCR under a research IRB protocol for Prisma hospital staff. In parallel, our College, under the leadership of Dean Cutler, established and now operates a CLIA lab (with pending FDA approval) called the Diagnostic Genomics Lab. This lab, headed by Dr. Carolyn Banister, detects the novel coronavirus directly in saliva. Results are almost always reported the same day. **Results:** As the core of a plan to operate UofSC safely, thus far, the Diagnostic Genomics Lab has performed over 120,000 saliva-based PCR tests detecting the SARS-CoV-2 virus for UofSC faculty, staff, and students. Over 50,000 tests have been performed in 2021 alone. Testing has been extended to the Aiken campus of UofSC, Winthrop University in Rock Hill, South Carolina State University in Orangeburg, and with offers made to 15 other institutions of higher learning. Through extension of testing to smaller schools and remote campuses, the college is helping address health disparities relative to SARS-CoV-2 detection. **Conclusions:** Through establishment of the Diagnostic Genomics Lab, the UofSC College of Pharmacy positively impacted, and continues to positively impact, the safety of our university of over 30,000 faculty, staff, and students; the City of Columbia; and the State of South Carolina. In this way, the college contributes to the ongoing health and well-being of our community.

### **School of Pharmacy Pandemic Immunization Response: Preparation, Partnership, Performance**

Tiffany Hatcher, *Duquesne University*, Jennifer Elliott, *Duquesne University*, Elizabeth Bunk, *Duquesne University*, Pamela Koerner, *Duquesne University*, Gale Garmong, *Duquesne University*, Janet Astle, *Duquesne University*.

**Objective:** The purpose of the School's engagement in COVID-19 immunization initiatives is to support vaccine administration in underserved communities by providing

resources, education, and coordination of a vaccine point of dispensing (POD). **Methods:** Preparation included providing education and training to student pharmacists and pharmacists in anticipation of vaccine approval, advocating for a government waiver allowing student pharmacists to administer vaccines, developing a coordination plan for vaccine administration, and creating a platform for communication to students, faculty and staff regarding volunteer opportunities. At the same time, the School capitalized on current and new community partnerships to support vaccination delivery to diverse patient populations throughout the region. Locally, the School partnered with Nursing, Health Sciences, and the Office of Diversity and Inclusion to support the School of Pharmacy Center for Integrative Health and its local vaccination POD with the County Health Department. **Results:** These initiatives resulted in training over 350 pharmacists between February 2020 – March 2021 and over 150 student pharmacists between February 2020 – February 2021 utilizing the APhA Pharmacy Based Immunization Delivery Certificate Program. Trainings attracted participants nationally and internationally. Additionally, we supported 10 independent pharmacies, 5 health systems, 4 federally qualified health centers, 8 senior high rises, 5 long term care facilities and a School coordinated POD. **Conclusions:** The School successfully deployed resources to proactively train pharmacist and student pharmacists to support COVID vaccine needs. We also utilized existing and new regional partnerships to positively impact vaccine administration with a focus on underserved communities. These initiatives provided student pharmacists the opportunity to participate in vaccine administration and impactful community engaged learning experiences that align with curricular educational outcomes including problem solving, patient education, advocacy and interprofessional collaboration.

### **Schoolwide Response to COVID-19 Pandemic with Development and Implementation of Integrated Vaccination Clinics**

Gretchen Garofoli, *West Virginia University*, Ashleigh L. Barrickman, *West Virginia University*, Marina Galvez Peralta, *West Virginia University*, William Petros, *West Virginia University*, Angela Goodhart, *West Virginia University*, Heather Johnson, *West Virginia University*, Krista Capehart, *West Virginia University*, Betsy Elswick, *West Virginia University*.

**Objective:** To describe best practices of developing, establishing, coordinating, and facilitating COVID-19 vaccination clinics. **Methods:** In response to the needs of the state, the West Virginia University School of Pharmacy (WVU SoP) team developed a plan to implement COVID-

19 vaccination clinics for faculty/staff/students, long-term care facilities and the public. Anonymous surveys were distributed to community partners and healthcare/long-term care facilities to elicit feedback, and to faculty/staff and students to determine perceptions from a volunteer perspective. Data were analyzed in aggregate. **Results:** By March 29th, over 58 vaccination clinics have been organized and implemented by WVU SoP. Partnerships have been developed with 11 facilities/organizations, with more than 6,700 vaccines administered. Students have contributed over 1,000 service hours at vaccine clinics. Faculty and staff surveys indicate that most have served in multiple roles, including immunizers (58%), student supervisors (53%), vaccine preparation (58%) and registration (29%). Motivations to volunteer included serving the community (100%) and achieving a sense of purpose (65%). Eighty-two percent were not relieved from work-related responsibilities, and 41% felt this responsibility increased their stress level. Seventy percent of faculty noted these clinics improved student-faculty interactions. Students were involved in vaccine preparation, registration immunizing, and post-vaccine monitoring. Retrospective pre-post student surveys revealed statistically significant differences in confidence regarding talking to patients about vaccines ( $p < .0001$ ), preparing ( $p = .0002$ ), administering ( $p < .0001$ ), and monitoring ( $p = .0005$ ). Students' reasons for volunteering included serving the community, obtaining clinical experience, need for community service hours and opportunities to get vaccinated. Data collection is ongoing. **Conclusions:** WVU SoP successfully implemented multiple vaccine clinics in response to the COVID-19 pandemic. Student involvement was incorporated to enhance learning experiences while protecting the public, faculty/staff and long-term care residents in our state.

### **Social Media as a School Well-Being Tool During COVID-19**

Ryan E. Owens, *Wingate University*, Shawn R. Taylor, *Wingate University*, Sarah A. Nisly, *Wingate University*.

**Objective:** To describe the use of a school social media platform to promote well-being activities among students and faculty/staff during remote learning of the pandemic **Methods:** A school Instagram account was managed by a group of faculty for 6 weeks. Each week, different daily wellness themes were shared and participation by followers encouraged through quizzes, polls, or reposts. The Instagram stories and posting platforms were used routinely and select posts were also shared via Facebook. A new hashtag was created and promoted to encourage additional posting and community building. Video stories were also shared of faculty expressing their mental/physical health challenges

and subsequent coping mechanisms during COVID-19. **Results:** During the 6 weeks of all virtual learning in spring 2020, 280 stories and 23 posts were shared via Instagram. Shared stories included promotion of cardiovascular exercise, weight training, yoga, music, media, gratitude, recognition, positive thinking, coping, and games. Overall, 20 different faculty and staff were involved in sharing video stories to promote well-being. Of the 13 posts also shared to Facebook, a total of 10,429 people were reached. **Conclusions:** School social media platforms can be used to regularly connect virtually during times of crises. Promoting well-being activities can help engage students and faculty/staff to ensure they are focusing on their own well-being. While social distance regulations remain in place for the foreseeable future, pharmacy programs should consider using social media as a virtual well-being tool for both student and faculty/staff engagement.

