



Nova Southeastern University College of Pharmacy

After More Than 30 Years, NSU Continues to Have Many Firsts

Last year, Nova Southeastern University celebrated the College of Pharmacy's 30-year anniversary by looking back at the impactful accomplishments of leaders, administrators, students, faculty and staff members. This year, we set the future of the College of Pharmacy into motion as we Dream of transforming the pharmacy profession through programs grounded in patient-centered care.

**DREAM
DARE
DISCOVER**

We Dare to take risks that will benefit our students, alumni, stakeholders, communities and the world. Additionally, we will continue to Discover new methodologies of teaching, conduct and support for new research and share those findings to improve global health.

Building on the legacy set forth by our predecessors, the new Pharm.D. curriculum was introduced, providing students a fresh approach to learning that will give them an edge in this ever-evolving profession. In May 2018, we proudly graduated 12 Ph.D. students and the first cohort of students from the Master of Science in Pharmaceutical Affairs program – the only one of its kind in the United States.

The firsts continue May 2019, when we will graduate the first cohort from the Master of Science in Pharmaceutical Sciences (MSPS) program. This program once again highlights our commitment to providing diverse opportunities to our students. We are committed to setting the new standard by helping each student become a force of nature within and beyond the profession.

New HCA Hospital on NSU's Fort Lauderdale/Davie Campus

NSU continues to expand its commitment to improving the health of those in our community. Hospital Corporation of America (HCA) East Florida has started construction on a teaching and research hospital with 200+ beds. The hospital will be located on NSU's Fort Lauderdale/Davie Campus and will be integrated with NSU's research centers and clinical trial programs. Ideally located, with easy highway and airport access, South Floridians and visitors from around the world will benefit from the comprehensive care this hospital will provide.

First South Florida PGY-2 Ambulatory Care Residency Accreditation Granted

The College of Pharmacy is proud to announce the official accreditation of its Ambulatory Care Postgraduate Year Two (PGY-2) Pharmacy Residency, which is led by Tina Joseph, Pharm.D., BCACP. The program is the first of its kind in South Florida and speaks to the high-caliber education provided by the NSU College of Pharmacy.

The NSU ambulatory residency model is unique from almost all PGY-2 ambulatory care programs in the country. Residents work within the ACORN SEED (Accountable Care Organization Research Network, Services and Education) team, which consists of college of pharmacy faculty members integrated within primary care physicians' offices as part of a community-based accountable care organization.

Many of these physicians have had little or no experience working in parallel with pharmacists. This unique element allows residents to gain the experience of building clinics and relationships from the ground up, while paving the way for new advanced pharmacy practice experience (APPE) sites that will benefit future pharmacy students.

The program's high marks resulted in approval of a three-year accreditation by the American Society of Health-System Pharmacists (ASHP) in October. This accreditation demonstrates the high-quality educational programming provided by the NSU College of Pharmacy and enhances the way the college is seen throughout the country, while positively impacting the daily lives of the patients it serves.

This landmark accomplishment is a testament to the quality learning experiences available through the Pharm.D. program at the NSU College of Pharmacy and is yet another example of the NSU Edge.

New Pharm.D. Curriculum Emphasizes New Skills

Fall 2018 marked the launch of a new, cutting-edge Pharm.D. curriculum in which students take courses in modules, with the aim of more rigorously preparing them to dominate in the profession. The curriculum is presented in blocks of integrated topics that emphasize knowledge, skills and practical experience – revisiting key concepts throughout multiple courses. Students take courses in two- to four-week blocks (the length of each course may be different), concentrating on a specific content area so they can master it before moving on to the next course and mastering that one.

Professionalism, critical thinking, clinical reasoning and



skills development were woven throughout the curriculum to enable students to be practice-ready and team-ready upon graduation.

Some of the newly implemented skills students are exposed to include more laboratory classes and professional experiences as well as training, practice and certification for certain functions that all pharmacists do, such as immunization and medication therapy management. This also will include functions that may be specialized (smoking cessation and sterile compounding) as required courses.

For the class of 2022, this new way of studying seemed daunting at first, but students have taken it on together and are flourishing into a force of nature.

CareeRx Space: Technology and Pharmacy Unite

The CareeRx Space provides students access to training and opportunities outside the classroom and helps to advance the profession by developing professionals who will dominate in the field. The new facility opened its doors for students and alumni as the hub for student development and career services in fall 2018.



With more than 25 services, the CareeRx Space provides the convenience of online appointment setting, curriculum vitae review, public speaking training, residency training and match support. It also is a state-of-the-art video production studio with professional backdrop, lighting and sound for virtual interviews – and much more.

