California Northstate University
College of Pharmacy

2019-2020 ADMISSIONS BROCHURE
Mission Statement

To Advance the Art & Science of Pharmacy
# Table of Contents

- History ............................................. 4
- Accreditation ...................................... 5
- Area Information .................................. 6
- Curriculum ........................................ 7
- Research .......................................... 10
- Residency Information ............................ 11
- Admissions ........................................ 12
- Pharmacy Primer Program ....................... 14
- Student Involvement .............................. 15
History

California Northstate University College of Pharmacy is a private institution that was conceived by a group of independent and corporate pharmacy managers who were having difficulty hiring enough pharmacists to adequately staff their pharmacies. After researching the problem thoroughly, they discovered that the state of California has only half the number of practicing pharmacists per 100,000 capita as many other states in the union. The case for a new pharmacy school in California was so compelling that the group decided to start a new school in the Sacramento area.

The founding pharmacists of California Northstate University College of Pharmacy recruited a number of financial sponsors who shared their vision to create a new, quality college of pharmacy, and who were successful in raising enough money to start the new school. Approval to operate as a professional doctorate educational institution in California was granted by the Bureau for Private Postsecondary and Vocational Education on April 15, 2007.

California Northstate University College of Pharmacy submitted applications for accreditation with both the Accreditation Council for Pharmacy Education (ACPE) and the Western Association of Schools and Colleges (WASC). After a team visit by an ACPE evaluation team in April of 2008 the College received approval by the ACPE Board of Directors to advance to pre-candidate status on June 30, 2008. The college was then awarded Candidate status at the January 20-24, 2010 meeting of the ACPE Board of Directors.

The Charter Class began their doctoral program of study on September 2, 2008. The class completed the program with an inaugural graduation in May of 2012. Nine additional classes have matriculated into the program.
Accreditation

**Accreditation Council for Pharmacy Education (ACPE)**
California Northstate University’s Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, located at 190 South LaSalle Street, Suite 2850, Chicago, IL 60603-3410; Phone: 312-664-3575; Fax: 866-228-2631; Website: [www.acpe-accredit.org](http://www.acpe-accredit.org).

**Western Association of Schools and Colleges (WASC)**
California Northstate University is accredited by the WASC Senior College and University Commision (WSCUC), located at 985 Atlantic Avenue, #100, Alameda, CA 94501; Phone: 510-748-9001; Fax: 510-748-9797; Website: [https://www.wscuc.org](https://www.wscuc.org).

**Bureau for Private Postsecondary Education (BPPE)**
Approval to operate as a degree-granting college of pharmacy in California was obtained from the Bureau for Private Postsecondary Education (BPPE) on April 15, 2007. Approval to operate means compliance with state standards as set forth in the California Education Code.

The Bureau for Private Postsecondary Education (Bureau) is a state regulatory agency within the California Department of Consumer Affairs (DCA), established in January 1998. The Bureau is responsible for approving and regulating private postsecondary and vocational institutes of education in California. The Bureau was established to foster and improve the educational programs and services of these institutions while protecting the citizens of the state from fraudulent or substandard operations (California Education Code - 94705). In addition, the Bureau mediates complaints between students and institutions and investigates schools as necessary.
Area Information

California Northstate University College of Pharmacy (CNUCOP) is located in the city of Elk Grove, California. Elk Grove is nicely situated near the capital of California, Sacramento, in Northern California. Students who attend the College have the good fortune to live in an area that provides an incredible array of indoor and outdoor activities to enrich their learning experience. Sacramento is often referred to as the “River City”, because it is bordered by the American and Sacramento Rivers, which provide many forms of water recreation, including sailing, kayaking, rowing, paddle boarding, windsurfing, and both calm- and white-water rafting. Old Town Sacramento and several of the surrounding towns offer tourists a glimpse of the gold mining days with mine tours, gold panning, and gift shops. Sacramento has a lively downtown area that offers students great shopping, restaurants, concerts, and night life. Sacramento is home to the Sacramento Kings and the River Cats baseball team.

Beautiful Lake Tahoe, a short distance east, is the highest lake of its size in the United States and it is the largest alpine lake in North America. Lake Tahoe offers visitors white sand beaches, biking trails, boating, camping, casino action, fishing, hiking, mountain climbing, and more than two dozen world class ski resorts.

