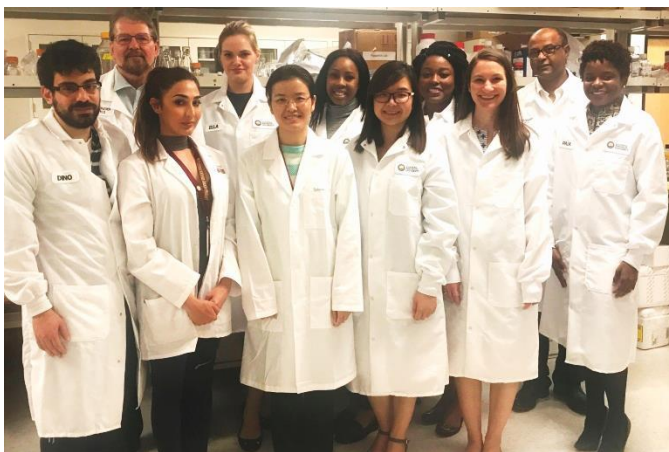




**CALIFORNIA NORTHSTATE
UNIVERSITY COLLEGE OF
PHARMACY**

RESEARCH IN 2019

**Address: 9700 West Taron Drive
Elk Grove, CA 95757**



RESEARCH AT CALIFORNIA NORTHSTATE UNIVERSITY COLLEGE OF PHARMACY

California Northstate University College of Pharmacy (CNUCOP) is dedicated to advancing the science and art of pharmacy. Faculty and student research/scholarship initiatives are a critical component of the CNUCOP mission.

Research Facilities

Our 2100 square feet research facility at the Elk Grove campus (see the picture on page 3) contains laboratory space and equipment for faculty members to conduct *in vitro* research studies. We recently completed a new laboratory wing encompassing about 900 square feet of additional research space (picture on bottom of page 3).



Original Lab Facility



Section of New Laboratory Wing

Through agreements with other local institutions (UC Davis Cancer Center and Antibodies Incorporated), CNUCOP also provides basic science faculty members with the capacity to perform *in vivo* research studies.

An aerial picture of the Antibodies Inc. facility is shown here.



Research Focus Areas at CNUCOP

Research projects are being conducted by CNUCOP faculty within several focus areas. These research focus areas are highlighted on pages 5 through 10.

CANCER RESEARCH

Faculty	Department	Research Interest
Ruth Vinall PhD	Pharmaceutical & Biomedical Sciences	Prostate & Bladder Cancer
Ashim Malhotra PhD	Pharmaceutical & Biomedical Sciences	Pancreatic Cancer

CARDIOVASCULAR DISEASE RESEARCH

Faculty	Department	Research Interest
Diana Cao PharmD	Clinical & Administrative Sciences	CV Pharmacotherapy in Acute Care
Tony Eid PharmD	Experiential Education	Preventive Cardiology
Zhuqiu (James) Jin PhD	Pharmaceutical & Biomedical Sciences	S1P Receptor Signaling & Cardiac Fibrosis
Islam Mohamed PhD	Pharmaceutical & Biomedical Sciences	Role of Vascular micro-RNAs in Atherosclerosis

CLINICAL CARE & OUTCOMES RESEARCH

Faculty	Department	Research Interest
Eugene Kreys PharmD, PhD	Clinical & Administrative Sciences	Medication Adherence on Clinical Outcomes
Bing Den PharmD	Clinical & Administrative Sciences	Primary Care in Underserved Areas
Joe Hubbard PharmD	Experiential Education	Medication Therapy Management

DATA ANALYSIS SCHOLARSHIP

Faculty	Department	Research Interest
Tuan Tran PhD	Clinical & Administrative Sciences	Data Analysis and Mining

DIABETES RESEARCH & SCHOLARSHIP

Faculty	Department	Research Interest
Linh Ho PhD	Pharmaceutical & Biomedical Sciences	Mitochondrial Sirtuins & Type 2 Diabetes
Olivia Phung PharmD	Clinical & Administrative Sciences	Meta-analyses and Diabetes Treatment

DRUG DELIVERY & SOLUBILITY RESEARCH

Faculty Member	Department	Research Interest
Eman Atef PhD	Pharmaceutical & Biomedical Sciences	Drug Solubility
Uyen Le PhD	Pharmaceutical & Biomedical Sciences	Drug Delivery & Targeting

INFLAMMATION RESEARCH

Faculty	Department	Research Interest
Leo Fitzpatrick PhD	Pharmaceutical & Biomedical Sciences	Inflammatory Bowel Disease (Drug Discovery)
Lakshmi Chaturvedi PhD	Pharmaceutical & Biomedical Sciences	Fibrosis and Crohn's Disease
Hatem Elshabrawy PhD	Pharmaceutical & Biomedical Sciences	Macrophages & Rheumatoid Arthritis
Hongbin Wang PhD	Pharmaceutical & Biomedical Sciences	Complement Fragment C4a Interaction with PAR