As part of the CareeRx Space, an online job board was launched to consolidate all pharmacy employment opportunities connecting employers to NSU College of Pharmacy students and alumni.

The CareeRx Space allows us to connect with students for one-on-one, individualized consultations, virtually and in person. This helps to meet the demands of ever-changing life schedules and gives students the convenience of flexible meeting schedules. This NSU Edge helps NSU College of Pharmacy students create the important first impression and allows them to dominate in their career search.

eventRx: Staying at Forefront of Innovation

The eventsRx software and app is a digital system used to provide management for events and capture data pertaining to students' participation in co-curricular events and activities. The software, originally developed by a team of pharmacy educators, administrators and a software designer/programmer, helps the college document student participation in

co-curriculum activities. Since its inception, the software has expanded to capture all student events in the college. It also generates the college's student events calendar and has been a success since implementation in 2018.

Rather than using a paper system, which is very cumbersome and fails to provide the outcome data needed to meet accreditation requirements, the system combines event/activity management tools that integrate event information, an events calendar and reporting on student experiences with a simple web-based app installed on smart phones or tablets, which capture student participation.

The success of eventsRx led to a presentation on this topic at the American Association of Colleges of Pharmacy (AACP) national meeting last July. In collaboration with the University of Georgia, NSU will again present at this year's annual meeting on eventsRx and its use to drive co-curricular assessments. Continual enhancements are being made to the software and a patent application was submitted. NSU is currently seeking commercial companies that are interested in purchasing the software.



Futures Summit: Pharmacy Profession Network Leads to Student Success

The Futures Summit was created as a pharmacy career and networking event encompassing all aspects of the profession – from software companies that develop programs to assist in tracking pharmacy dispensaries, to pharmacological research companies looking to hire the person who will discover the next big therapeutic breakthrough – and everything in between. By design, it gives different pharmacy constituents the opportunity to network, while opening doors for students to potential dream jobs they may not have known existed.

The November 2018 event brought together 120 companies, including Cleveland Clinic, Memorial Healthcare System (MHS), Walgreens, Sandoz, CVS Health, the U.S. Food and Drug Administration, the U.S. Drug Enforcement Administration, Baptist Health South Florida, Pfizer, Rutgers, the U.S. Air Force and the Florida Board of Pharmacy.

The Futures Summit, which attracted more than 800 at-



tendees, was open to the entire university, providing all NSU students a competitive edge. As a result, more than 30 undergraduate students also reaped the rewards of participating by receiving job offers from some of the companies in attendance.

NSU College of Pharmacy's Brain Research and Integrated Nutrition (B.R.A.I.N.) Center Hosts Nutritional Factors in Autism Symposium

NSU launched the B.R.A.I.N. Center in February 2018 to conduct basic and clinical research into metabolic causes of brain disorders and their treatments, as well as to provide related educational programming. On Oct. 19, the Center hosted a one-day conference welcoming close to 100 attendees at its first educational program. The program provided information to parents and professionals about the causes of autism and potential treatment approaches, including nutraceutical options. It further provided information on the critical role of epigenetic regulation in brain development and information on the sensitivity of the brain to environmental toxins.

Richard Deth, Ph.D., director of the B.R.A.I.N. Center, welcomed guests and was the keynote speaker. Faculty members from the College of Pharmacy and several guest speakers provided a range of topics, including "The Importance of Nutritional Evaluation of the Patient with Developmental Challenges," "How to Incorporate Nutritional Genomics into Treatment Modalities for ASD" and "The Importance of a Well-functioning GI Tract in Autism."

A complete list of speakers and accompanying videos is available online at https://pharmacy.nova.edu/BRAIN_Center/index.html.

Next year's conference will focus on nutritional factors in Alzheimer's disease. Updates will be posted on the website.

Commemorating 10 Years of Glucose Games

The College of Pharmacy's chapter of the American Pharmacists Association Academy of Student Pharmacists (APHA-ASP) proudly celebrated the 10th anniversary of the Glucose Games. The annual event, which includes participation from other NSU colleges, consists of flag football teams that raise



money while having fun. The Glucose Games was created as a philanthropic effort to raise money for the nonprofit organization Florida Introduces Physical Activity and Nutrition to Youth (FLIPANY). Over the years, it has evolved from a College of Pharmacy event to one of the biggest interprofessional events on campus.

Over the span of a decade, the event has raised more than \$25,000 for FLIPANY, which provides healthy meals and physical activity programs to kids in South Florida. This year, more than 300 participants from 10 different colleges were present at the Miami Dolphins Training Facility on the NSU Fort Lauderdale/Davie Campus.

