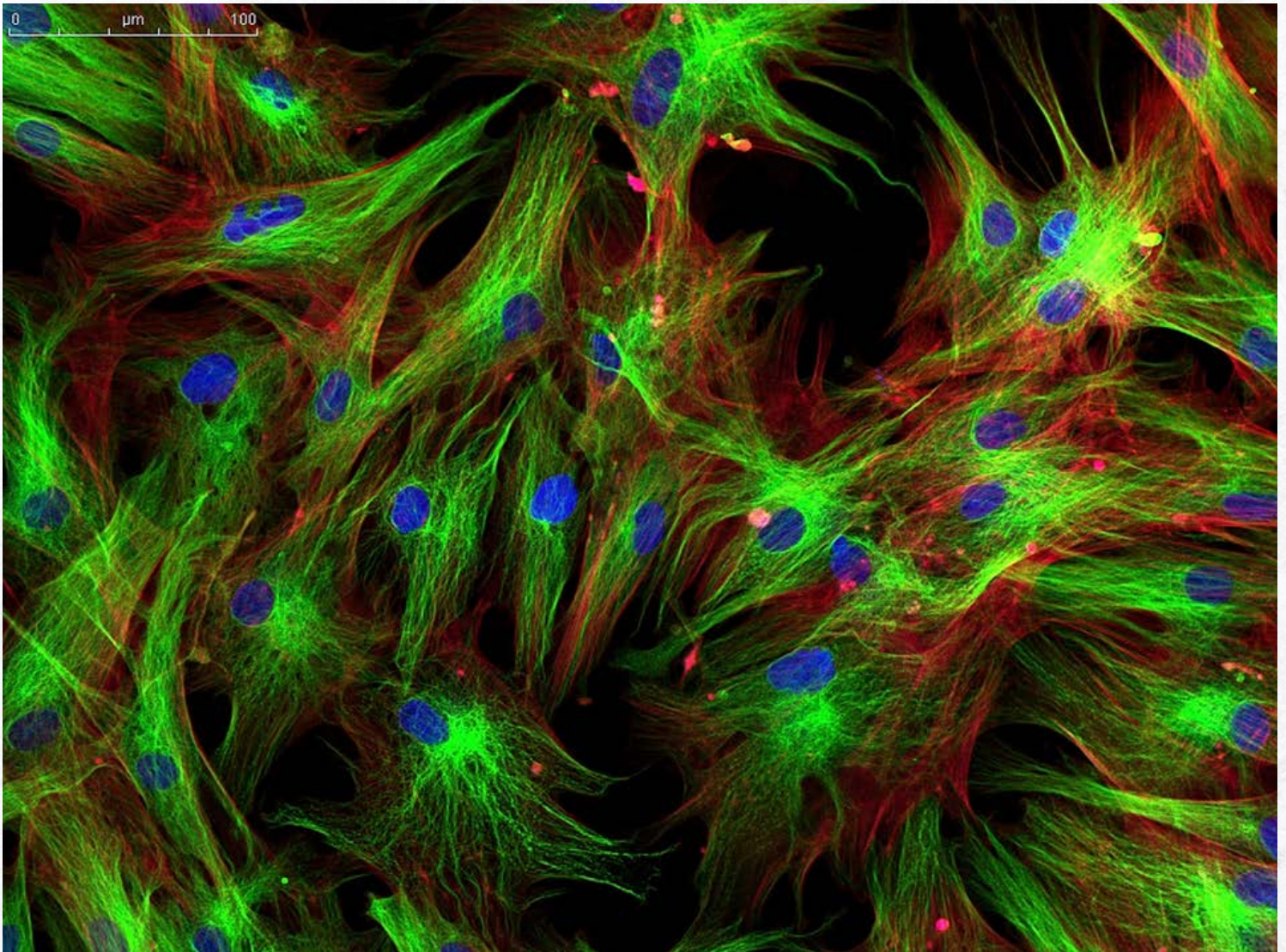


2024

RESEARCH NEWSLETTER

CALIFORNIA NORTHSTATE UNIVERSITY
COLLEGE OF PHARMACY (CNUCOP)



California Northstate University College of Pharmacy is pleased to recognize the accomplishments of our faculty and student researchers.



A Message from Dr. Ruth Vinall, CNUCOP Assistant Dean of Research



Dear Colleagues,

We have had another successful year for our CNUCOP research program! Thank you to Dean Xiaodong Feng and to Dr. Fakhru Ahsan, our CNU Chief Scientific Officer, for their continual and strong support of CNUCOP research. Also thank you to our Research Lab Manager, Ms. Melanie Rose, who helps us keep everything in working order and helps us organize and streamline our efforts. Lastly, thank you to all of the faculty members, students, staff, alumni, and preceptors who are active in research and have directly contributed to our success this year as well as to those of you who cheer us on from the sidelines. We appreciate all of you!