MICROBIOLOGY & VIROLOGY RESEARCH

Faculty Member	Department	Research Interest
Justin Lenhard PharmD	Clinical & Administrative Sciences	In Vitro Suppression of Antibacterial Resistance
Ahmed El-Shamy	Pharmaceutical & Biomedical Sciences	Virus and Host Cell Interactions

NATURAL PRODUCTS & PLANT PHYSIOLOGY
RESEARCH

Faculty Member	Department	Research Interest
Simeon Kotchoni PhD	Pharmaceutical & Biomedical Sciences	Plant Physiology
Tibebe Woldemariam PhD	Pharmaceutical & Biomedical Sciences	Natural Products Chemistry

PSYCHIATRY & SUBSTANCE ABUSE
RESEARCH

Faculty Member	Department	Research Interest
Tiffany Kreys PharmD	Clinical & Administrative Sciences	Anxiety Disorders
Erika Titus-Lay PharmD	Clinical & Administrative Sciences	Substance Abuse Disorders
Priyanka Singh PharmD	Clinical & Administrative Sciences	Psychotropic medications and impact on cardiovascular system

**TEAM BASED LEARNING (TBL) & TEACHING
RELATED SCHOLARSHIP**

Faculty Member	Department	Research Interest
Suzanne Clark PhD	Pharmaceutical & Biomedical Sciences	TBL Related Scholarship
Uyen Le PhD	Pharmaceutical & Biomedical Sciences	Teaching Scholarship
Welly Mente PhD	Clinical & Administrative Sciences	Clinical Teaching Related Scholarship

Further pertinent information on **Faculty Research and Scholarship Interests, as well as publications** can be found within the research section of the **CNUCOP website**. The website link is attached here: <http://pharmacy.cnsu.edu/>

Editorial Board and Grant Reviewers

Many CNUCOP faculty members serve as editors or on editorial boards of peer-review scientific journals, as well as reviewers for external grants. Lists of these faculty members are shown on page 11.

Faculty Member	Editor/Editorial Board
Ahmed ElShamy	Medicine
Diana Cao	California Journal of Health-System Pharmacists
Faculty Member	Editor/Editorial Board
Tibebe Woldemariam	Journal of Pharmacovigilance Journal of Integrated Omics Journal of Pharmacology & Clinical Toxicology Journal of Medicinal Chemistry & Toxicology
Leo Fitzpatrick	World Journal of Gastrointestinal Pathophysiology Pharmacy & Pharmacology International Journal InflammoPharmacology

Faculty Member	External Grant Reviewer
Justin Lenhard	UK Based Medical Research Council
Ruth Vinall	ASHP New Investigator Award
Islam Mohamed	American Heart Association
Faculty Member	External Grant Reviewer
Leo Fitzpatrick	Department of Defense: IBD Grants

CNUCOP Seed Grant Process: The purpose of the internal Seed Grant Award program is to provide funds to CNUCOP faculty members for scholarly activities that will generate a research publication(s) and/or preliminary data for external funding. Currently, there are **six 2019 CNUCOP Seed Grant winners** (see below).

1) **Dr. James Jin:** Exploration of Molecular Mechanisms in Reversible Differentiation of Cardiac Myofibroblasts to Fibroblasts

2) **Dr. Justin Lenhard:** Optimizing the Use of Antibacterials against Mixed Populations of Uropathogens

3) **Dr. Shankar Chaturvedi:** Inhibition of S1P3 Receptor as a Therapeutic Approach for Fibrotic Crohn's Disease

4) **Dr. Tibebe Woldemariam:** Role of Novel Bioactive Natural Plant-Derived Products in the Modulation of Obesity

5) **Dr. Linh Ho:** Investigate Effect of Sirt3 Inhibitor on Adipogenesis and Insulin Signaling Pathway in Mice

6) **Dr. Ashim Malhotra:** Preclinical Investigation of Sumac and Artichoke Plant Extracts in Pancreatic Cancer

Student Research at CNUCOP: The CNUCOP administration encourages student research with faculty mentors. In 2016, CNUCOP initiated an inaugural Student Summer Research Fellowship

Program with two student awardees (Pachai Moua and Michael Yadao).

During 2017 two summer research fellowships were awarded to CNUCOP pharmacy students. The two fellowship awardees for 2017 were Jessica **Dallalzadeh** and **Vinna Nam**. Pertinent information regarding these fellowship projects are shown on pages 13 and 14.