### **Spanning the State: COVID-19 Vaccination Efforts Provided by Students at the University of North Carolina**

Nicole R. Pinelli, *University of North Carolina at Chapel Hill*, Greene Shepherd, *University of North Carolina at Chapel Hill*, Kamakshi V. Rao, *University of North Carolina Medical Center*, Stephanie N. Kiser, *University of North Carolina at Chapel Hill*, Wendy C. Cox, *University of North Carolina at Chapel Hill*.

**Objective:** To describe intentional collaborations developed by the UNC Eshelman School of Pharmacy to meet the public health needs of the state around vaccine distribution during the COVID-19 pandemic. **Methods:** Students complete the American Pharmacists Association Pharmacy-Based Immunization Delivery Certificate Training Program during the fall semester of their first professional year. Two large COVID-19 vaccination efforts which serve a large part of North Carolina's population in two different regions of the state were implemented. Efforts in Chapel Hill initially supported vaccination of health care workers followed by expansion to a UNC Health System mass vaccination site serving eligible community members across the Triangle Region of North Carolina. In the Asheville Region, students and faculty supported community-based vaccinations in collaboration with the Buncombe County Health Department. **Results:** Student pharmacists have demonstrated a strong sense of civic responsibility and interest in contributing to COVID-19 vaccination efforts serving predominately in vaccine preparation and/or administration roles. Since December 2020, a total of 467 and 44 shifts representing 3,736 and 494 student hours of COVID-19 vaccine distribution service were provided by students in the Chapel Hill and Asheville Regions,

respectively. Students have prepared and/or administered over 55,000 doses in the Chapel Hill Region and over 4,200 doses in the Asheville region. Ability to scale up vaccination efforts quickly, refinement of scope of practice for student pharmacists, integration into required experiential or voluntary co-curricular pathways, and optimization of workflows have been realized. **Conclusions:** An intentional collaboration between the UNC Eshelman School of Pharmacy and two key regional practice partners addressed a public health need by expanding the number of COVID-19 vaccinations prepared or administered by student pharmacists to at-risk North Carolinians.

### **St. John's University College of Pharmacy and Health Sciences Engagement in COVID-19 Activities**

Christine Chim, *St. John's University*, John Conry, *St. John's University*, Maria Mantione, *St. John's University*, William Maidhof, *St. John's University*, Kathryn Hutchinson, *St. John's University*, Luis G. Manzo, *St. John's University*, Russell DiGate, *St. John's University*.

**Objective:** This poster will describe the COVID-related outreach activities by the faculty and students of the College of Pharmacy and Health Sciences. **Methods:** In light of the COVID-19 pandemic, St. John's University (SJU)'s College of Pharmacy and Health Sciences (CPHS) Urban Institute developed the CROSS initiative ("COVID Health Resource and Outreach Service Program of St. John's University). In collaboration with several stakeholders within SJU, along with the New York City Department of Health and Mental Hygiene, CPHS faculty and students participate in a university-wide COVID Immunization Initiative. An interprofessional Vaccine Planning & Operations committee oversees the campus initiative. Subcommittees include policy development, training, public relations, scholarship, service, and interprofessional education. The CROSS initiative also oversees COVID testing that is offered to the SJU community. Faculty and student COVID-related efforts outside the university are also being documented on a rolling basis, including those assigned through employment, experiential education, and volunteering. **Results:** Approximately 30 faculty and over 300 student interns are certified to administer COVID vaccines to the SJU community. Vaccine activities include but are not limited to compounding, administering vaccines, education, screening, data entry, observation post-vaccination, and appointment scheduling. CPHS faculty and students are involved with additional COVID vaccine and testing efforts through their respective experiential education sites, employers, and volunteering. **Conclusions:** The university vaccine initiative lends many scholarship opportunities as well as student learning and service experiences. Students are expected to

gain unique experiences through participation in COVID vaccine activities. Patient satisfaction and data on all student involvement in COVID-related efforts will be presented. Lessons learned from the campus initiative will be extended to future vaccination efforts for the SJU community and the community at large.

### **Standardizing the Process of Proctoring Virtual Exams**

Karleen Melody, *University of the Sciences*, Lisa Charneski, *University of the Sciences*.

**Objective:** To develop a curriculum-wide, standardized process for administration of virtual examinations. **Methods:** Since the start of the pandemic, we have had to quickly pivot from on ground to virtual exams multiple times. Changes in technology and procedures utilized by course faculty varied and resulted in confusion for students and faculty highlighting the need for standardization of virtual exam administration. Available technology solutions were evaluated based on cost, ease of use, administrative workload, compatibility with Examsoft, and the ability to maintain exam integrity. Ultimately, Zoom was selected to proctor assessments throughout the curriculum. An open forum style session was held for all faculty and proctors who had previously participated in virtual exams to gather effective techniques used and challenges encountered. The input was utilized to create the standardized final process. **Results:** A manual was developed for course coordinators and proctors as well as a companion document for students. A Google Sheet template was created for each professional year, which was used as a virtual "seating chart". This was then copied and individualized for each course. A training video followed by a synchronous Zoom session was held at the beginning of the semester for proctors and course coordinators to discuss the process, provide associated documents, and clarify responsibilities. By the end of the spring semester we will have administered over 60 exams using this model without any incidents of academic dishonesty identified. **Conclusions:** We successfully implemented a curriculum-wide, standardized process for the administration of virtual examinations, which may be a model that other institutions could adopt. This process will remain useful post-pandemic for make-up exams and accommodating other illness and scheduling related challenges.

### **Staying in TUNE: Creating the Best Student Experience During a Challenging Time**

Susan L. Mercer, PhD, *Lipscomb University*, Sarah P. Collier, *Lipscomb University College of Pharmacy*, Jonathon

D. Pouliot, MS, PharmD, BCPS, *Lipscomb University*, Todd Beard, MEd, *Lipscomb University*, Jeff Lee, PharmD, FCCP, *Lipscomb University*.

**Objective:** Pharmacy education faced challenges during the COVID pandemic which required a different “TUNE” in our teaching methods, student engagement, and course coordination strategies. Professional first year pharmacy (PY1) students entered a new, rigorous training program while experiencing pivots in traditional teaching approaches and protocols with limited face-to-face interactions. It was critical to design and deliver the best student experience possible to ensure their academic success during a challenging time. **Methods:** An interdisciplinary group of PY1 course coordinators worked alongside Academic Affairs in Summer 2020 to construct a set of unifying principles and strategies to streamline the overall academic schedule, course material packaging, instructor accessibility, and develop cohorting strategies for HyFlex content delivery. The team was efficient and stayed intact for the Fall 2020 semester, meeting once weekly, to collectively work through issues as they arose. **Results:** The collaborative team represented a novel synergy between pharmaceutical sciences and practice faculty, with a variety of experience, at the course coordinator level. The following benefits were achieved through continuous interactions: (1) Troubleshoot collaborative solutions and collective wisdom; (2) Unified student experience – delivery and course material packaging; (3) Novel synergy and support among faculty in both science and practice; and (4) Early student intervention – academic challenges and wellbeing. **Conclusions:** The team was created to benefit the pharmacy students and curricular delivery; however, the strengthened relationships between faculty conferred long-term benefits to each department and the College. Ultimately the shared space of collective wisdom, troubleshooting, peer mentorship, and early student needs identification brought professional connection and encouragement during a challenging time.