We continue to have strong output in regard to our key metrics: research grant funding, publications, and presentations. Per AACP, we are currently ranked #74 out of all US PharmD programs for Federal research funding. CNUCOP faculty members who currently have Federal funding include Dr. Fakhru Ahsan and Dr. Dipongkor Saha. CNUCOP also received funding from ASHP this past year (\$10,000 award to Dr. Tarek Kassem, CNUCOP Assistant Professor) as well as funding from SVPPhA (\$500 award to Dr. Justin Lenhard) and AFPE (\$5,000 award to Ms. Xinge Zheng, CNUCOP P3 student). Four of our faculty members received internal seed grant funding to support their research and 6 CNUCOP received student summer research fellowships. In 2023, our CNUCOP faculty members, students, staff, alumni, and preceptors collectively published 18 peer reviewed journal articles and one book chapter - impressively, 17 CNUCOP students served as co-authors on these publications. There was a total of 33 research presentations given: 21 poster presentations and 12 podium presentations. Again, our CNUCOP students had a strong showing with 35 of them serving as co-authors. Information relating to these and other successes as well as more detailed information about our research program can be found in this newsletter and on our CNUCOP website <https://pharmacy.cnsu.edu/dept/research/>

I know that 2024 will bring us new research successes and I can't wait to share these with you all. Thank you!

Ruth Vinall

Ruth Vinall, Ph.D.

Professor and Assistant Dean of Research, CNUCOP

Research Accomplishments

2023

Publications, 2023; TOTAL OF 15 PUBLICATIONS (15 journal articles), (17 student co-authors)

(Bolded = CNUCOP faculty member, underlined = CNUCOP student, italics = CNUCOP staff member)

1. Kanika Gulia, Ahmed Hassan, **Justin Lenhard**, and Abdelbasset Farahat. Escaping ESKAPE resistance: *in vitro* and *in silico* studies of multifunctional carbamimidoyl-tethered indoles against antibiotic-resistant bacteria. Royal Society Open Science. 2023. <https://pubmed.ncbi.nlm.nih.gov/37090961/>
2. Brent Luu, Sampath Wijesinghe, **Tarek Kassem**, Justin Lien, Darrick Luu, **Rynee Wijesinghe**, Leianna Luu, and Gerald **Kayingo**. Drugs in primary care that may alter COVID-19 risk and severity. JAAPA. 2023. [Drugs in primary care that may alter COVID-19 risk and severity - PubMed \(nih.gov\)](https://pubmed.ncbi.nlm.nih.gov/37090961/)
3. **Sang Phan**, **Cafrey He Feng**, **Raymond Huang**, **Zeng X Lee**, **Yer Moua**, **Olivia Phung**, and **Justin Lenhard**. Relative abundance and detection of *Pseudomonas aeruginosa* from chronic wound infections globally. Microorganisms. 2023. <https://pubmed.ncbi.nlm.nih.gov/37317184/>
4. **Peter Tenerelli**, **Patrick Joseph Tagulao Cervania**, **Ekjot Dhillon**, **Alexia Romero**, **Krista Tenerelli**, **Thuong Thai**, and **Jason Bandy**. Impact of Experiential Education on the Intersectionality of Pharmacy Student Personal and Professional Identity Formation. AJPE. 2023. <https://www.sciencedirect.com/science/article/abs/pii/S0002945923001274>
5. **Jennifer Courtney**, **Kelsea Gallegos Aragon**, **Monica Douglas**, **Ashim Malhotra**. A Resource Compendium for Embedding LGBTQIA+ Patient Care in the Professional Identity of Community Pharmacists. AJPE. 2023. <https://www.sciencedirect.com/science/article/abs/pii/S0002945923001286>
6. **Malhotra, A.**, Moultry AM., Martin, TS., Franklin, CJ., Yarbrough, T. and Hughes, J., A critical appraisal of educational theory to examine HBCU and Black students' identity formation. AJPE. 2023. <https://pubmed.ncbi.nlm.nih.gov/37336325/>
7. **Muhar, BK.**, **Nehira, J.**, **Malhotra, A.** and **Kotchoni, SO.** The race for Covid-19 vaccines: the various types and their strengths and weaknesses. Journal of Pharmacy Practice. 2023. <https://pubmed.ncbi.nlm.nih.gov/35723017/>
8. **Tanvirul Hye**, Md **Riajul Hossain**, **Dipongkor Saha**, **Tahmina Foyez**, and **Fakhrul Ahsan**. Emerging biologics for the treatment of pulmonary arterial hypertension. J Drug Target. 2023. <https://pubmed.ncbi.nlm.nih.gov/37026714/>
9. **Hye, T.** **Moinuddin, SM.**, **Sarkar, T.**, **Nguyen, T.**, **Saha, S.** and **Ahsan, F.** An evolving perspective on novel modified release drug delivery systems for inhalational therapy. Expert Opin Drug Deliv. 2023. <https://pubmed.ncbi.nlm.nih.gov/36720629/>
10. **El-Sayed SM**, **Ahmed SA**, **Gulia K**, **Lenhard JR**, **Hassan AHE**, **Farahat AA**. Small Molecules Incorporating Privileged Amidine Moiety as Potential Hits Combating Antibiotic-Resistant Bacteria. Pharmaceuticals. 2023.
11. **Titus-Lay E**, **Nehira J**, **Courtney J**, **Jee J**, **Kumar M**, **Tiet J**, **Le V**, **Durbin-Johnson B**, **Chen MS Jr**, **Vinall R**. A pharmacist-led community-based survey study: Determining the impact of the Covid-19 pandemic on actionable factors associated with worse cancer outcomes and cancer health disparities. Exploratory Research in Clinical and Social Pharmacy. 2023. <https://pubmed.ncbi.nlm.nih.gov/37533758/>
12. **Hongbin Wang**, **Mia Borlongan**, **Akseli Hemminki**, **Saru Basnet**, **Naresh Sah**, **Howard Kaufman**, **Samuel Rabkin**, and **Dipongkor Saha**. Viral vectors expressing interleukin 2 for cancer immunotherapy. Human Gene Therapy. 2023. <https://pubmed.ncbi.nlm.nih.gov/37578106/>
13. **Borlongan MC**, **Saha D**, **Wang H**. Tumor Microenvironment: A Niche for Cancer Stem Cell Immunotherapy. Stem Cell Rev Rep. 2023. <https://pubmed.ncbi.nlm.nih.gov/37861969/>
14. **Jennifer Courtney**, **Amy Ferrarotti**, **Tuan Tran**, and **Erika Titus-Lay**. Layperson knowledge and perceived barriers with obtaining naloxone. Journal of Contemporary Pharmacy Practice. 2023. Doi: 10.37901/jcphp23-00009
15. **Mandeep Rajpal**, **Farah Sedki**, and **Tony Eid**. Statin-induced myopathy in a patient with Schwartz-Jampel Syndrome. Journal of Pharmacy Practice. 2023. <https://pubmed.ncbi.nlm.nih.gov/37931642/>