San Francisco, Monterey, and Carmel are all located a few short hours west of the College campus. The famous wine regions of Napa, Sonoma, and Mendocino counties are only 90 miles from campus.
The CNUCOP offers a 0-6 Direct Entry Doctor of Pharmacy program as well as a four-year traditional Doctor of Pharmacy program. The didactic component of the curriculum is comprised of an initial sequence of biomedical, clinical, pharmaceutical, and social and administrative science courses followed by a series of organ system-based modules that integrate pathophysiology, pharmacology, medicinal chemistry, and pharmacotherapeutics concepts into the management of acute and chronic disease states. The curriculum is largely delivered using active learning, specifically team-based learning, in order to enhance student learning and develop the students’ clinical reasoning, problem-solving, teamwork, and self-directed learning skills.

The experiential component of the curriculum includes 300 hours of introductory pharmacy practice experience over the first three academic years and 1440 hours of advanced pharmacy practice experience in the final academic year. The experiential program has been designed to develop student skills, attitudes, values, judgment, professional behavior, and expertise in patient-centered care.

**TEAM-BASED LEARNING**

Team-Based Learning (TBL) is a well-defined educational strategy that the College uses throughout the first three years of the curriculum. TBL promotes judgment, mastery of content, communication, teamwork skills, problem solving, and critical thinking. TBL emphasizes the importance of individual accountability, group collaboration, and the application of basic concepts to work through team assignments. The role of the instructor is to clearly articulate the learning objectives, create challenging problems for students to solve, and probe their reasoning in reaching conclusions.

At the beginning of each course, teams are formed which are comprised of 5-6 students based on various criteria that will help achieve an even distribution of resources across all teams. Students will remain with the same team throughout the semester for each course. All students will be accountable for their individual and group work. Peer evaluations will be performed once or twice a semester. The format for TBL is comprised of three phases, as shown in the diagram on the next page.
In Phase 1, learners study independently outside of class to master identified objectives. This may involve recorded mini lectures, reading assignments, or other activities. In Phase 2, individual learners complete a multiple choice exam to assure their readiness to apply the concepts learned during Phase 1. This is referred to as the Individual Readiness Assurance Test (iRAT). Then the teams retake the same multiple choice test and reach a consensus on the answer for each question. This is referred to as the Team Readiness Test (tRAT). Written appeals may be submitted by any team who would like to challenge the instructor on the correct answer.

The instructor will provide immediate feedback on the concepts covered on the exam and will consider giving additional points to teams if their appeals are upheld. In Phase 3, which may last several class periods, teams will complete in-class assignments that promote collaboration, use of Phase 1 and Phase 2 knowledge, and identification of learning deficiencies. At designated times, all teams will simultaneously share their teams' answers to the assignment for easy comparison and immediate feedback. This three-phase sequence may be repeated 5-7 times during the course.
EXPERIENTIAL EDUCATION

The Experiential Education Program (EEP) component is delivered in collaboration with full-time Practice Faculty and Adjunct Faculty. This program helps our students extend their academic education toward their practical experience. Creating this fundamental link between knowledge and practice helps to build core competencies, while instilling values and attitudes essential to providing patient care in the pharmacy setting. Additionally, Experiential Education provides students with the fundamental skills to prepare for careers in healthcare administration, public policy, and other areas of the profession of pharmacy.

The EEP is a core component of CNUCOP’s educational plan. The experiential-based programs span a time frame of six semesters. The programs are tiered as Introductory Pharmacy Practice Experiences (IPPEs) and Advanced Pharmacy Practice Experiences (APPEs). The overarching goal of the EEP is to provide exposure to a broad range of patient and inter-professional groups within different practice environments that are representative of contemporary pharmacist-provided patient care.

During the first two IPPE experiences, students complete rotations in various community settings. As they progress to the third through fourth experiences, the students complete IPPE rotations in various specialty pharmacy and hospital pharmacy settings.

Once the students successfully complete IPPE rotations and academic classes, they advance to their APPE rotations. The students complete institutional APPE rotations in community, ambulatory care, general medicine, hospital pharmacy, and two specialty pharmacy settings. APPE rotation sites are located throughout California and in the Reno, Nevada area.

The overall goal is to prepare our Doctor of Pharmacy candidates with the depth and breadth of pharmacy experiences that suit their professional interests, while preparing them for their upcoming licensing examination.
Research

CNUCOP is dedicated to advancing the art and science of pharmacy. Our new 2000 square feet research facility at the Elk Grove campus contains laboratory space and equipment for the Department of Pharmaceutical and Biomedical Sciences to conduct *in vitro* research studies. Through collaborations with other local institutions, CNUCOP also provides basic science faculty members with the capacity to perform *in vivo* research studies. Current research interests of our faculty are provided below. For additional information about faculty research accomplishments and scholarship, please visit the Research section of our CNUCOP webpage.

