



2019 ANNUAL REPORT

DEPARTMENT OF
PHARMACEUTICAL
OUTCOMES AND
POLICY

LETTER FROM THE CHAIR

Dear friends, alumni, collaborators and colleagues,

It's been another year full of exciting news about POP. We continue to grow in every imaginable direction: more faculty have brought more graduate students, fellows, staff and visiting scholars and all this combined productivity has resulted in more studies, more publications and more impact on public health. POP's faculty and trainees were recognized nationally and internationally for their amazing work in pharmacoepidemiology, pharmacoeconomics and pharmaceutical health services research. With new faculty and diverse focus areas and skills sets, I anticipate continued growth in each of our three specialty areas. Please check out the faculty profiles of Amie Goodin and Juan Hincapie-Castillo, who joined us this past academic year. I am also pleased to report that Haesuk Park was awarded tenure and promotion to associate professor, an exciting and very rewarding accomplishment. Many more faculty will follow her lead for sure!

Our areas of research have continued to be diverse but cluster around a few distinct populations with significant need for more investigation on real-world drug effects and drug use; the opioid epidemic, pain and mental health; drug use and drug safety and effectiveness in geriatrics; infections and cancer; and pregnancy and pediatrics. A new and growing focus has been on drug-to-drug interactions and stronger collaboration with colleagues in clinical pharmacology and pharmacogenomics. Our work was recognized with a number of press releases, some featured in this report, editorials and literature awards. POP's faculty research funding doubled compared to only two years ago to more than \$6 million devoted to studies that were led by POP faculty. Excitingly, at the end of the past academic year, we were selected to lead the Florida Consortium for Medical Marijuana Clinical Outcomes Research with \$1.5 million recurring state funding to build research infrastructure and conduct outcomes studies on medical marijuana. Finally, we launched CoDES, the Center for Drug Evaluation and Safety, with the goal to build a broader community of UF researchers with interest in using big data to achieve bigger, healthier and safer drug therapy outcomes.

We have finally covered all of our teaching needs in the graduate curriculum and have started thinking about additional elective courses and other unique curricular offerings. Our seven graduates this past year are off to exciting careers — owing their excellent work to the amazing mentorship of our faculty and the tremendous recognition of our graduate program. This year we admitted seven students in our new residential M.S. (thesis) track, which offers the opportunity to transition seamlessly into our Ph.D. program. Our complementary online M.S. degree tailored to working professionals admitted more than 80 new students.

I hope you agree these are exciting times and you have the opportunity to hear about some of these directly from our "POPers." I hope you stay close to our department, and if you have not been in Gator country for a while, please consider visiting us in 2020.

Sincerely,



ALMUT WINTERSTEIN, R.PH., PH.D., FISPE

Professor & Chair

Dr. Robert and Barbara Crisafi Chair in Medication Safety

Director, Center for Drug Evaluation and Safety

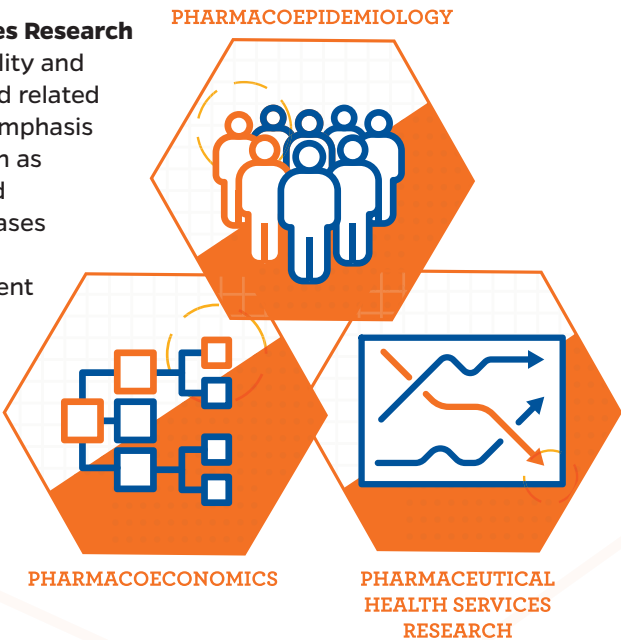


PUBLIC HEALTH IMPACT SPANNING OVER 30 YEARS OF GRADUATE TRAINING, RESEARCH AND SERVICE

WHAT IS POP ABOUT?