16. Sarkar T, Moinuddin SM, Isbatan A, Chen J, Mann D, **Ahsan F**. Intratracheally administered peptide-modified lipid admixture containing fasudil and/or Deta Nonoate ameliorates various pathologies of pulmonary arterial hypertension. *Pharmaceuticals*. 2023. <https://pubmed.ncbi.nlm.nih.gov/38139783/>
17. Sarkar T, Isbatan A, Moinuddin SM, Chen J, **Ahsan F**. Catheterization of pulmonary and carotid arteries for concurrent measurement of mean pulmonary and systemic arterial pressure in rat models of pulmonary arterial hypertension. *Bio Protocols*. 2023. <https://pubmed.ncbi.nlm.nih.gov/37645695/>
18. Olorunsola EO, Davies KG, Ibiang KP, Esukpa PC, Uwaechi EG, **Ahsan F**. Prosochit®-based nanoparticulate system of insulin for oral delivery: design, formulation and characterization. *J Appl Pharm Sci*. 2023. https://japsonline.com/abstract.php?article_id=3855&sts=2
19. Nguyen T, and **Ahsan F**. An overview of organ-on-a-chip models for recapitulating human pulmonary vascular diseases. In: Magin, C.M. (eds) *Engineering Translational Models of Lung Homeostasis and Disease*. *Advances in Experimental Medicine and Biology*, vol 1413. Springer, Cham. 2023. https://doi.org/10.1007/978-3-031-26625-6_13.

Research presentations for 2023; TOTAL OF 32 RESEARCH PRESENTATIONS (20 POSTER PRESENTATIONS AND 12 PODIUM PRESENTATIONS), (24 CNUCOP student co-authors)

1. Anh Doan, Austin Qiu, Trieu Nguyen, Sakib M. Moinuddin, Melanie Rose, Tanoy Sarkar, **Fakhrul Ahsan** and Zhuqiu Jin. Microfluidic Chip Fabrication and Optimization for Endothelial Cell Permeability Determination. *California Northstate University Annual Research Symposium*. 2023.
2. Farah Sedki, Mandeep Kaur Rajpal and Tony J Eid. Statin-Induced Myopathy in a Patient with Schwartz-Jampel Syndrome (SJS). *California Northstate University Annual Research Symposium*. 2023.
3. Rami Almukhtar and Tuan Tran. Assessing the relationships between demographic/geographic/socioeconomic status and COVID-19 disparities in the US: storytelling with data. *California Northstate University Annual Research Symposium*. 2023.
4. **Fakhrul Ahsan**. Preparation, scale up and large-scale manufacturing of lipid-based nanoparticles. CNU research seminar series. 2023.
5. **Ashim Malhotra**, Naomi Steenhof, Surajit Dey. Professional Identity: Perspectives, Opportunities, and Challenges from Lebanon, Canada, Bangladesh, and USA. *AACP Annual Meeting*. 2023.
6. Cary Mobley, Timothy K. Fincher, **Ashim Malhotra**. Leveraging Pharmaceutical Science Mindsets to Enhance the Professional Identity of Pharmacy Faculty and Students. *AACP Annual Meeting*. 2023.
7. Elias B. Chahine, Omar F. Attarabeen, Dalal Hammoudi, **Islam N. Mohamed**. Exploring Diversity, Equity, and Inclusion: The Case of Arab American Pharmacy Educators. *AACP Annual Meeting*. 2023.
8. Allyson Spence, James Culhane, **Ashim Malhotra**. Leveraging the Learning Sciences to Improve Teaching Effectiveness and the Development of Future Pharmacists. *AACP Annual Meeting*. 2023.
9. **Ashim Malhotra**, David Fuentes. Leveraging Adaptive Expertise in Interprofessional Education. *AACP Annual Meeting*. 2023.
10. David G. Fuentes, David Weldon, Surajit Dey, **Ashim Malhotra**. Measurable Elements of Immediacy to Effectively Lead as an Academic Administrator. *AACP Annual Meeting*. 2023.
11. **Tiffany Kreys**, Jason McDowell, **Ashim Malhotra**. Impact of a Pre-Matriculation Program on Student's Self-Awareness of Pharmacist Professional Identity, Preparedness, and Confidence. *AACP Annual Meeting*. 2023.
12. **Suzanne Clark**, Julie Olenak. Preparing Prospective Students for Professional and Personal Success. *AACP Annual Meeting*. 2023.