**Faculty Research Interests**

**Department of Clinical & Administrative Sciences**

- Dr. Diana Cao (Chair): Cardiovascular Pharmacotherapy in the Acute Care Setting
- Dr. Olivia Phung (Vice Chair): Meta-Analyses and Diabetes Treatment
- Dr. Jennifer Renee Courtney: Prescription Drug Abuse and Cannabis
- Dr. Bin Deng: Teaching and Learning in Pharmacy Education
- Dr. Matthew Horton: Chronic Kidney Disease, Acute Kidney Injury, and Therapeutic Drug Dosing in Patients with Renal Impairment
- Dr. Eugene Kreys: Pharmacoepidemiology
- Dr. Tiffany-Jade Kreys: Therapeutic Outcomes in Patients with Mood and Thought Disorders
- Dr. Justin Lenhard: Antimicrobial Pharmacodynamics against Multidrug Resistance Pathogens
- Dr. Song Oh: Anticoagulation in Critical Care, Interprofessional Education and Resuscitation Training
- Dr. Victor Phan: Global Health and the Underserved
- Dr. Peter Tenerelli: Professionalism, Leadership, and Organizational Redesign
- Dr. Priyanka Singh: Medication Safety, Transitions of Care, and Expanding the Scope of Pharmacy Practice
- Dr. Erika Titus-Lay: Substance Abuse Disorders
- Dr. Tuan Tran: Data Analytics and Predictive Modeling for Educational Applications/Public Health Intelligence

**Office of Experiential Education**

- Dr. Jeff Nehira (Chair): Regulatory Compliance and Experiential Education Development
- Dr. Jason Bandy (Vice Chair): Gamification in Education, Anticoagulation and Thrombosis, and Hypertension
- Dr. Tony Eid (Director, APPE): Cardiovascular Risk Reduction/Preventive Cardiology
- Dr. Welly Mente (Director, IPPE): Clinical Teaching
- Dr. Joe Hubbard: Medication Therapy Management
- Dr. Kristine Thomas: Critical Care and Infectious Diseases

**Pharmaceutical and Biomedical Sciences Department**

- Dr. Uyen Le (Chair): Nanotechnology-based Drug Delivery
- Dr. Tibebe Woldemariam (Vice Chair): Natural Products Chemistry
- Dr. Eman Atef: Nanoparticle Formulations, Improving the Solubility of Small Molecules, PK simulation
- Dr. Lakshmi Chaturvedi: Cancer and Cell Signaling
- Dr. Suzanne Clark: Team-Based Learning Research
- Dr. Ahmed El-Shamy: High Throughput Screening of Novel Antiviral Therapeutics
- Dr. Leo Fitzpatrick: Inflammatory Bowel Disease (Drug Discovery and Development)
- Dr. Linh Ho: Mitochondrial Sirtuins-epigenetics and metabolic disease
- Dr. James Jin: CD4 T Cell S1P1 Receptor Signaling in the Pathogenesis of Cardiac Fibrosis
- Dr. Simeon Kotchoni: Metabolomics, Proteomics, Drug design/discovery, Pharmacognosy, Diabetes, Cancers
- Dr. Ashim Malhotra: Pancreatic Cancer
- Dr. Islam Mohammed: Role of Vascular micro-RNAs in Atherosclerosis
- Dr. Fitsum Sahle: Drug Delivery, Nanotechnology, and Tissue Engineering
- Dr. Ruth Vinal: Prostate and Bladder Cancer Research
- Dr. Hongbin Wang: Complement Innate Immunity in Sepsis, Diabetes, and Cancer
Residency Information

California Northstate University College of Pharmacy aims to develop pharmacy residents who possess the knowledge, skills, and philosophy required to implement rational pharmacotherapy that optimizes patient outcomes in a collaborative environment.

California Northstate University College of Pharmacy offers a total of seven Post-Graduate Year One (PGY1) Pharmacy Residency positions, in association with Sutter Medical Center (Sacramento and East Bay), Adventist Health Lodi Memorial Hospital, and Adventist Health White Memorial in Southern California. Each residency program provides a rich, comprehensive learning experience through advanced clinical practice rotations and academic teaching opportunities. The PGY1 residency is one-year in length. Examples of core and longitudinal rotations offered through the PGY1 residency are provided below.