The department of pharmaceutical outcomes and policy excels in three areas of specialization in both research and training. Each area employs its own set of methodological approaches, but all utilize the vast array of big data sources available in the department.

- 1. Pharmacoepidemiology and Safety Sciences** applies epidemiologic methods and knowledge to the study of uses and effects of drugs in populations after drug approval. Important research areas include postmarketing safety studies, comparative effectiveness studies and predictive models of drug outcomes and use.
- 2. Pharmacoeconomics and Outcomes Research** assesses the value (clinical and economic) of pharmaceutical products and related services in the delivery of health care. It aims to provide patients, providers and payers with evidence to inform decision-making. Important research areas include economic evaluations, budget impact analysis, multicriteria decision analysis and policy evaluations related to drug formulary, reimbursement and pricing.
- 3. Pharmaceutical Health Services Research** examines the quality, accessibility and delivery of pharmaceuticals and related services. The program places emphasis on vulnerable populations, such as children, elderly, minorities and persons with high-burden diseases and disabilities. Examples of research include the development of quality measures or assessment of determinants of appropriate therapy.



SPOTLIGHT ON PHARMACOEPIDEMIOLOGY

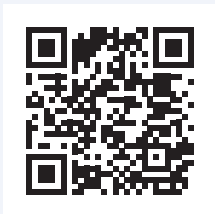
PHARMACOEPIDEMIOLOGY AND SAFETY SCIENCES



*Yu-Jung "Jenny" Wei, Ph.D.
Assistant Professor*

As a track leader of this core specialty area that focuses on instilling fundamental knowledge and methods needed to undertake pharmacoepidemiology and drug safety research, I am excited to have the opportunity to organize the curriculum for this academic track within the POP graduate program. Our goal is to help students build a solid understanding of pharmaco-epidemiologic principles and methods, as well as develop strong reasoning, critical thinking and analytical skills for research in this field.

In this specialty area, we offer graduate courses at beginning, intermediate and advanced levels. These courses provide students with knowledge and skill set to conceive, design and conduct studies. They emphasize strongly on the methodology and application of observational research methods in phase IV studies and other related applications of translational clinical sciences. In addition to didactic courses, students have training opportunities to gain hands-on experience by working with our faculty who are specialized in their fields of study, including pediatric, geriatric and psychiatric pharmacoepidemiology.



Please check out our new video about pharmacoepidemiology by scanning the QR code.





CONTRIBUTIONS TO COMBATING **THE OPIOID EPIDEMIC**



NEW MACHINE-LEARNING MODEL FOUND EFFECTIVE AT PREDICTING RISK OF OPIOID OVERDOSE

Traditional statistical approaches to identifying people at high risk for opioid overdose misclassify and target many who are not truly at high risk. Now researchers who studied Medicare beneficiaries who have at least one opioid prescription have developed a way to use machine learning to more effectively predict the risk of an overdose.

An alternative analytic approach, machine learning allows scientists to assess complex interactions of large data that can reveal hidden patterns and generate more accurate predictions in clinical settings.

The study, by researchers at the University of Florida, University of Pittsburgh, Carnegie Mellon University and the University of Utah, appears in JAMA Network Open.

“The ability to identify such risk groups has important implications for policymakers and insurers who currently target interventions based on less-accurate measures to identify patients at high risk,” said Wei-Hsuan “Jenny” Lo-Ciganic, Ph.D., M.S., M.S. Pharm., an assistant professor of pharmaceutical outcomes and policy at the UF College of Pharmacy, who was the lead author on the study.

“Our model was effective in dividing the participants into three risk groups according to predicted risk score, with three-quarters in a low-risk group with a negligible rate of overdose, and more than 90 percent of individuals who overdose captured in the high- and medium-risk groups,” said Jeremy C. Weiss, M.D., Ph.D., an assistant professor of health informatics at Carnegie Mellon University’s Heinz College who participated in the study.

In 2017-2018, researchers studied 560,057 fee-for-service Medicare beneficiaries without cancer who filled one or more prescriptions for opioids between 2011 and 2015. Those individuals were randomly assigned and equally separated into training, testing and validation samples. Every three months, the researchers measured potential predictors of opioid overdose, including participants' socio-demographic characteristics (e.g., age, sex, disability status), health status, patterns of opioid use, and factors related to the participants' practitioners and the regions where they lived. The researchers then identified opioid overdoses from inpatient and emergency room insurance claims and predicted the risk of overdose in the three months after participants began treatment with the drugs.