POSTER PRESENTATIONS:

1. Agnieszka Witanis, **Tibebe Woldemariam**, and Sylvia Vetrone. Cytotoxic Effects of Ajoene and their Mechanism on Adherent and Non-adherent Cancer Cell Lines. California Northstate University Annual Research Symposium. 2023.
2. Sanel Velic, Grant Van Tran, Jaspreet Kaur, Quoc-Anh Tran, Nhi Duong, Vy Tran Luu, Hou Mai Xiong, Tram Bui, Ludmila Nicov, Melanie Rose and **Linh Ho**. Astragaloside-IV and Formononetin As Sirt3 modulators Protect Hepatocytes Against Oxidative Stress. California Northstate University Annual Research Symposium. 2023.
3. Tanoy Sarkar, Sakib M. Moinuddin, **Fakhrul Ahsan** and **Dipongkor Saha**. Catheterization of Pulmonary and Carotid Arteries for Concurrent Measurement of Mean Pulmonary Arterial (mPAP) and Systemic Arterial Pressure (mSAP) in PAH Rats. California Northstate University Annual Research Symposium. 2023.
4. **Ashim Malhotra**, Milosz Blyszczek, Anand Singh and Kunal Kanani. Curricular and Co-Curricular Strategies to Embed the "Industrial Pharmacy" Professional Identity for PharmD Learners. California Northstate University Annual Research Symposium. 2023.
5. **Jennifer Courtney**, Kelsea G. Aragon, Monica Douglas and **Ashim Malhotra**. Embedding LGBTQIA+ Patient Care in the Professional Identity of Community Pharmacists By Creating a Comprehensive Resource Compendium. California Northstate University Annual Research Symposium. 2023.
6. Yasmin Elsobky, **Welly Mente**, **Eugene Kreys** and **Islam Mohamed**. Decoding Medication Tradenames; an innovative Method for Top 200 medications in Didactic & Experiential Courses. California Northstate University Annual Research Symposium. 2023.
7. Eman El-Ibbad, Sherief Khalifa S, Reham Khalid, Farah Sedki, **Suzanne Clark**, **Eugene Kreys** and **Islam Mohamed**. Evaluation of an International Collaborative Certificate program for pharmacy student leaders of Peer-assisted learning programs. California Northstate University Annual Research Symposium. 2023.
8. **Peter Tenerelli** and Joanna Jullien. Professional Identity Formation: Results of an Interdisciplinary Instruction. California Northstate University Annual Research Symposium. 2023.
9. Sakib M. Moinuddin, Tanoy Sarkar, **Dipongkor Saha** and **Fakhrul Ahsan**. Improved Pulmonary Hemodynamics in Rat PAH Model with Fasudil-Lipid-DETA NONOate Admixture and CAR Homing Peptide. California Northstate University Annual Research Symposium. 2023.
10. Roopreet Kaur Dab, Kevin Brandt, Cafrey Feng, Raymond Huang, Alexander Swanberg, Roslyn R. Isseroff and **Justin Lenhard**. Potential synergy of fluoxetine and antibacterials against skin and soft tissue pathogens. California Northstate University Annual Research Symposium. 2023.
11. Erika Titus-Lay, Jeffrey Nehira, **Jennifer Courtney**, Jacquelyn Jee, Marissa Kumar, Jenny Tiet, Vivi Le, Blythe Durbin-Johnson, Moon S. Chen and **Ruth Vinall**. A Pharmacist-Led Study: Impact of the Covid-19 pandemic on factors relating to cancer health outcomes and disparities. California Northstate University Annual Research Symposium. 2023.
12. Tanoy Sarkar, Sakib M. Moinuddin, **Dipongkor Saha** and **Fakhrul Ahsan**. Preparation and scale-up of liposomal amphotericin B formulation and a comparison with commercially available counterpart, **Ambisome**[®]. California Northstate University Annual Research Symposium. 2023.
13. Preetinder Sohal, Ashley Yuen, Neelu Batra and **Ruth Vinall**. Neem's ability to decrease proliferation of prostate cancer cells. California Northstate University Annual Research Symposium. 2023.
14. Robert Moir and **Tibebe Woldemariam**. Analysis of Cytotoxic Effects of Selected Herbal Extracts on Cancer Cell Lines. California Northstate University Annual Research Symposium. 2023.
15. Karim Pajazetovic, **Tibebe Woldemariam** and **Ashim Malhotra**. Repurposing FDA-approved Antitubercular Agents Isoniazid and Ethambutol in Pancreatic Adenocarcinoma. California Northstate University Annual Research Symposium. 2023.

Research Accomplishments

2023

16. Chrislyn Lawrence and **Eugene Kreys**. The Association Between Pharmacy School Characteristics and Performance Outcomes over a 5-Year Period. California Northstate University Annual Research Symposium. 2023.
17. **Jennifer Courtney**, **Eugene Kreys**, Bryan Luu, **Tiffany-Jade Kreys**, **Ruth Vinall**, Erika Titus-Lay. Comparison of Virtual Versus In-Person Delivery of a Naloxone Certification Training Program Through the Use of Team-Based Learning. TBLC annual meeting. 2023.
18. Jasmine Uchi, **Tony Eid**, Scott P. Commins, Jeffrey Wilson, Sharon Forsynth, Kimberly Maiton. Understanding Health Related Challenges in Patients with Alpha-Gal Syndrome. DIA Global annual meeting. 2023.
19. **Zhuqiu Jin** and Austin Qiu. A novel combination of an AKT activator with an AKT inhibitor exacerbates hydrogen peroxide-induced death of human cardiac microvascular endothelial cells. ASPET annual meeting. 2023.
20. Rami Almukhtar, **Uyen Le**, and **Tuan Tran**. Identifying relationships between demographic, geographic, socioeconomic status and COVID19 disparities: Storytelling with data. AACP Annual Meeting. 2023.
21. Gurjot Singh, Quoc-Anh Tran, Grant Van Tran, Sanel Velic, Hou Mai Xiong, Jaspreet Kaur, Zuhurr Moosavi, Phuong Nguyen, Nhi Duong, Vy Tran Luu, Tram Bui, Melanie Rose, **Linh Ho**. Preclinical study of hepatoprotective effects of Astragaloside-IV and Formononetin as potential treatment for chronic hepatitis. ASHP Midyear Meeting. 2023.