- Pharmacy Practice
- Ambulatory Care
- Critical Care
- Emergency Medicine
- Total Parenteral Nutrition
- Infectious Diseases
- Medication Safety
- Hospital Administration
- Antimicrobial Stewardship
- Drug Information
- Research
- Teaching Certificate Program (CNUCOP)

CNUCOP’s PGY1 residents have the opportunity to create and deliver didactic lectures at the College of Pharmacy, serve as preceptors to pharmacy students, work collaboratively with healthcare teams to advance patient outcomes, develop and present a research project at Western States Conference, and complete and submit a teaching portfolio upon completion of the residency program. Additional information about our pharmacy residency program is available by contacting Dr. Welly Mente, Assistant Professor and Residency Program Director, at wmente@cnsu.edu or by calling 916-676-7400.

The 2019-2020 PGY1 residents include:

- Tiffany On, PharmD (Adventist Health Lodi Memorial Hospital/CNUCOP)
- Gordon Sproul, PharmD (Sutter Health Sacramento Sierra Region/CNUCOP)
- Muhamod (Ishmael) Saied, PharmD (Sutter Health East Bay/CNUCOP)
- Summer Faria, PharmD (Sutter Medical Center Sacramento/CNUCOP)
- Winifred Owusu, PharmD (Adventist Health White Memorial/CNUCOP)
- Jinjing Cheng, PharmD (Sutter Health East Bay/CNUCOP)
Admissions

Applying for Admission

1. **Pre-Application Check.** Before beginning the application process, visit our website at https://pharmacy.cnsu.edu/admissions/admission-information for detailed application instructions and admission information.

2. **Applications.**
   - **0-6 Direct Entry PharmD Program** applicants must submit an electronic application through PharmDirect available at https://pharmdirect.liaisoncas.com/applicant-ux/#/login.

3. **Traditional Four-Year PharmD Program Admission Requirements**
   - GPA – Minimum cumulative GPA of 2.60 on a 4.00 scale (a 2.60 Science GPA is preferred)
   - Prerequisite coursework- Must be completed with a grade of C- or higher
   - AP scores of 3 or higher are accepted for prerequisite coursework.

**Prerequisite Coursework Requirements** (minimum 51 semester or 72 quarter units)

<table>
<thead>
<tr>
<th>Academic Prerequisites</th>
<th>Estimated Units (Semester/Quarters)</th>
<th>Estimated Units (Quarter/Quarter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Chemistry*</td>
<td>2 / 3</td>
<td>8 / 12</td>
</tr>
<tr>
<td>Organic Chemistry*</td>
<td>2 / 3</td>
<td>8 / 12</td>
</tr>
<tr>
<td>Biochemistry or Cell &amp; Molecular Biology</td>
<td>1 / 1</td>
<td>3 / 4</td>
</tr>
<tr>
<td>General Biology*</td>
<td>2 / 3</td>
<td>8 / 12</td>
</tr>
<tr>
<td>Microbiology</td>
<td>1 / 1</td>
<td>3 / 4</td>
</tr>
<tr>
<td>Human Physiology</td>
<td>1 / 1</td>
<td>3 / 4</td>
</tr>
<tr>
<td>Physics</td>
<td>1 / 1</td>
<td>3 / 4</td>
</tr>
<tr>
<td>Calculus</td>
<td>1 / 1</td>
<td>3 / 4</td>
</tr>
<tr>
<td>Statistics</td>
<td>1 / 1</td>
<td>3 / 4</td>
</tr>
<tr>
<td>Public Speaking</td>
<td>1 / 1</td>
<td>3 / 4</td>
</tr>
<tr>
<td>English Composition I and II</td>
<td>2 / 2</td>
<td>6 / 8</td>
</tr>
</tbody>
</table>

**General Education Requirements**

Applicants must complete at least 12 semester units or 18 quarter units of general education. Applicants who have or will have earned a Bachelor’s Degree prior to matriculation will have completed the General Education requirements as a component of their Bachelor’s Degree program. More detailed information about our General Education requirements is available on our website. If you have questions about the application process, please contact our admission advisors at COPAdmissions@cnsu.edu.
4. 0-6 Direct Entry PharmD Program Admission Requirements

The requirements provided below must be met in order to be considered for admission into the 0-6 Direct Entry PharmD Program.