### **Student Reported Experiential Activities During COVID-19: A Focus on Hybrid and Virtual APPEs**

Debra Copeland, *Northeastern University*, Jenny Van Amburgh, *Northeastern University*, John Orr-Skirvin, *Northeastern University*, Michael J. Gonyeau, *Northeastern University*, Lorelei Ventocilla, *Northeastern University*, Miriam A. Mobley Smith, *Northeastern University*.

**Objective:** The COVID-19 pandemic necessitated a modification to experiential education experiences offered by Colleges/Schools of Pharmacy. Stakeholders needed to brainstorm, pivot and collaborate with sites and preceptors

to execute changes and ensure the delivery of advanced pharmacy practice experience (APPE). Northeastern University, Bouve College – School of Pharmacy created a student-based inventory collection tool to capture activities completed during APPEs throughout the COVID-19 pandemic. Data collected were examined periodically throughout the pandemic to ensure APPE educational soundness. **Methods:** Starting May 2020, a seven-question end-of-APPE inventory was created and deployed via E\*Value, to all students on every rotation. Prospective data collected included number of weeks completed virtually, utilization of prior experience, access to electronic medical records, list of 20 APPE activities and time spent. In August 2020, the inventory was refined/expanded to focus more specifically on quantification of patient interactions and time spent on pre-rounds/rounds and patient education. **Results:** From May 1, 2020 through March 19, 2021, 509 unique student responses covered six APPE blocks of time. Students reported 46% of their APPE was delivered 100% virtual, while 35% reported 100% in person and 19% reported hybrid (ie, 1-5 weeks virtual). Student self-reported activities have been pooled into 3 foci: patient care related (36.1%), evidence-based medicine (21.1%) and learning (15.1%). Students reported on utilizing work and school prior experience to successfully complete the APPE. Almost all students (99%) reported working in excess of 35 hours per week on APPEs. **Conclusions:** Data collected from students revealed that despite the location of APPE (ie, hybrid or virtual) students engaged in activities that are consistent with traditional APPE experiences.

### **Student/Faculty Perceptions of Pandemic Transition, and a Fall 2021 Guiding Framework for Administrative Leadership**

Lisa Lebovitz, *University of Maryland*, Kimberly Illingworth Plake, *Purdue University*, Amber Clemmons, *The University of Georgia*, Michael J. Fulford, *The University of Georgia*.

**Objective:** To describe PharmD student and faculty perceptions of how well administrative leadership at large research-intensive colleges/schools of pharmacy navigated the quick transition to remote learning and operations, and to consider future opportunities for curriculum redesign and operational changes that mitigate educational inequalities and maximize the learning experience. **Methods:** Two online surveys explored the impact on faculty and pharmacy students during the transition to full remote learning, and the clarity and amount of communication from the college/school. **Results:** Surveys were completed by 1803 students across 13 institutions and 279 faculty at nine institutions. Thematic analysis of feedback led to the development of a

Guiding Framework based on Schlossberg's Four S's (situation, self, support, and strategies) to assist administration in planning a Fall 2021 return to campus. This included understanding the situation (eg, the institution's resources and unique characteristics), understanding the student's ability to cope (anxiety/stress management, home life and technology challenges, and keeping up with schoolwork), and refocusing institutional support systems to meet student needs for progression and achievement of outcomes. Faculty had similar challenges and concerns, as well as increased workload and lack of research progress or professional development. CAPE domains can serve as a guide to prioritize resources, curriculum delivery, and co-curricular support. **Conclusions:** Permanent changes in PharmD logistics are warranted to allow for greater flexibility and integrate the most effective aspects of remote learning. A student-centered, transformative, and blended learning approach to the "new normal" must be holistic and supportive of faculty to help meet the needs of all pharmacy students, while considering circumstances that impact their ability to cope, such as family and financial obligations, physical health, and psychological emotional well-being.

### **Students' Mental Health and Well-Being During the COVID-19 Pandemic**

Lana Sherr, *University of Maryland Eastern Shore*, Amna Paracha, *University of Maryland Eastern Shore*, Hoai-an Truong, *University of Maryland Eastern Shore*, Lynn Lang, *University of Maryland Eastern Shore*.

**Objective:** The COVID-19 pandemic caused an unprecedented impact on educational institutions. With no clear direction or timeline, students faced an ongoing wave of changes primarily due to distance education and virtual learning. The aim of this study is to assess the extent to which students' mental health and well-being may have been impacted during the pandemic and determine opportunities and resources for support. **Methods:** A survey was adapted from the Center for Disease Control and Prevention (CDC) Global School-Based Students' Health Survey. It consists of 15 questions, including 3 open-ended questions, and was administered to a total of 143 students (126 pharmacy and 17 physician assistant students) in the fall 2020 semester. Demographic data was collected, and descriptive statistics were utilized for data analysis. **Results:** Thirty-four out of 143 students responded to the survey, yielding a 24% response rate. Of the 34 responses, 31 students (91.2%) felt stressed at least 1-2 days a week during the COVID-19 pandemic. Reported causes of significant stress were academic work (97.1%), fear of the unknown (61.8%), and technology/internet issues (50%). Participants noted listening to music, praying, exercising, and interacting with

friends as the most frequent mechanisms used to cope with stress. **Conclusions:** The COVID-19 pandemic has presented many challenges to students and adversely impacted their mental health and well-being. The findings of this study highlight the need to develop interventions and strategies to address these issues.

### **Supporting COVID-19 Vaccine Rollout Before Charter Class Arrives: The University of California, Irvine Experience**

Alexandre Chan, *University of California, Irvine*, Larry Lovett, *University of California, Irvine*, Erin Knox, *University of California, Irvine*, Stephanie Dailey, *University of California, Irvine*, Martin Torres, *UC Irvine Medical Center*, Robert Eastin, *UC Irvine Medical Center*, Melanie Joe, *UC Irvine Medical Center*, Jan Hirsch, *University of California, Irvine*.