TOTAL OF 3 EXTERNAL GRANTS AND CONTRACTS THAT RECEIVED FUNDING (1 student awardee)

1. **Tarek Kassem** (PI), **Islam Mohamed** (Mentor and Co-PI). Service-learning programs for building bridges with local migrant communities. ASHP (Pharmacy Leadership Scholar Research Program). 2023. Funding amount: \$10,000.
2. **Justin Lenhard** (PI). Potential synergy of fluoxetine and Fosfomycin against drug-resistant bacteria. Sacramento Valley Pharmacists Association Research Scholarship (SVPhA). 2023. Funding amount: \$500.
3. Xinge Zheng (PI) and **Islam Mohamed** (faculty mentor). MiR-146a; a potential agent against shear stress-induced activation of the pro-inflammatory and pro-proliferative osteopontin pathway. AFPE Gateway Award. Funding amount: \$5,000.

TOTAL OF 4 INTERNAL GRANTS AND CONTRACTS THAT RECEIVED FUNDING (1 student awardee)

1. **Justin Lenhard** (PI), Rivkah Isseroff (collaborator). Potential synergy of fluoxetine with antibacterials against soft tissue pathogens. CNUCOP Seed Grant.
2. **Peter Tenerelli** (PI), **Suzanne Clark** (co-PI), **Shahanara Ahsan** (co-PI). Impact of the Management, Policy, and Leadership Initiative on PharmD Student Advocacy. CNUCOP Seed Grant.
3. **Ashim Malhotra** (PI), Karim Pajazetovic (collaborator). Repurposing FDA-Approved Anti-tubercular Drugs Isoniazid and Ethambutol for Pre-Clinical Studies in Pancreatic Cancer: A Hunt for Novel Therapeutic Targets. CNUCOP Seed Grant.
4. John Cusick (PI), **Welly Mente**, Valerie Gerriets. Improving Student Engagement through Active Learning and Audience Response Systems. CNU HEGA. 2023

CNUCOP Student Summer Fellowship awardees (9 applications, 6 awards):

- **Desiree Ewell** (faculty mentor: Dr. Ruth Vinall)
- **Eurasia Vue** (faculty mentor: Dr. Islam Mohamed)
- **Noah Yang** (faculty mentor: Dr. Dipongkor Saha)
- **Chrislyn Lawrence** (faculty mentor: Dr. Eugene Kreys)
- **Rondelle Jordan** (faculty mentor: Dr. Justin Lenhard)
- **Robert Moir** (faculty mentor: Dr. Eugene Kreys)

Faculty Spotlight: Dr. Tarek Kassem



We are so glad to have Dr. Tarek Kassem as part of our research team here at CNUCOP. He agreed to answer a few questions to give us a better look into his mind.

Q: Can you tell us about your research interests?

Dr. Kassem's research interest is exploring the multifaceted aspects of Diversity, Equity, and Inclusion [DEI]. With a grant from the American Society of Health-System Pharmacists, we are dedicated to investigating the impact on the community by measuring self-reporting of public health literacy, medication awareness, and immunizations. Students' impact will be measured via surveys regarding cultural humility and practice preparation. Our hypothesis predicts that introducing unique service-learning programs for CNUCOP PharmD students will cultivate their cultural competency skills. These skills include identifying the barriers to healthcare access among refugees from the Middle Eastern community health population in the US, identifying the appropriate medication and non-pharmacological interventions to promote positive health outcomes, providing patient health education and counseling services to the refugees from Middle Eastern communities & educating community members concerning COVID-19 vaccine hesitancy. Additional research interests are awareness about antimicrobial stewardship and drugs in primary care that may alter COVID-19 risk and severity.

Q: Do you think there has been a defining moment for your career path?

A defining moment in my career as a pharmacist occurred when I had the opportunity to teach part-time at CNSUCOP. This experience shaped my approach to patient care and pursuing another board certification in ambulatory care. This experience reinforced my commitment to delivering exceptional pharmaceutical care and inspired me to share my knowledge and expertise with others through teaching. I recognize the importance of staying at the forefront of advancements in the pharmacy field, so I work on integrating my knowledge into my practice, emphasizing high-quality patient care and mentoring aspiring pharmacy students to pursue excellence in the pharmacy field.



Faculty Spotlight: Dr. Tarek Kassem

Q: What are you most proud of?

As an international pharmacist, I am proud of my achievements as a licensed pharmacist and an educator in the United States. I pridefully blend my Middle Eastern roots and heritage with my professional journey. This experience allowed me to foster a positive learning environment and bring a diverse perspective to pharmacy and education. I am committed to embracing new challenges and contributing meaningfully to different cultural contexts. I am interested in highlighting the importance of cultural diversity in remodeling pharmacy practice and education. This journey has strengthened my passion for pharmacy and education to positively impact patient care and grow future pharmacy students, all while honoring my heritage and roots.