Summer Research Fellow: **Jessica Dallalzadeh**
[P4 Student]



“I was able to further my knowledge in cardiovascular disease from a research perspective. I am forever grateful to have had this opportunity.” Jessica Dallalzadeh

Faculty Mentor: Dr. Zhuqiu (James) Jin

Project: A novel mechanism underlies reversal of myofibroblast differentiation by phorbol 12-myristate 13-acetate

Summer Research Fellow: **Vinna Nam** [P4 student]



“I would like to thank CNUCOP for having and sponsoring this great fellowship available for students and I hope CNUCOP will expand the fellowship opportunities to more students in the future.” Vinna Nam

Faculty Mentor: Dr. Eugene Kreys

Project: Trends of Hospitalizations as a Result of Infectious Causes in Patients with Autoimmune Diseases

On April 17, 2018 three more summer research fellowships were awarded to current CNUCOP pharmacy students for the fellowship cycle. Relevant information regarding the student awardees and their faculty mentors are shown below

STUDENT NAME (CLASS)	FACULTY RESEARCH ADVISOR
 <p data-bbox="373 722 487 755">Eric Tang (P1)</p>	 <p data-bbox="682 722 905 755">Eugene Kreys PharmD, PhD</p>
 <p data-bbox="345 925 547 958">Luis Tolento Cortes (P1)</p>	 <p data-bbox="689 922 867 954">Simeon Kotchoni PhD</p>
 <p data-bbox="331 1128 544 1161">Christina Stephenson (P2)</p>	 <p data-bbox="693 1128 885 1161">Erika Titus-Lay PharmD</p>

More pertinent information regarding these fellowship projects are shown on pages 16 through 18.

Summer Research Fellow: **Eric Tang** [P2 student]

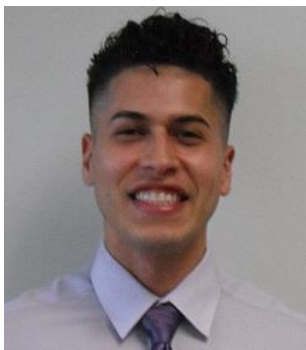


“The summer research fellowship greatly contributed towards my academic and professional growth. It was a rewarding opportunity for developing my skills in the research aspect of pharmacy, and allowing me to collaborate with an experienced research faculty member.” Eric Tang

Faculty Mentor: Dr. Eugene Kreys

Project: Treatment patterns of high cost injectable medications for the treatment of rheumatoid arthritis (RA) and type II diabetes (T2DM)

Summer Research Fellow: **Luis Tolento Cortes**
[P2 student]



“The summer research fellowship aided me in developing critical research skills and knowledge that I can translate into pursuing a career in industry/research. I am grateful for this unique opportunity.” Luis Tolento Cortes

Faculty Mentor: Dr. Simeon Kotchoni

Project: Identification and medicinal properties of novel compounds from natural products against cancer cell lines.

Summer Research Fellow: **Christina Stephenson**
(P3 Student)



"In completing the summer fellowship, I've gotten experience that I will absolutely be able to apply to projects in future endeavors after CNU." Christina Stephenson

Faculty Mentor: Dr. Erika Titus-Lay

Project: Health Outcomes Associated with the Treatment of Mental Illness in Primary Care

The summer research fellowship program for 2019 will start on May 31.

Key Research Personnel (CNUCOP)

Under the guidance of Dean Hieu Tran (CNUCOP) and Dr. Philip Mack (VP of Research at CNU), key research personnel at CNUCOP include **Dr. Leo Fitzpatrick, Mr. George Talbott and Dr. Tibebe Woldemariam**. Dr. Fitzpatrick has served as the Assistant Dean of Research at CNUCOP since July of 2015. He is also the current grant signing officer for CNUCOP. Mr. Talbott has a M.S. Degree and supervises the Elk-Grove campus research laboratory as the lab manager. Dr. Woldemariam is the current chair of the research committee at CNUCOP. Dr. Fitzpatrick's biographical sketch and photograph are shown here.

Leo R. Fitzpatrick Ph.D. (Assistant Dean for Research)

Dr. Fitzpatrick has approximately 30 years of relevant biological and drug discovery research experience.



Dr. Fitzpatrick received a Ph.D. in Physiology from George Washington University. He began his scientific career by doing a post-doctoral fellowship

(1984-1986) at the University of Texas Medical School (Houston). From 1986 to 2003, Dr. Fitzpatrick was involved in drug discovery and development at three pharmaceutical companies. Subsequently, Dr. Fitzpatrick began a 10 year (2003-2013) faculty position at the Penn State College of Medicine (Hershey, PA). While at Penn State, he continued ongoing research related to IBD, infectious colitis and arthritis. His research collaborations resulted in the funding of 15 academic-related grants and contracts with pharmaceutical/biotechnology companies. Dr. Fitzpatrick has served on the editorial board of *World Journal of Gastrointestinal PathoPhysiology* and *Pharmacy & Pharmacology International Journal*, as well as a reviewer for several scientific journals including *InflammoPharmacology*, *JPET*, and *Inflammatory Bowel Diseases*. Dr. Fitzpatrick has published 57 original research articles, as well as numerous conference-related abstracts.

Further Information: Please direct any future inquiries related to the contents of this booklet and/or ongoing research initiatives at CNUCOP to:
Leo R. Fitzpatrick Ph.D.

Assistant Dean of Research
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Telephone: 916-686-8364