**Objective:** The University of California, Irvine (UCI) School of Pharmacy & Pharmaceutical Sciences (SPPS) is a newly established public pharmacy school in the Orange County-Los Angeles region. The SPPS is committed to supporting the rollout of COVID-19 vaccines using multiple approaches. With a limited number of founding clinical faculty, we hypothesized that we could have a meaningful impact even before we enrolled our first cohort of pharmacy students. **Methods:** SPPS organized three initiatives, i. pharmacy force collaboration, ii. interprofessional education, and iii. community outreach. Regarding pharmacy force collaboration, pharmacists from the SPPS and UCI Medical Center (UCIMC) Pharmacy Department, most previously unknown to each other, worked closely to establish vaccine preparation and administration services at a campus-based vaccine clinic. Interprofessional education activities at the clinic were organized by pharmacy, nursing and medical faculty. Community outreach to educate the public on the fundamentals of COVID-19 vaccines included SPPS clinical and pharmaceutical sciences faculty. **Results:** Between January 15 and March 29, 2021, 46,681 vaccine doses were prepared and administered at the clinic, with over 30 student pharmacists from University of California San Diego and University of California San Francisco administering vaccines under SPPS faculty and UCIMC pharmacist supervision. Over 20 medical and nursing students were trained to prepare vaccines through interprofessional education. SPPS also presented two public webinars on COVID-19 vaccines, with 390 attendees, encompassing the scientific basis, clinical trials, delivery and administration issues to educate and reassure the public. **Conclusions:** Through a number of initiatives to support COVID-19 vaccine rollout, UCI SPPS impacted the culture of collaborative pharmacy practice among faculty and health system

pharmacists, interprofessional education, and community outreach prior to matriculation of the charter class in September 2021.

### **Supporting Student, Faculty, and Staff Well-Being During a Pandemic**

McKenzie Shenk Grinalds, *Cedarville University*, Nathanael Smith, *Cedarville University School of Pharmacy*, Angela Wilson, *Cedarville University*, Erin Ashley Ballentine, *Cedarville University*, Jessica Hall, *Cedarville University*, Samantha Gross, *Cedarville University*.

**Objective:** The COVID-19 pandemic impacted operational aspects of pharmacy schools but also significantly impacted the mental health and well-being of faculty, staff, and students. Pharmacy students have identified factors that impact their well-being in school, such as workload, learning environment, and meaningful learning experiences. A paucity of literature exists regarding the impact of the pandemic on faculty/staff well-being; however, changes in technology, limited breaks, and minimal face to face interactions may contribute to overall faculty/staff burnout and poor well-being. Thus, the objective of this project is to describe one school's efforts in supporting well-being. **Methods:** Many frameworks exist to describe personal resilience and wellness (RW). One such framework is known as the Four Wheels of Health – physical, spiritual, emotional, and relational. As a faith-based institution, Cedarville University School of Pharmacy (CUSOP) used this framework to structure RW initiatives for faculty, staff, and students. **Results:** The faculty/staff RW committee provided weekly encouraging emails to address spiritual and emotional concerns in spring 2020 during online learning. In fall 2020, students launched a social media campaign to promote RW strategies related to physical health and stress management. In spring 2021, students established their own RW committee to oversee student-related RW efforts and collaborated with the social media coordinator to provide additional “Four Wheels” materials. Since no Spring Break was scheduled, faculty, staff, and students planned activities, including themed snacks, art and dog therapy, rock climbing, and community outreach. Finally, a CUSOP food pantry was created for students experiencing food insecurity. **Conclusions:** Students, faculty, and staff enacted various RW initiatives to address multifaceted needs of well-being in the setting of a pandemic.

### **Survey Says ... Mixed Feelings with Transition to Virtual**

Michelle Sahr, *Ferris State University*, Kyle Schmidt, *Ferris State University*.

**Objective:** To evaluate the impact of an abrupt transition to virtual delivery in March of 2020 on teaching and assessment in the didactic curriculum. **Methods:** Three surveys were conducted to evaluate the transition. In April 2020, a parallel survey was sent to students and faculty to assess the effectiveness of virtual skills evaluation. In May 2020, students were surveyed to assess the impact of the transition to virtual learning. **Results:** From the virtual assessment survey, students perceived the assessment as effective and appropriate but favored in-person evaluations. Faculty had similar perceptions with a more favorable outlook on virtual assessments. From the virtual learning survey, pre-recorded lectures were noted to be more useful for learning compared to real-time video delivery. Some students did note a strong preference for live sessions. Academic dishonesty was believed to have increased in this instruction period by 25% of students. Disabling of backward navigation was perceived to negatively affect exam performance by 76% of the students surveyed. Transparent communication was also noted to be important to allow student flexibility to work and volunteer as the need for pharmacy services were increasing in communities. **Conclusions:** The surveys were instrumental in planning for fall 2020, leading to a predominant HyFlex model delivery to meet the needs of all students. Although our College was able to transition the curriculum quickly to virtual education in spring 2020 and operate in HyFlex for most of fall 2020, significant questions remain regarding the transition back to pre-pandemic delivery of the curriculum and what the future of pharmacy education should look like.

### **Sustaining Curricular Delivery: Then, Now, and the Future**

Chad W. Martell, *Regis University*, Cassandra Stroup, *Regis University*, Allyson Spence, *Regis University*, LaToya Braun, *Regis University*, Michele Claiborne, *Regis University*, Megan Leeds, *Regis University*.

**Objective:** Regis University School of Pharmacy (RUSOP) utilizes an integrated, Team-Based Learning (TBL) teaching pedagogy. Due to the COVID-19 pandemic, courses transitioned from in-person to virtual learning. Transitioning academic activities to the virtual setting presented unique school-wide challenges surrounding technology, communication, assessments, integrated pharmacy laboratory experiences, experiential education, equity, and student well-being. We have continuously sought and identified optimal methods for maintaining our integrated, TBL pedagogy within the virtual setting. **Methods:** The RUSOP's initial response in Spring 2020 included the implementation of a “rapid response” plan, which utilized readily available resources that required minimal training for faculty, staff,

and students. We employed policies allowing for virtual academic remediation and provided an inclusive environment to facilitate students' success. For academic year 2020-21, the RUSOP desired a more intentional response, which included consideration of equity and personal well-being of the RUSOP community. **Results:** This "planned response" included actions based on faculty and student surveys to identify successes and areas of opportunity. The RUSOP also investigated and selectively implemented software and hardware tools to improve virtual curricular delivery and assessment, while maintaining fidelity to our pedagogy. Moving forward, the RUSOP identified new teaching methods, IPPE/APPE rotation prioritizations and optimization, and well-being programming to strengthen student learning and equity/inclusivity. **Conclusions:** When transitioning back to in-person learning, the RUSOP is committed to utilizing these new strategies to strengthen the learning experience for our students. Based on reflection and lessons learned since Spring 2020, our "future design" will adopt new tools and strategies to fulfill the RUSOP mission of advancing pharmacy education.

#### **Taking Our Shot to Help End the Pandemic: Providing COVID-19 Vaccinations to Tennesseans**

Chasity M. Shelton, *The University of Tennessee*, Jennifer L. Schoelles, *The University of Tennessee*, Tracy M. Hagemann, *The University of Tennessee*, James Wheeler, *The University of Tennessee*, Marie Chisholm-Burns, *The University of Tennessee*.