Q: What do you hope to accomplish in the future?

I aspire to significantly contribute to the progress of DEI within the pharmacy arena. As a pharmacist, I aim to provide excellent patient care that is culturally sensitive and diverse to the community. As an educator, I must foster an inclusive learning environment for my students and make them feel valued and empowered. As a researcher, I aim to collaborate with fellow researchers, healthcare providers, and educators from different backgrounds to engage in initiatives that help better understand disparities in healthcare and promote equity.

Q: What do you enjoy about working at CNU?

I genuinely find immense joy in working for CNU. This enjoyment stems from the dynamic environment that nourishes continuous learning and professional growth, which aligns with my passion for teaching and research. I have received tremendous mentorship and support from esteemed colleagues that enhanced my personal and professional growth. CNUCOP also has cutting-edge teaching and research methodology, contributing to daily fulfillment and inspiration. Also, supportive leadership contributes to professional growth and facilitates teamwork. The visionary leadership allows me to contribute to the future of our school via open communication and proper mentorship. My voice is heard when a meaningful project will be implemented. All this contributed to my experience at CNU.

Meet your Lab Manager!

MELANIE



Hello! My name is Melanie Rose, and I am your CNUCCP Research Laboratory Manager! Get to know me!

Q: What do you do as the lab manager?

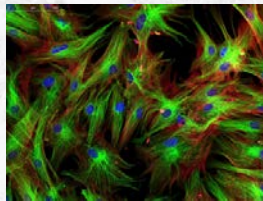
I assist our faculty members with their research projects by training student volunteers. I am always behind the scenes making sure the lab is clean, organized, and well-supplied to make your research easier!

Q: What is your educational background?

I got my Bachelor's at SF State in Cell and Molecular Biology, and my Master's in Stem Cell Research at Sac State. I am not a doctor, so please call me Melanie when we meet!

Q: What is your favorite molecular biology technique?

I really enjoy fluorescent microscopy/immunohistochemistry. You get a really well-rounded idea of cell expression, and it makes such a pretty picture!



Q: Do you have two dogs that you will take any opportunity to talk about?

I am so glad you asked. I have a 9 year old Australian Shepherd named Hannah (Banana, Nanners, etc.) and a 2 year old Dachshund mix named Monday (Monderoo, Munderfoot). They are my joy, and I love them so much. Please come talk to me about them.





Desiree Ewell is a P3 who was selected for our 2023 Summer Research Fellowship. She is an active lab member here at CNU, so we wanted to talk to her about her experience, and what being able to participate in research means to her. Here is what we found out!

Q: What first made you interested in doing research?

Growing up I've always enjoyed science and watching forensic science shows both fiction and nonfiction. Seeing the power of science in a lab made me interested in research. During my undergraduate program at UCLA, I was excited about the various research opportunities. However, I was too intimidated to approach the faculty and ask to be a part of their research projects with such large class sizes. After reading about the research opportunities at CNU I made it a goal to finally become involved in research.

Q: What do you like about research?

I enjoy being able to study cells that we cannot see with the naked eye with a goal of making a difference in people's lives. Microscope views are amazing, and I could look at the different cells we work with all day.

Q: Do you think that your research at CNU will help your future career path?

It has been an invaluable experience being involved in research with Dr. Vinall at CNU. It has allowed me to think outside the box, practice technical skills, and utilize the knowledge learned from our core curriculum.

Q: What are you most proud of?

I am proud that I finally checked research off my bucket list. I am also proud to have been awarded the opportunity to do so by way of the Summer Research Fellowship and be able to continue throughout my time here at CNU as a P3 and next as a P4.

Q: What do you hope to accomplish in the future?

I am not quite sure about what the future holds for me, but I hope to continue enjoying my path in pharmacy all while making my kids proud.

Q: Would you recommend the CNU research program to other students?

Yes, in fact I have already recommended the CNU research program to a few students. If you're thinking about research or are just curious about research, I would 100% recommend getting involved with the CNU research program. The CNU research program has a diverse range of opportunities for a variety of research interests.