The Glucose Games has become a staple within the College of Pharmacy and is now an interdisciplinary event everyone looks forward to annually. This student-led pharmacy event is a reflection of the philanthropic spirit that is woven throughout the fabric of our students and NSU as a whole, and is a source of Shark pride.

Palm Beach and Puerto Rico Students Make Impact in Community and on Future of Profession

The NSU College of Pharmacy in Palm Beach collaborated with the Diabetes Coalition of Palm Beach County to host 10 events throughout the county, screening over 500 patients during this academic year. The organization is a voluntary nonprofit alliance of more than 50 health care organizations and community partners. They work together to prevent diabetes and improve the lives of people living with the disease, and those touched by it through awareness, education, advocacy and access to care.

The largest event, "Know Your Numbers Health Fair at the Palm Beach Outlets," occurred in January 2019, and in addition to Hemoglobin A1c (HbA1c) tests that were conducted, the event also featured educational booths, tasty and healthy treats, children's activities and gift certificates and prizes. Faculty members from the NSU College of Pharmacy supervised 20 first- to third-year pharmacy students as they conducted the screenings.

Students in Puerto Rico also are doing their part in the community. Faculty and student pharmacists from NSU's



College of Pharmacy Puerto Rico Campus collaborated with Walgreens, Puerto Rico, in its annual event, “Walgreens Healthcare Expo Contigo y los Tuyos.” During the event, students provided HIV rapid-tests screening services and blood pressure and glucose tests, impacting approximately 200 participants. Attendees also were provided health-related educational resources and participated in sports activities, while raising funds to assist local nonprofit organizations that provide services to underserved patients.



Participation in community events extends to more than just health fairs. Students at NSU’s College of Pharmacy in Puerto Rico also take pride in bringing awareness and raising funds for causes that affect so many, such as the Susan G. Komen 5K Race for the Cure. They also visit and bring donations to the elderly, taking the time to play bingo, paint, dance and bring smiles to their faces.

Student Achievements a Source of Shark Pride

NSU students are prepared to dominate the pharmacy profession. We are proud to highlight a few of our students who represent the NSU Edge outside of the NSU College of Pharmacy halls.

Krista Riveron, a dual Pharm.D./MSBI candidate who is graduating in 2019, is the recipient of the Health Information Management Systems Society (HIMSS) South Florida Chapter scholarship. This inspiring student has served as vice president of Student Government on the Palm Beach Campus, among other organizations, while juggling four young children and maintaining a 4.0 average in her informatics coursework.

Parvathy Varma, M.S., who also will graduate in May 2019 and is the NSU Industry Pharmacists Organization (IPhO) Chapter founding president, has accepted an offer for a pharmaceutical industry fellowship in partnership with Rutgers and AstraZeneca. This is a very competitive and reputable fel-

lowship nationwide.

Matthew Schrier, a Ph.D. candidate in our pharmaceutical sciences program in the molecular medicine and pharmacogenomics concentration and president of the Graduate Association of Pharmaceutical Sciences, was awarded an American Foundation for Pharmaceutical Education (AFPE) Pre-Doctoral Fellowship in Pharmaceutical Sciences. His selection from an elite group of applicants recognizes the significance of his research.

Adriel Martinez Varela, Class of 2020, was selected as the recipient of the Puerto Rico Pharmacist Association (CFPR) scholarship, granted to a student pharmacist with financial needs who represents the highest ethical standards of the pharmacy profession, leadership characteristics and service to the profession.

Keyla Rodriguez Zayas, Class of 2019, is completing an APPE at the U.S. Food and Drug Administration’s (FDA) headquarters, becoming the first student from NSU’s College of Pharmacy Puerto Rico to be selected for the prestigious rotation. It also marks the first time the FDA Center for Drug Evaluation and Research’s Counterterrorism and Emergency Coordination (CTECS) Division offered this APPE. Once again highlighting the far-reaching network of NSU alumni, the preceptor was Carlos Gonzalez-Mercado, Pharm.D. Class of 2014.

Advocates for the Profession

In March, 33 students, six faculty members and two residents participated in the Florida Pharmacists Legislative Days and Health Fair in Tallahassee. During the visit, faculty members and students provided health screenings and spoke to legislators about the pharmacy profession and the issues important to those in the field. Students also presented educational posters on current pharmacy-related bills, including collaborative practice, test and treat, and pharmacy benefits managers (PBM).