**Objective:** To provide COVID-19 vaccinations to patients in the State of Tennessee while promoting the profession of pharmacy. **Methods:** The University of Tennessee Health Science Center (UTHSC) College of Pharmacy (COP) volunteered to provide COVID-19 vaccinations to the faculty, staff, and students at UTHSC in collaboration with University Health Services. UTHSC also partnered with the local and state health departments and city leaders across the state to vaccinate Tennesseans. Volunteer shifts were scheduled using the campus community engagement software GivePulse, Inc., and data were used for comparison to other UTHSC colleges. Volunteer roles included supervising pharmacist, immunizer, vaccine preparer, processor, and observer. Impact statements made by volunteers after completing their shift were used to assess the overall impact. **Results:** From December 26, 2020 to March 29, 2021, a total of 2,454 hours/586 shifts and 422 hours/87 shifts were served by 378 student pharmacists and 16 pharmacy faculty volunteers, respectively. UTHSC COP provided 53.8% of the 5,341 hours dedicated to the UTHSC COVID Vaccine Response, which was higher than the other contributing colleges (46.2%) combined. UTHSC COP supervisors and

student pharmacists have contributed significantly to the state-wide efforts of vaccinating ~1.5 million Tennesseans to date against COVID-19. The predominant impact statement theme was pride in helping to end the pandemic. **Conclusions:** The UTHSC COP responded with enthusiasm to assist with the COVID-19 vaccination efforts in the state of Tennessee while also promoting the pharmacy profession to patients receiving the vaccine. Participating in the COVID-19 vaccination initiatives has provided our students and faculty with a renewed sense of pride in the pharmacy profession as we take part in this global response to help end the pandemic.

#### **Teaching Adaptation: Responding to a Global Pandemic**

Bradi L. Frei, *University of the Incarnate Word*, Russell Attridge, *University of the Incarnate Word*, Joanne Fazio-Gosser, *University of the Incarnate Word*, Anita Mosley, *University of the Incarnate Word*, David Maize, *University of the Incarnate Word*.

**Objective:** During the pandemic, The Feik School of Pharmacy (FSOP) had to adapt didactic, laboratory, and experiential teaching. **Methods:** During the Spring 2020 and Fall 2020 semesters, didactic courses were held virtually either synchronously or asynchronously. During the Spring 2021 semester, students were given the option to return to live classes. **Results:** Many classes were taught in a hybrid format with faculty teaching in the classroom while simultaneously managing the rest of the class virtually. Assessments were open note, open book, and students were given 24 hours to complete exams in Spring 2020. During Fall 2020 and Spring 2021, assessments were held in-person in two classrooms to maintain social distancing. Students unable to come to the classroom took exams using proctoring software. Labs not requiring hands-on skills were held virtually. Physical and logistical changes were implemented to provide some in-person laboratory activities. Partitions were installed at workstations. Lab sections were sub-divided to maintain physical distancing. Most of the documentation and analysis that could be completed outside of the lab environment was removed from the lab meeting time. Experiential rotations were modified in response to restrictions and cancellations of sites. Hospital IPPEs were condensed to 2 week on-site and 1-week virtual rotations. APPEs were modified to meet CDC quarantine guidelines. ACPE allowed 80 hours of virtual precepting for a 240-hour rotation. Pharmacy Practice Faculty provided the virtual precepting component of the APPE. Faculty with practice sites modified their rotations by using virtual rounds and telehealth to meet APPE requirements.

### **Teaching Innovations During the COVID-19 Pandemic: Process, Practices, and Outcomes**

Gail Orum, *Keck Graduate Institute*, Srikanth Kolluru, *Keck Graduate Institute*, Quintin Broussard, *Keck Graduate Institute*, Nazia Rashid, *Keck Graduate Institute*, Martin M. Zdanowicz, *Keck Graduate Institute*.

**Objective:** To prepare faculty to effectively deliver the PharmD curriculum in a hybrid format. **Methods:** In March 2020, KGI senior administration determined that courses would be delivered in a hybrid format due to the COVID-19 pandemic. The transition occurred in two phases: Institute-wide and Course-specific. The transition from onsite to hybrid occurred within one week. Institute-wide initiatives - Leadership convened a kick-off meeting to plan the transition followed by a week-long, intensive faculty development series with sessions on Zoom, Nearpod, Sakai (LMS), ExamSoft, and Kahoot. Faculty reviewed other online platforms and learning management systems, namely Minerva, Foundry, and Canvas. Teaching and Learning Academy sessions enhanced course construction, design, and active learning. Course evaluations, student surveys, focus groups, and dean's forums were used to assess effectiveness. Course-specific initiatives- Faculty implemented modified active-learning strategies for their respective courses. Examples include: asynchronous learning, OSCEs, labs, simulations, and IPE to fit the virtual platform. Faculty completed post-course evaluations to reflect and assess effectiveness. **Results:** Aggregate means for course and instructor evaluations were higher for P1 year for Fall 2020 (4.38 and 4.40) compared to Fall 2019 (4.05, 4.29) and lower for P3 year (3.93, 3.74 for 2020 and 4.51, 4.63 for 2019). In surveys and focus groups, students reported satisfaction with online teaching techniques and policies. Some students reported challenges due to remote learning (eg, lack of quiet study space off campus, increased stress levels, reduced social interactions). **Conclusions:** Teaching innovations as a result of the COVID-19 pandemic were effective for student learning and satisfaction. Some innovations will continue after the pandemic's resolution because the remote format proved to be more efficient and effective (eg, Inter-Professional Education (IPE)).

### **The Impact of COVID-19 on the Student Learning Experience**

Michael J. Fulford, *The University of Georgia*, Kimberly Illingworth Plake, *Purdue University*, Lisa Lebovitz, *University of Maryland*, Jaime Maerten-Rivera, *University at Buffalo*, *The State University of New York*, Trisha Branan, *The University of Georgia*, Kelly Smith, *The University of*

*Georgia*, Shannon Drayton, *Medical University of South Carolina*, Amber Clemmons, *The University of Georgia*.

**Objective:** To explore and assess the impact of COVID-19 on the PharmD student experience **Methods:** Open-ended surveys were administered Spring 2020 to PharmD students from 13 research-intensive institutions to collect detailed context of their experiences. Open-coding and thematic analysis were used to analyze these data. UGA did a follow-up survey in Fall 2020. **Results:** Spring 2020 data centered around these themes: Renegotiating time, a fluid continuum of stress that ranged from worry to anxiety and stress to severe feelings of panic, a lack of motivation and focus, disruption of routine, and questioning their career choice. Benefits of remote learning were flexibility of time, family time, study time, and health. Students were split on if they wanted to see more aspects of remote learning to continue post-pandemic. Fall data from UGA (n=362) showed students struggled to stay connected with friends (36%) and make new ones (66%), felt they were teaching themselves (83%), faced financial distress (43%), and needed support for their emotional well-being (53%). Comments from the survey showed experiences where faculty transformed their courses to support student engagement helped students persist during the semester. **Conclusions:** Consideration should be given to proactively revising teaching and training in a way that allows for greater flexibility and integrates the best aspects of what we learned during COVID-19 to ultimately provide support necessary when students face normal and abrupt transitions. Permanent changes in content delivery, assessment, and student support may be warranted as the impact of the pandemic continues to evolve. Returns to "normal" must consider circumstances that impact the learning experience, such as family and financial obligations, physical health, and psychological emotional well-being, and their time.