The study found machine-learning algorithms performed well at predicting risk of opioid overdose and at identifying subgroups of patients at similar risk of overdose, especially when it came to identifying individuals with a low risk of overdose. On the basis of their findings, the researchers concluded their approach outperformed other methods for identifying risk, such as traditional statistical models.

The authors caution that their study only looked at patients who obtained opioids from medical settings, not those who received them from nonmedical settings, which are not captured in claims data. In addition, the study looked at overdoses in medical settings, not overdoses outside those settings.

"Machine-learning models that use administrative data appear to be a valuable and feasible tool for identifying more accurately and efficiently individuals at high risk of opioid overdose," said Walid Gellad, M.D., M.P.H., an associate professor of medicine at the University of Pittsburgh and senior author on the study. "Although they are not perfect, these models allow interventions to be targeted to the small number of individuals who are at much greater risk."

The study was funded by the National Institute on Drug Abuse and supported in part by the Pharmaceutical and Manufacturers of America Foundation.

UF STUDY QUESTIONS ACCURACY OF CMS OPIOID SAFEGUARDS

A new study by University of Florida researchers questions the accuracy of the criteria used by the Centers for Medicare and Medicaid Services, or CMS, to identify patients at risk of opioid abuse and overdose.

The CMS launched its Overutilization Monitoring System, or OMS, in 2013 to identify such high-risk patients among the millions of beneficiaries who receive prescription drugs through the Medicare Part D program. The CMS required Medicare Part D sponsors to implement interventions for these patients.

UF College of Pharmacy researchers found the majority, at least 95 percent, of these patients who had been diagnosed with opioid use disorder or overdose did not meet CMS' opioid overutilization criteria. In addition, half of the opioid overutilizers identified by CMS did not develop opioid use disorder or overdose during the study period. The findings were published in JAMA.

“The CMS criteria do not appear to be a good clinical marker for identifying patients at risk for opioid-related adverse events,” said Yu-Jung “Jenny” Wei, Ph.D., an assistant professor of pharmaceutical outcomes and policy in the UF College of Pharmacy and lead author of the study. “If the criteria are not accurate, there is potential to miss a lot of people who are at risk and might need help. Patients may also be flagged as overutilizers who are not abusing opioids.”

UF researchers used data from a nationally representative sample of Medicare beneficiaries from 2011 through 2014, including between 142,036 and 190,320 beneficiaries who had at least one opioid prescription filled every six months. The beneficiaries had to be continuously enrolled in Medicare Parts A, B and D and have no cancer nor be receiving hospice care. Opioid overutilizers were identified consistent with the OMS criteria as receiving a daily morphine equivalent dose greater than 90 mg from more than three prescribers and three pharmacies or a dose greater than 90 mg from more than four prescribers.

The Medicare Part D program provides prescription drugs to more than 42 million beneficiaries. In 2016, the U.S. Government Accountability Office reported one-third of individuals participating in Medicare Part D received at least one opioid prescription.

Wei cautions state and government leaders from relying solely on OMS prescription dispensing data when writing policies to combat the nation’s opioid epidemic.

“As we are developing solutions to the opioid crisis, it is important for policymakers, health care providers and health insurance companies to be aware that solely relying on opioid prescription data is likely to be ineffective in identifying the high-risk populations for interventions,” Wei said.

Contributing authors for this study include: Cheng Chen, BS.Pharm.; Amir Sarayani, Pharm.D.; and Almut Winterstein, Ph.D.



GRANTS

DEPARTMENT FACULTY HAVE DOUBLED THEIR EXTRAMURALLY FUNDED RESEARCH IN RECENT YEARS AND ARE ACTIVELY INVOLVED IN 18 GRANTS AND CONTRACTS

Advancing Personalized Hypertension Care through Big Data Science

NIH/NHLBI K01HL138172 (K01)
Research Scientist Development Award
Principal Investigator: Steven Smith
Mentor: Almut Winterstein
07/2018-06/2023 (\$725,793)
This award supports providing mentorship on the principal investigator's project which seeks to better understand how antihypertensive drugs are prescribed in routine practice and to aid in making personalized recommendations for antihypertensive drug selection based on an individual patient's clinical profile using electronic health records data, pharmacoepidemiological methods, biomedical informatics and prediction modeling.