During the health fair, students and faculty members participated in blood pressure, body mass index (BMI), glucose and cholesterol screenings. Legislators, lobbyists, FPA Executive Vice President and CEO Michael Jackson, B.Pharm., and the general public were among the 268 patients that students screened, a record high for Legislative Days.

Travel Study

The college offered its annual Travel Study program to students in June 2018 as part of a summer-term course. Students learned about the practice of pharmacy in Spain and the European Union. The experience allowed them to participate in cultural excursions, pharmacy and hospital visits while also attending classes in the Spanish cities of Madrid, Toledo, Salamanca and Granada.

While the program provided students with the opportunity to experience the culture of the areas visited, there were also concrete program outcomes providing students with the



ability to compare the practice of pharmacy in Europe and the U.S. and learn about the legal framework and regulatory structures in Spain. In addition, students were exposed to translational research activities during the program.

Class of 2021 student Marissa Brooks, who attended last year's study program said, "This trip to Spain was an amazing experience!"

Faculty Member Contributions

Faculty members from the NSU College of Pharmacy are engaged in a range of funded discovery and development research, advancing the research mission of the college. For example, Richard Deth, Ph.D., professor in pharmaceutical sciences, exemplifies this through his work as a molecular neuroscientist with research interests in several brain disorders, including autism. He received funding from the Boston VA Research Institute to further support his research program. Deth does not shy away from the public spot light and recently created a podcast describing the potential role for methylation and Vitamin B12 in autism. The podcast is designed for parents of children of autism, turning research into better health.

Malav Trivedi, Ph.D., assistant professor of pharmaceutical sciences, won several extramural funded awards. An award from the Department of Defense for the study of "Immuno-modulation in Gulf War Illness (GWI)" (\$732,161), which aims to uncover what causes the onset and progression of GWI and the role the immune system might play. A second award is from the National Institutes of Health to examine the "Modulation of Therapeutic Cells Exosome Content by Autophagy"

(\$454,924). The goal of the research grant is to find better ways to heal wounds faster and increase the capacity of therapeutic cells to facilitate organ healing. Both awards are interdisciplinary and leverage the resources available within NSU.

Several NSU College of Pharmacy faculty members have successfully obtained patents during the past year. Enrique A. Nieves-Vazquez, Ph.D., clinical assistant professor of pharmaceutical sciences, received a patent for "Drug Delivery Systems and Methods for Preparation Thereof" in November 2018. Anastasios Lymperopoulos, Ph.D., associate professor of pharmaceutical sciences, received a patent for his work on "Compositions Comprising β -Arrestin 1 and Methods of Use Thereof for Therapeutic Modulation of Aldosterone Levels in Heart Disease." Finally, Mutasem Rawas-Qalaji, Ph.D., associate professor of pharmaceutical sciences, received a patent for a novel dosage form of epinephrine.

Appu Rathinavelu, Ph.D., associate dean of institutional planning and development and executive director of the Rumbaugh-Goodwin Institute for Cancer Research, visited India in February 2019 as a continuation of the Fulbright Scholarship he completed in 2016. As part of the Global Initiative for Academic Networking (GIAN) program that was funded by the Government of India, Rathinavelu taught the course "Cancer and Molecular Basis of Cancer Therapeutics" to graduate students, professional degree students and post-doctoral fellows at the Bharathidasan University of Tamil Nadu state. Rathinavelu also was the keynote speaker at the International Conference on Cancer Inferno and Its Prevention Strategies and presented seminars at the Clinical Biochemistry Department of the University of Madras.

Elizabeth Sherman, Pharm.D. ('07), associate professor of pharmacy practice, along with colleagues from across the U.S., became a member of an industry-sponsored research grant for a project entitled "The Incidence and Severity of Drug Interactions Before and After Switching Antiretroviral Therapy to Bictegrovir/Emtricitabine/Tenofovir Alafenamide in Treatment Experienced Patients." This is a multicenter, observational, retrospective cohort study of treatment-experienced patients with HIV infection and complements her long-term work with the AIDS Education and Training Centers Program funded under HRSA.

The New Standard

The NSU College of Pharmacy motivates students to Dream. Dare. Discover. As we look toward the future, we build on this challenge by setting the new standard of pharmacy education. We are providing our students with pathways to excellence as we raise the bar in this ever-evolving field by not only adapting to it, but leading the change. Our students will not only graduate, they will dominate and be the force of nature catapulting the future of pharmacy. Learn how you can benefit from the NSU Edge by visiting www.pharmacy.nova.edu – the new standard awaits. We encourage students, alumni and friends to be a part of it all! Go Sharks!