### **The University of Mississippi School of Pharmacy – Giving it our Best Shot**

Lauren Bloodworth, *The University of Mississippi*, Katie McClendon, *The University of Mississippi*, Leigh Ann Ross, *The University of Mississippi*, David D. Allen, *The University of Mississippi*.

**Objective:** The COVID-19 global pandemic provided significant challenges and University of Mississippi School of Pharmacy (UMSOP) responded by providing leadership and support for vaccine initiatives on our two campuses (Oxford and Jackson) and at Mississippi State Department of Health (MSDH) sites across our state. **Methods:** Emergency Use Authorization of COVID-19 vaccines in December 2020 provided opportunities for UMSOP participation

in COVID-19 initiatives in Mississippi. In December, UMSOP and University of Mississippi Medical Center (UMMC) Department of Pharmacy participated in Vaccine Clinics for eligible employees/students on the Jackson campus. In January, UMSOP partnered with MSDH to assist with pharmacist/student volunteer participation in drive-thru vaccination sites throughout the state and a city-wide, one-day vaccination initiative targeting undervaccinated populations. In February-March, UMSOP in partnership with UM Student/Employee Health, UM administration, and MSDH implemented campus-wide clinics to vaccinate UM employees/students on the Oxford campus. **Results:** As of March 26, 2021, 1,134,883 vaccine doses were administered in Mississippi, with approximately 23% of the population receiving one dose and 13% fully vaccinated. For UMMC Vaccine Clinics, 129 shifts were covered by pharmacy with 66 pharmacists/residents/students participating. From January-March, UMSOP faculty/students covered 121 MSDH vaccination site shifts and 17 shifts in the one-day, city-wide event. In Oxford, 199 UMSOP faculty/residents/students were trained and covered 253 shifts over 9 clinic days, administering 2,416 vaccines. **Conclusions:** UMSOP faculty/residents/students demonstrated an extraordinary contribution to Mississippi's response to the COVID-19 pandemic. These efforts positively impacted the number of citizens who are vaccinated and illustrate pharmacy's significant role in public health and the global pandemic response.

### **Three Major Initiatives to Promote Student and Faculty Well-Being During a Global Pandemic**

Krista L. Donohoe, *Virginia Commonwealth University*, Laura Frankart, *Virginia Commonwealth University*, Victoria Keel, *Virginia Commonwealth University*, Kelechi Ogbonna, *Virginia Commonwealth University*, Cynthia Kirkwood, *Virginia Commonwealth University*.

**Objective:** To describe the implementation of three major initiatives at Virginia Commonwealth University School of Pharmacy during the COVID-19 pandemic to promote student and faculty well-being. **Methods:** A three-pronged approach was used to positively impact student and faculty well-being. In Fall 2020 the Office of Admissions and Student Services hosted a number of student-centered wellness events (eg, mindfulness sessions, virtual recreation classes, leadership classes, financial wellness sessions, coffee corners) to promote connectedness and reflection. The second initiative was aimed at helping faculty. Fall course coordinators were surveyed to determine the resources needed to alleviate the stress of transitioning to online teaching during a pandemic, and weekly town hall meetings were held to enhance communication. The

last approach was self-care oriented for both students and faculty by a reimagining of the Spring 2021 course schedule. **Results:** Seventy student wellness events occurred in Fall 2020, with 47 planned in Spring 2021. Students also received wellness bundles which included blue light glasses, acrylic massagers, and self-care activities to promote wellness in and outside of the classroom. Based on feedback from 75% of fall course coordinators, faculty-identified resources to offset the increased workload of teaching including enhanced training of graduate teaching assistants, hiring a part-time faculty member, and realigning staff duties. To allow for more opportunities for self-care, the Spring 2021 course schedule was changed from a five-to four-day week and two well-being days were added in which no classes or meetings could be scheduled. **Conclusions:** Informal feedback has been mostly positive. The three well-being initiatives will be formally evaluated to determine if they should be continued even after the global pandemic is over.

### **Transition in Teaching: Virtual Learning Activities Developed in Response to the COVID-19 Pandemic**

Kimberly M. Beck, *Butler University*, Katy Brown, *Butler University*, Sheel M. Patel, *Butler University*, Andrew N. Schmelz, *Butler University*, Veronica Vernon, *Butler University*, Jessica Wilhoite, *Butler University*.

**Objective:** To maintain student engagement, quality high-impact learning activities, and rigorous student assessment in the midst of remote teaching during the COVID-19 pandemic. **Methods:** We will highlight four activities we implemented during the COVID-19 pandemic. 1) Students completed their patient counseling lab final via Zoom in our Self Care and Health Promotion course in Spring 2020. Using scanned product cards and following the PPCP model, students counseled a peer in an over-the-counter patient counseling scenario. Students then uploaded their video for grading and feedback. For this spring 2021, we created our patient counseling cases to utilize electronic resources. 2) Virtual debates were held in our new Social Justice and Diversity course in Fall 2020, titled Diversity & Inclusivity in Healthcare. 3) In a women's health elective course, students participated in a simulated virtual telehealth visit for contraception, where they served as prescribers. 4) In an ambulatory care APPE, an in-person diabetes escape room was transitioned to a virtual activity. A student converted the escape room puzzles and tasks into Google Forms for APPE students to complete in groups. Using Zoom breakout rooms, students worked in groups to escape the breakout room and be the first group to complete a simulated patient counseling session with the facilitator. **Results:** Details of the activities and tips for improvement will be

shared. Student perceptions/feedback and knowledge gained with these virtual activities will be included. **Conclusions:** Switching to virtual formats to deliver content during a pandemic resulted in innovative and effective activities in required courses, professional electives, and APPE rotations. Based on the success of these activities, portions will be continued in a virtual format moving forward.

### **Transition to A Hybrid Model of Learning During The COVID-19 Pandemic: Lessons Learned**

Wiyanna K. Bruck, *South College*, Fadi Alkhateeb, *South College*, Michael O'Neil, *South College*.