Safety of Gadolinium-Enhanced MRI Exposure During Pregnancy on Adverse Fetal Outcomes

U.S. Food & Drug Administration
HHSF223201810083C
Principal Investigator: Almut Winterstein
09/2018-09/2020 (\$273,914)
This proposal has the primary aim to provide robust evidence on the safety of GBCA-enhanced MRI during pregnancy regarding adverse fetal outcomes to support regulatory decision-making. It will further establish enhanced capacity to evaluate emerging safety questions in pregnancy.

Developing the Capability of Using National Medicaid Data for FDA Post-Marketing Surveillance to Assess Medication Safety During Pregnancy

U.S. Food & Drug Administration
HHSF223201400043I
Principal Investigator for UF subcontract: Almut Winterstein
09/2017-09/2020 (\$500,916 - UF portion)
This project aims to develop and validate Medicaid-specific algorithms to estimate gestational

age for live birth pregnancies, explore methods to identify other pregnancy outcomes and develop analytic tools to assess the impact of exposure misclassification, outcome misclassification, selection bias and residual confounding (due to missing covariates in electronic health data).

Inpatient Psychiatric Facility Outcome and Process Measure Development and Maintenance

Centers for Medicare & Medicaid Services HHSM-500-2013-13007I [HHSM-500-T0004]
Principal Investigator for UF subcontract: Almut Winterstein
Co-Investigator: Amie Goodin
09/2014-09/2018 (\$2,006,320 - UF portion)
This project developed, validated and maintained a series of outcome and process measures used to assess health care quality in inpatient psychiatric facilities for patients enrolled in Medicare and/or Medicaid.

Observational External Comparator Cohorts as Control for Long-Term Uncontrolled Clinical Trials

International Society for Pharmacoepidemiology
Principal Investigator: Almut Winterstein
05/2019-09/2019 (\$10,053)
This funding is part of the ISPE manuscript initiative and supports the development of a series of manuscripts focused on methodological issues related to the use of observational external comparator cohorts as control for long-term uncontrolled clinical trials.

Impact of Opioid Dosing Strategies on Pain Scores and Adverse or Unintended Clinical Outcomes

NIH/NIDA 1R36DA046717-01 (R36) Dissertation Award
Principal Investigator: Corey Hayes
Consultant: Joshua Brown
03/2019-02/2020 (\$1,400)
This award supports providing consultation on the principal

investigator's project, which aims to determine the impact opioid treatment regimens have on patient-reported pain scores and adverse or unintended clinical outcomes among patients with chronic, non-cancer pain in the Veterans Health Administration population.

Application of Physiologically-Based Pharmacokinetic Models to Inform Dosing Recommendations for Hormonal Contraceptives Co-administered with Other Medications

Bill & Melinda Gates Foundation (OPP118545)
Principal Investigator: Stephan Schmidt
Co-Investigators: Joshua Brown, Amie Goodin, Almut Winterstein
11/2017-10/2020 (\$1,500,000)
This project aims to develop pharmacological and pharmacoepidemiological evidence to inform treatment decisions for hormonal contraceptives and interacting medications by integrating real-world outcomes research, model-based meta analytic approaches and physiologically-based pharmacokinetic modeling and simulations.

Comparative Effectiveness of Direct-Acting Oral Anticoagulants (DOACs) for Stroke Prevention in Atrial Fibrillation: Influence of Study Methods on the Usefulness of the Results in the Real-World

PhRMA Foundation (AGR00008304)
Principal Investigator: Joshua Brown
09/2017-02/2019 (\$100,000)
This project acknowledges the wide heterogeneity in methodological approaches in observational studies and seeks to evaluate the incremental differences each design approach may have on study results. As a case example, the study will aim to establish the comparative effectiveness and safety of DOACs for stroke prevention in atrial fibrillation.