*Thank
you!*



CNU COLLEGE OF PHARMACY SUMMER RESEARCH FELLOWSHIP 2023



Eurasia Vue
Dr. Islam Mohamed



Desiree Ewell
Dr. Ruth Vinall



Robert Moir
Dr. Eugene Kreys



Chrislyn Lawrence
Dr. Eugene Kreys



Noah Yang
Dr. Dipongkor Saha

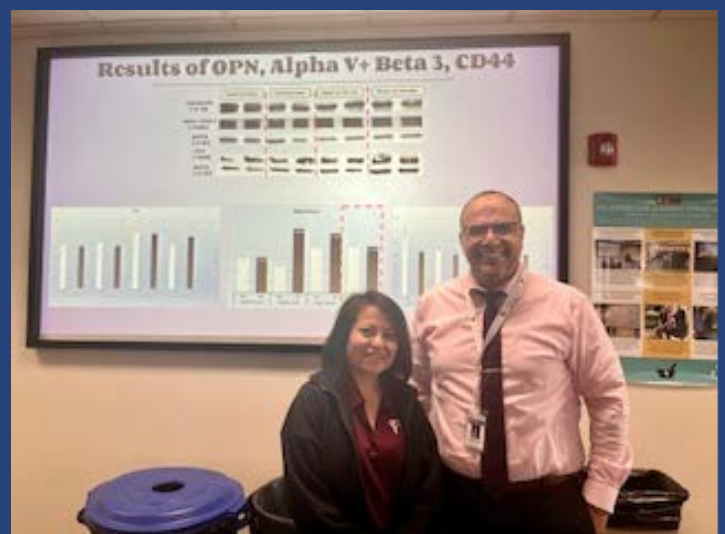


Rondelle Jordan
Dr. Justin Lenhard



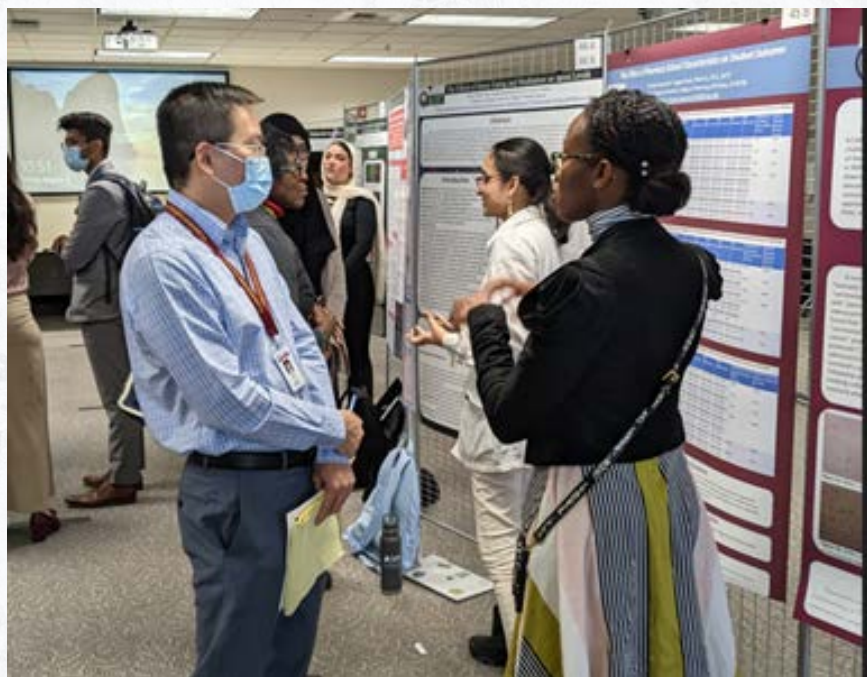


Summer Research Fellowship Presentations





The 2023 CNU Research Symposium was a huge success! Special recognition goes to our students who gave podium presentations: Anh Doan (faculty mentor: Dr. James Jin), Farah Sedki & Mandeep Kaur Rajpal (faculty mentor: Dr. Tony Eid), and Rami Almukhtar (faculty mentor: Dr. Tuan Tran). Congratulations also to our COP poster prize winners: Sanel Velic (1st - Dr. Linh Ho), Robert Moir (2nd - Dr. Tibebe Woldemariam), and Chrislyn Lawrence (3rd - Dr. Eugene Kreys)



Research Symposium podium presenters from CNUCOP:

- Anh Doan, Austin Qiu, Trieu Nguyen, Sakib M. Moinuddin, Melanie Rose, Tanoy Sarkar, **Fakhrul Ahsan** and **Zhuqiu Jin**. Microfluidic Chip Fabrication and Optimization for Endothelial Cell Permeability Determination. California Northstate University Annual Research Symposium. 2023.
- Farah Sedki, Mandeep Kaur Rajpal and **Tony J Eid**. Statin-Induced Myopathy in a Patient with Schwartz-Jampel Syndrome (SJS). California Northstate University Annual Research Symposium. 2023.
- Rami Almukhtar and **Tuan Tran**. Assessing the relationships between demographic/geographic/socioeconomic status and COVID-19 disparities in the US: storytelling with data. California Northstate University Annual Research Symposium. 2023.

Research Symposium poster prize awardees from CNUCOP (**Sanel Velic** (1st), **Robert Moir** (2nd), and **Chrislyn Lawrence** (3rd)):

- Sanel Velic, Grant Van Tran, Jaspreet Kaur, Quoc-Anh Tran, Nhi Duong, Vy Tran Luu, Hou Mai Xiong, Tram Bui, Ludmila Nicov, Melanie Rose and **Linh Ho**. Astragaloside-IV and Formononetin As Sirt3 modulators Protect Hepatocytes Against Oxidative Stress. California Northstate University Annual Research Symposium. 2023.
- Robert Moir and **Tibebe Woldemariam**. Analysis of Cytotoxic Effects of Selected Herbal Extracts on Cancer Cell Lines. California Northstate University Annual Research Symposium
- Chrislyn Lawrence and **Eugene Kreys**. The Association Between Pharmacy School Characteristics and Performance Outcomes over a 5-Year Period. California Northstate University Annual Research Symposium. 2023.