**Objective:** School of Pharmacy (SOP) programs have made tremendous adjustments in didactic and experiential curriculum due to the coronavirus disease 2019 (COVID-19) pandemic. We outline our learning model transitions and discuss challenges experienced while executing a hybrid learning model. **Methods:** MEDLINE database was scoped for relevant articles. For lay articles, Google searches were utilized. This document is a compilation of observations and experiences of administration, faculties, and students. **Results:** In spring and summer quarters of 2020, our SOP adopted a hybrid model consisting of both online and in-classroom teaching based on student preference. Laboratory courses were either postponed or consisted of comprehensive use of personal protection equipment (PPE). Major exams were online but transitioned to 100% in person by summer quarter. For fall and winter quarters, didactic courses were 100% in classroom/lab, unless in quarantine. Strict adherence to Centers for Disease Control and Prevention (CDC) guidelines has been maintained. Student COVID-19 exposures/illnesses were managed by the Student Affairs Office. Observations included increased workload for faculty coordinating didactic lectures due to students participating online or on campus synchronously. Assessments and labs required more spacing, proctors, and PPE. Course coordinators reported increased testing delays, missed classes, and assessment make-ups. Many clinical sites prohibited students which increased efforts to find alternate sites. Student stress accelerated due to personal/family health concerns and financial concerns. Frequent communication between administration, faculty, staff, and students was critical to maintain near normal classroom and laboratory activities. No outbreaks or clusters of COVID-19 have been reported. **Conclusions:** We implemented a hybrid learning model that transitioned to full in-classroom teaching providing students in-person and online learning opportunities, while also minimizing exposure and spread of COVID-19.

### **Transitioning to Virtual Objective Structured Clinical Exams During the COVID-19 Pandemic**

Danielle Backus, *Pacific University Oregon*, Kristine Marcus, *Pacific University Oregon*, Bridget Bradley, *Pacific University Oregon*, Gregory Tallman, *Pacific University Oregon*, Ryan Gibbard, *Pacific University Oregon*, Ian Doyle, *Pacific University Oregon*, Brandon Nuziale, *Pacific University Oregon*, Jeff Fortner, *Pacific University Oregon*.

**Objective:** To describe the process and impact of transitioning from in-person to virtual Objective Structured Clinical Examinations (OSCEs) when live OSCEs are impossible or impractical. **Methods:** Students received formative in-person assessment on their ability to complete common transitions of care activities (medication reconciliation and discharge counseling), but required virtual summative assessment due to the COVID-19 pandemic. In-person vs. virtual pass rates were compared, anticipating that more students should pass the OSCE than TOSCE. Course evaluations and survey data from students, standardized patients, graders, and proctors were reviewed to provide feedback on the benefits/harms of the virtual medium and suggestions for improvement in the future. **Results:** Class-wide pass rates for both skills improved from TOSCE (159/176, 90.3%) to OSCE (172/176, 97.7%). Survey results elucidated virtual OSCE strengths, weaknesses, and opportunities for improvement. Course evaluations revealed a large level of student satisfaction, with areas for improvement related to transparency of feedback on TOSCE and OSCE performance. **Conclusions:** Virtual OSCE pass rates were consistent with faculty expectations. Transitioning to virtual OSCE may have altered grading standards, and students indicated a preference for in-person OSCEs. However, feedback on the virtual OSCE process was mostly positive, and several suggestions for improvement have been implemented as the COVID-19 pandemic has continued.

### **UIC COVID Response: Serving the Community, City, and State through Vaccination, Education, Outreach, and Research**

Sheila M. Allen, *University of Illinois at Chicago*, Robert Didomenico, *University of Illinois at Chicago*, Rodrigo Burgos, *University of Illinois at Chicago*, Allison E. Schriever, *University of Illinois at Chicago*, Chris Schriever, *University of Illinois at Chicago*, Andrew Donnelly, *University of Illinois at Chicago*, Mary Moody, *University of Illinois at Chicago*, Stephanie Crawford, *University of Illinois at Chicago*.

**Objective:** The University of Illinois Chicago (UIC) College of Pharmacy (COP) spans two campuses (Chicago

and Rockford). Service is a core component of our mission, and the COVID-19 pandemic presented unique opportunities for us to serve the community, city, and state through vaccination, education, outreach, and research. **Methods:** A survey of faculty and trainees involved in the COVID-19 response was conducted on both campuses to assess the types of services provided and funding sources. Results were tabulated and summarized. **Results:** Between March 2020 and March 2021, faculty and trainees were involved in COVID-19 initiatives in the areas of vaccination, education, outreach, and research. Vaccination initiatives included the acquisition, storage, distribution, preparation, and administration of COVID-19 vaccines at campus locations, fixed and mobile community clinics, and state mass vaccination sites. To date, 55 faculty and 148 trainees have volunteered 4630 hours to provide 93,155 vaccines. Faculty have also provided numerous hours of education to various community members and healthcare professionals. Additionally, 1 faculty was appointed to the Chicago Department of Public Health COVID-19 Scientific Advisory Committee and 8 faculty were instrumental in the creation of the Illinois COVID-19 Vaccine Task Force. Faculty have secured over \$500,000 in funding to support implementation design research and community-based initiatives, 2 faculty have participated as investigators and coordinators for vaccine trials, and 4 faculty were instrumental in identifying a new antiviral compound. **Conclusions:** UIC COP has demonstrated a sustained commitment throughout this public health crisis in service to the community, city, and state. Through these efforts and staying true to our mission, we have come together as a community and created new partnerships for us to grow now and into the future.

### **University of California San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences COVID-19 Vaccination Efforts**

Alex J. Luli, *University of California, San Diego*, Laura A. Hart, *University of California, San Diego*, Katharina Brandl, *University of California, San Diego*, Rosalyn Nguyen, *University of California, San Diego*, Parto Pakravan, *University of California, San Diego*, Emily Lim, *University of California, San Diego*, Melanie Ghosn, *University of California, San Diego*, Sarah Lorentz, *University of California, San Diego*.

**Objective:** To describe a system created to streamline and track COVID-19 vaccination efforts at University of California San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS). **Methods:** Students completed a standardized form containing details of the vaccination events including location, dates, times, pharmacist

preceptors, and duties. All requests were screened to ensure student safety, availability, and feasibility, then approved by a SSPPS faculty team. Non-SSPPS preceptors were required to become affiliate faculty to supervise students and evaluate post-event reflections. After each event, students and faculty completed a form to track volunteer hours and reflections. Students received course credit for volunteering. Comments from students' reflections (n=74) were analyzed to identify common challenges. **Results:** From January 14, 2021 to March 24, 2021, SSPPS students and faculty participated in 146 volunteer shifts totaling 900 hours. Settings included mass vaccination sites, long-term care facilities, non-profit organizations serving underserved populations, community senior centers, and community pharmacies. Challenges encountered by students included communication with patients (eg, talking through the car window, 41%), problems with logistics (eg, students fulfilling several duties at once, 31%) and fulfilling a duty for the first time (eg, vaccinating for the first time, 26%). **Conclusions:** Student pharmacists and faculty at SSPPS have played an integral role in COVID-19 vaccination efforts in the community. Integrating both students and faculty helps develop professional identity and promotes the profession of pharmacy.