DR. LO-CIGANIC RECEIVES NATIONAL INSTITUTE ON AGING GRANT TO STUDY OPIOID AND BENZODIAZEPINE USE AMONG OLDER ADULTS

Harnessing the innovative and advanced group-based trajectory modeling, or GBTM, approach, the proposed study led by Wei-Hsuan “Jenny” Lo-Ciganic, Ph.D., M.S., M.S. Pharm., an assistant professor of pharmaceutical outcomes and policy at the UF College of Pharmacy, aims at developing an innovative, real-time “Predicting Risky Opioid-Benzodiazepine Trajectory e-Care Tool, or PROTeCT” for identifying and predicting subgroups of older adults with potentially unsafe patterns of OPI-BZD use. To overcome the gaps in the prior studies using arbitrary thresholds of duration and dose alone, the PROTeCT platform developed from the proposed study has the ability to simultaneously examine dose and duration thresholds or other patterns most relevant to outcomes and incorporate prescription data in a prospective manner. The findings and PROTeCT platform will better guide clinical care on co-prescribing opioids and benzodiazepines and inform concurrent opioid and benzodiazepine use related policies and interventions implemented by the Centers for Medicare & Medicaid Services, or CMS, and their partners and state programs.

Using national Medicare claims and Arizona and Florida Medicaid data from 2013-2016, aim 1 focuses on identifying distinct trajectories of OPI-BZD use. Lo-Ciganic will also identify predictors associated with specific trajectories or patterns. In aim 2, her team will identify the distinct trajectories or patterns of OPI-BZD use that are the most closely associated with two separate outcomes (i.e., overdoses; falls and fractures). Finally, they propose to develop a beta-version of a real-time PROTeCT platform capable of prospectively and iteratively predicting patients with unsafe patterns of OPI-BZD use by prospectively analyzing more recent data from 2017-19 Medicaid claims in Arizona and Florida. The infrastructure of their findings and tool may be generalizable to Medicare and Medicaid programs in other states or other health care data systems with similar data structures.

BOARD OF GOVERNORS SELECTS UF TO LEAD MEDICAL MARIJUANA RESEARCH CONSORTIUM

The State University System of Florida Board of Governors has selected the University of Florida to lead a statewide consortium studying health outcomes related to medical marijuana.

UF will lead the Consortium for Medical Marijuana Clinical Outcomes Research, which will be composed of public and private universities engaged in research on clinical outcomes of medical marijuana.

As the lead institution, UF will receive \$1.5 million in annual recurrent funding from the state of Florida to support the research mission of the consortium. The consortium will evaluate the safety and effectiveness of medical marijuana, consider dosing and routes of administration, including study of the effects of smoking medical marijuana versus other methods of consumption.

“There is an urgent need to enhance the evidence base related to the emerging marijuana and cannabis market in Florida,” said Almut Winterstein, Ph.D., a professor and chair of pharmaceutical outcomes and policy in the UF College of Pharmacy and director of the UF Center for Drug Evaluation and Safety. “UF has been involved with the Florida Medical Marijuana Program since 2014 and is well-prepared to leverage its extensive research infrastructure and broad faculty expertise to investigate the safe and effective use of medical marijuana in the state of Florida. As with any other medical treatment, providers, patients and regulators need the necessary information to evaluate its benefits and risks.”

The research infrastructure proposed by UF will focus on three primary activities to support the consortium: build a data repository known as the Medical Marijuana Clinical Outcomes Repository, or MEMORY, that can track patient outcomes over time; develop a Clinical Research Core, which will provide infrastructure support for prospective studies; and establish a competitive grants program offering \$600,000 annually from the state appropriation to participating institutions.

Winterstein serves as the director of the consortium, administrator of the grants program and will build the MEMORY repository, which will link the Florida Department of Health’s Office



A Model- and Systems-Based Approach to Efficacy and Safety Questions Related to Generic Substitutions

U.S. Food & Drug Administration
U01FD005210 (U01) Research Project-Cooperative Agreements Grant Award
Principal Investigator: Lawrence Lesko
Co-Investigator: Joshua Brown
05/2017-08/2018 (\$844,493)
This project aims to improve regulatory insights into generic medications particularly focused on comparisons and therapeutic substitution between generic products and the branded products they mean to replace. Brown's subproject evaluates real-world data to detect signals related to generic product quality concerns.