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KEYNOTE SPEAKER

**DR. JERRY NADLER, M.D.,
MACP, FAHA, FACE**

**VA Northern California Health
Care System**

**"Recent Updates about the
Causes and Pathogenesis of
Type 1 Diabetes"**

CALIFORNIA NORTHSTATE UNIVERSITY

2024 RESEARCH DAY

FEBRUARY 9TH, 2024

8:45 am to 4:00 pm Program

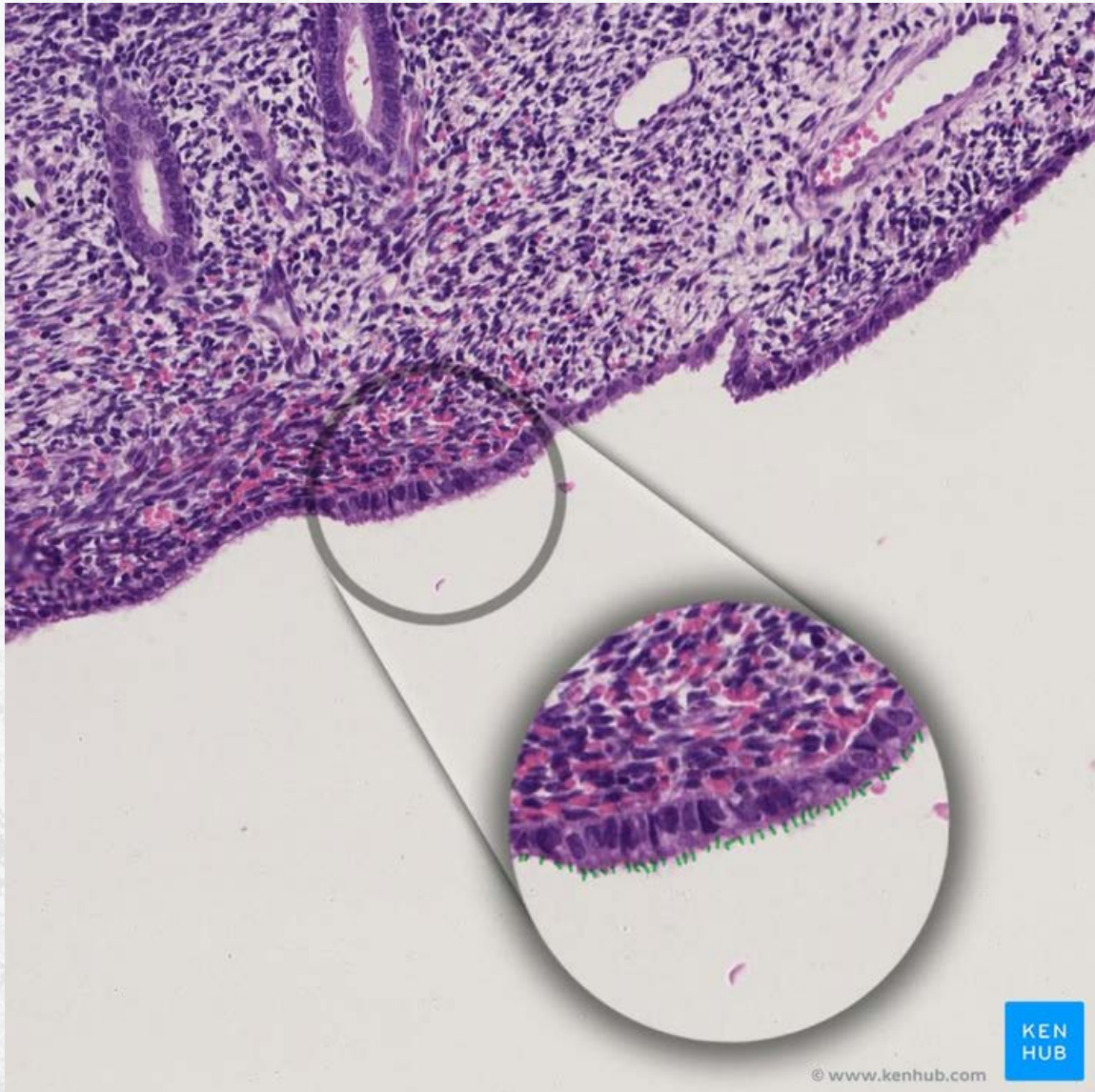
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SUBMIT YOUR ABSTRACT



Histology Core

In 2023, equipment that allows for analysis of tissues was purchased - this equipment will help further support translational research studies. Tissues are first embedded in wax and then the microtome and associated equipment can be used to generate thin sections. Histological and immunohistological analysis of these sections can help us better understand disease pathophysiology and associated molecular mechanisms. For example, tumor tissue can be embedded and sectioned and then the sections used to assess tumor grade as well as to assess expression of molecules that are thought to contribute to disease progression



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HUB

Histology Core

After infiltration with wax, tissue must be formed into a “block” which can be clamped into a microtome for section cutting. The specimen is very carefully orientated in the mold because its placement will determine the “plane of section”, an important consideration in both diagnostic and research histology.



Epredia Microtome

This machine is used to thinly slice paraffin-embedded tissue samples.

Water Bath

The thin sections are transferred to a warm water bath. The paraffin will allow the section to float on the surface where you transfer them to a microscope slide.



Heated Embedding Plate

Once the tissue is mounted, slides are placed on a heating block to dry completely which helps adhere the section.



Ph.D. in Pharmaceutical & Biomedical Sciences

"To advance healthcare through the training and mentorship of future leaders in Pharmaceutical & biomedical science research. "

4 Years : 82 Credits

Admission Requirements:

- All applicants must have completed a bachelor's degree with a GPA of 3.0 or higher from an accredited four-year college or university and have completed coursework in math and either biology, physiology, chemistry, or computer science/engineering.
- Applicants who are non-native English speakers are required to demonstrate English language proficiency (minimum score of 80 on TOEFL(iBT) or 6.5 on IELTS).

CONTACT US FOR MORE INFO



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CONTRIBUTION TO THE CNU MISSION TO
ADVANCE THE SCIENCE AND ART OF
HEALTHCARE!