### **Vaccination Engagement Impacts COVID-19 Vaccine Distribution in Hawaii and Pharmacy Student Perceptions on Pharmacist's Role**

Nicole S. Young, *University of Hawaii at Hilo*, Jarred Prudencio, *University of Hawaii at Hilo*, Christina Method, *University of Hawaii at Hilo*, Lara Gomez, *University of Hawaii at Hilo*, Roy Goo, *University of Hawaii at Hilo*, Carolyn Ma, *University of Hawaii at Hilo*.

**Objective:** The COVID-19 pandemic may potentially leave Hawaii's population of 1.4 million people with devastating effects. The University of Hawaii (UH) health science profession schools developed a memorandum of agreement with the Department of Health to allow pharmacy, nursing, and medical students to work specifically under a UH Medical Reserve Corps at the Point of Distribution (POD) sites. **Methods:** Since December 2020, students, faculty, and staff have volunteered in the role(s) of immunizer, vaccine syringe filler, data entry, and post-vaccination monitor. A survey was conducted to evaluate how volunteering at the PODs affected pharmacy students' perceptions in their entrustable professional activity of ensuring patients are immunized, as well as their confidence in vaccination and syringe filling skills. **Results:** As of this writing, there have been 568,376 COVID-19 vaccine doses administered across the state. A total of 46 students have responded to the survey showing improvement in their ability to immunize patients and pre-fill needle syringes from a multi-dose

vial. Students also shared how their volunteer work has contributed to their understanding of the role of pharmacy in a public health crisis and what they enjoyed most about volunteering. **Conclusions:** Pharmacy students, faculty, and staff have played a key role in vaccination efforts for Hawaii's residents. Furthermore, involvement at the PODs has helped to increase the students' self-perception of entrustability and confidence in vaccination skills, which increases their value as they enter the workforce during the COVID-19 pandemic.

### **Vaccine Challenges Identified and Needs Addressed by Alaska and Idaho Student Pharmacists**

Renee F. Robinson, *Idaho State University*, Kevin Cleveland, *Idaho State University*, Paul Cady, *Idaho State University*, Christopher Owens, *Idaho State University*.

**Objective:** Faculty and students at Idaho State University (ISU) College of Pharmacy have led many COVID-19 response initiatives across Alaska and Idaho. Here we highlight vaccination response efforts and demonstrate how these efforts addressed the needs of underserved communities in Alaska and Idaho. **Methods:** To anticipate COVID-19 vaccine administration uptake, we partnered with pharmacy organizations in Alaska and Idaho, surveying community pharmacists to identify potential barriers to vaccine administration efforts. Established dissemination and implementation (DI) frameworks were used to create a formalized structure to assess infrastructure needs and partnership opportunities. **Results:** Two statewide immunization needs surveys were shared locally during state professional organization meetings and in 2-peer-reviewed publications that identified logistical barriers. We planned and conducted mass influenza drive-thru influenza vaccination events in Fall 2020 to serve to test DI models for COVID-19 vaccine delivery within Alaska and Idaho. Funding from a variety of sources was acquired to provide training on IIS system use and data captures. We partnered with healthcare providers, pharmacies, and insurance payers to provide community vaccinations events across 2-states, in 5 cities, and 3-campus resulting in over 3,641 COVID-19 vaccinations administered (over 5-months). **Conclusions:** Academic, community, and healthcare partnerships are essential to any emergency response. Our approach using concerted localized efforts resulted in efficient distribution of vaccines as well as strengthened partnerships with local health departments, health systems, and community pharmacies.

### **Virtual Interprofessional Education: A Pandemic Pivot**

Amber E. King, *Thomas Jefferson University*, Elena Umland, *Thomas Jefferson University*.

**Objective:** To provide dynamic virtual, synchronous, inter-professional learning experiences to pharmacy students during a global pandemic. **Methods:** Jefferson College of Pharmacy (JCP) faculty and administration advocates of interprofessional education and practice collaborate closely with the Jefferson Center for Interprofessional Practice and Education (JCIPE). During the spring 2020 semester, JCIPE faculty and staff quickly adapted scheduled in-person inter-professional events, including simulations and experiential sessions, to an online format using video conferencing software. During summer 2020, programs were redesigned to optimize student learning and engagement in an online format. Facilitator training was augmented to cultivate skillfulness with new technologies and teaching methods. The 2020-2021 academic year was delivered virtually with the exception of IPPEs, APPEs and some skills-based class sessions. JCP students and faculty participated in virtual, synchronous, interprofessional experiences, including the Jefferson Health Mentors Program, Hotspotting, Team Care Planning, Introductory Team Safety and Fearlessness Education (TeamSAFE), and Advanced TeamSAFE. All described activities incorporated required active learning. **Results:** Spring 2020 semester sessions were delivered virtually, but were troubled by technical difficulties and less-than-ideal educational strategies due to the immediate time frame in which changes were implemented. Fall 2020 and spring 2021 semester offerings, using lessons learned from spring 2020, were successfully delivered to thousands of health professions students, including all JCP P1-P3 students and select JCP P4 students. Preliminary data indicate student engagement was high, and student learning did occur. Additional program evaluation data will be assessed and shared. **Conclusions:** Through collaboration with JCIPE, JCP successfully delivered high-quality, engaging, virtual interprofessional education to our students.

### **Wilkes University, Nesbitt School of Pharmacy (NSoP) Regional Engagement in COVID-19 Pandemic Initiatives**

Marie Roke Thomas, *Wilkes University*, Mary F. McManus, *Wilkes University*, Nicole Pezzino, *Wilkes University*.

**Objective:** To provide comprehensive inter-professional engagement in COVID-19 assurance testing, analyze COVID-19 vaccine best practices in support of community population health, and support implementation of vaccine administration. **Methods:** The NSoP developed three initiatives incorporating CDC guidelines to meet community needs. (1) Public health pharmacy students designed and implemented a COVID-19 testing program on the university campus. Program criteria included identification of

target populations, support clinical staff, testing protocol, reporting, and site selection. (2) Public Health Elective Advanced Pharmacy Practice Experience (APPE) pharmacy students were deployed to community pharmacies to support and identify best practices. For each vaccination clinic, logistical and clinical data were collected. (3) The NSoP provided COVID-19 education and immunization at community pharmacies, long term care clinics and health systems. **Results:** (1) The NSoP in collaboration with the Passan School of Nursing performed 650 rapid tests over a three-day period prior to the Spring 2021 semester. (2) APPE students and volunteer health professionals improved vaccination efforts,

expanded clinic access and identified best practice public health initiatives. (3) The NSoP administered over 12,500 vaccines throughout Pennsylvania. **Conclusions:** (1) Inter-professional assurance testing identified the number of active COVID-19 cases on campus allowing for a safe, strategic reopening of the campus and a means to identify new and recurring exposures. (2) Public health APPE students identified and established best practices resulting in increased access to COVID-19 clinical services in community pharmacies. (3) Student pharmacist support with COVID-19 vaccination has proven invaluable in providing critical health services and maximizing community vaccine efforts.