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>GPA</th>
<th>SAT (Math and Reading)** OR ACT**</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 6 Direct Entry PharmD Program</td>
<td>3.20+</td>
<td>1290*</td>
</tr>
</tbody>
</table>

*Math and Chemistry subject area tests are highly recommended
**Standardized test scores are not required if prospective applicant is a college student.

Additionally, to advance to the professional component of PharmD program at the College of Pharmacy, the student must meet the following requirements:

- Successfully complete the pre-professional coursework with a grade of C or higher
- Maintain a cumulative minimum GPA of a 3.0
- Maintain fulltime status
- Participate in at least one COP campus activity per year while attending CHS
- Meet California Board of Pharmacy requirements for professional licensure

For more detailed admissions information, please visit the Admissions section of the CNUCOP webpage available at: https://pharmacy.cnsu.edu/admissions/admission-information or contact COPadmissions@cnsu.edu.
California Northstate University College of Pharmacy's (CNUCOP) Inaugural Pharmacy Primer Program was established during the summer of 2018, with a mission of enhancing the academic success of first-year pharmacy students in the Doctor of Pharmacy program. The Primer Program is a voluntary program that is four days in-length and is offered to all incoming CNUCOP students. During the Primer Program, important material from prerequisite coursework is reviewed by College of Pharmacy faculty, and new material related to the courses delivered during the first-year of the pharmacy program is introduced. Due to the great success of the inaugural Primer program, the College of Pharmacy will offer the Primer Program annually, one week prior to New Student Orientation. In addition to providing incoming pharmacy students the opportunity to get a head start on their PharmD, the Primer also gives students a chance to network with one another, through social activities held at the conclusion of each day of the program. The core material that is reviewed in the Pharmacy Primer Program includes:

- Biochemistry
- Calculations
- Medicinal Chemistry
- Pathophysiology
- Pharmacology
- Physiology

The inaugural 2018 Pharmacy Primer Program concluded with a Completion Ceremony, during which time students were recognized for their participation in the Primer Program. A photo from the Completion Ceremony is displayed below.
Student Involvement
Student Involvement

Students are actively involved in helping to shape the future of the school and the profession by serving on committees, actively participating in student government and professional organizations. The college recognizes the significant role of students in institutional decision-making. In order to facilitate this role, we encourage students to serve on committees with faculty and staff to review current policy, assess dynamics within the educational component of their program, as well as addressing future needs and concerns of the pharmacy profession. Students are engaged as members of the Curriculum Committee and Student Body Council.

CNU students thrive in their pursuit of helping others by becoming involved in community service activities, such as the American Heart and Stroke Association, the American Diabetes Association, senior communities, and Celebrando Nuestra Salud – a community health fair serving the Hispanic community in the Sacramento region. Students also promote the study of science and pursuit of careers in health care at local colleges and high schools.

Students are encouraged to cultivate involvement in professional organizations both on and off campus. The school helps set this involvement by enrolling all students as members in the CNUCOP student chapter of the California Pharmacist Association (CPhA). Many of the students are also involved in professional organizations of the California Society of Health-System Pharmacist (CSHP), the American Pharmacists Association (APhA), the American Society of Health-System Pharmacists (ASHP), the National Community Pharmacists Association (NCPA), and the Academy of Managed Care Pharmacy (AMCP). Many of our current student organization leaders have taken the initiative to become involved off-campus by becoming actively engaged in the local Sacramento Valley Pharmacist Association and California Society of Health System Pharmacist. In this capacity, the students gain valuable professional development skills, assist efforts on current legislative initiatives, and participate in discussions concerning local issues currently facing the profession.

Other exciting student professional organizations at California Northstate University College of Pharmacy include: the American College of Clinic Pharmacy (ACCP) student chapter, the College of Psychiatric and Neurologic Pharmacists (CPNP), the Student National Pharmaceutical Association (SNPhA) and several other diversity and special interest clubs. The College is also home to three professional pharmacy fraternities: Kappa Psi, Phi Delta Chi, and Rho Pi Phi, along with Rho Chi, a national academic honor society in pharmacy, and Phi Lambda Sigma, a pharmacy leadership society.
Contact Us

California Northstate University
College of Pharmacy
9700 West Taron Drive
Elk Grove, CA 95757
University Website: www.cnsu.edu
Admissions email: COPadmissions@cnsu.edu
Phone: (916) 686-7400