Sparkling Advancements in Genomic Medicine

NIH/NHGRI U01HG007269 (U01) Research Project-Cooperative Agreements Grant Award
Principal Investigator: Julie Johnson
Co-Investigators: Karam Diaby, Almut Winterstein
09/2018-06/2023 (\$922,335)
This project aims to address the significant burden of both pain and opioid use in the U.S. by testing the hypothesis that CYP2D6 genotype-guided pain management leads to improved patient reported outcomes for pain control and is cost-effective in a real-world setting.

Evaluating Learning Outcomes in Continuing Pharmacy and Medical Education

Creative Educational Concepts
Principal Investigator: Amie Goodin
04/2019-04/2020 (\$12,000)
This project applies a competency-based assessment strategy to evaluate a series of educational interventions and learning outcomes for health care professionals.

Developing a Real-Time Trajectory Tool to Identify Potentially Unsafe Concurrent Opioid and Benzodiazepine Use among Older Adults

NIH/NIA AG060308 (R21) Exploratory/Developmental Research Grant Award
Principal Investigator: Wei-Hsuan "Jenny" Lo-Ciganic

Co-Investigator: Almut Winterstein
5/2019-1/2021 (\$308,206)
This project aims to develop an innovative, real-time "Predicting Risky Opioid-Benzodiazepine Trajectory e-Care Tool (PROTECT)" for identifying and predicting subgroups of older adults with potentially unsafe patterns of concomitant use of opioids and benzodiazepines, in order to better guide clinical care and inform related policies and interventions.

Machine Learning and Opioid Overdoses in Allegheny County

Richard King Mellon Foundation
Multi-PI: Wei-Hsuan "Jenny" Lo-Ciganic/Walid Gellad/Julie Donohue
7/2018-6/2020 (\$61,818 – UF portion)
This project aims to apply advanced analytics to develop prediction and risk stratification algorithms that can identify patients at high risk of opioid overdose in the residents in Allegheny County in Pittsburgh, Pennsylvania.

Using Machine Learning to Predict Problematic Opioid Use

NIH/NIDA 1R01DA044985 (R01) Research Project Grant Award
Consortium Principal Investigator: Wei-Hsuan "Jenny" Lo-Ciganic
9/2017-6/2020 (\$1,775,265)
The purpose of this study is to apply machine learning to develop two distinct prediction algorithms that can identify patients at high risk of problematic opioid use and overdose among Medicaid beneficiaries in Pennsylvania and Arizona.

Depression Treatment and Outcomes Among Older Adults with Dementia in the United States

NIH/NIMH 1R03MH114503-01 (R03) Small Grant Award
Principal Investigator: Sandipan Bhattacharjee
Co-Investigator: Wei-Hsuan "Jenny" Lo-Ciganic
8/2017-7/2019 (\$100,000)
This project aims to increase real-world evidence on the benefits of depression treatment among older adults with dementia so that health care providers, patients, and caregivers can make informed decisions about prioritizing treatment for depression and newly diagnosed major depression.

A Behavioral Economic Intervention to Reduce Marijuana Use in Truant Youth

NIH/NIDA K23DA046565 (K23) Mentored Patient-Oriented Research Career Development Award
Principal Investigator: Ali Yurasek
Co-Mentor/Collaborator: Haesuk Park
4/2019-3/2024 (\$843,994)
This award supports co-mentorship on the principal investigator's project, which aims to adapt a brief (one session) behavioral economic intervention to reduce marijuana use that involves truant youth and their parents by examining the acceptability, feasibility, and initial efficacy of this intervention with adolescents referred for services as part of a juvenile specialty (truancy) diversion program.

Medicaid Prior Authorization Policies for Chronic Hepatitis C Treatment in Vulnerable Populations

NIH/NIDA K01DA045618 (K01) Research Scientist Development Award
Principal Investigator: Haesuk Park
Mentor: Almut Winterstein
5/2018-4/2023 (\$648,423)
This award supports the PI's career development in viral hepatitis and health policy for individuals with substance use disorders and HIV co-infection. The project will advance the understanding of the consequences of Medicaid policies for hepatitis C treatment on accessibility, quality of care, and clinical outcomes critical to improving access to care and health equality in underserved and vulnerable populations.

Improving Medication Adherence with Telehealthcare Medication Therapy Management to Change Health Outcomes in Adolescents and Young Adults with Asthma (MATCH)

NIH/NHLBI R01HL136945 (R01) Research Project Grant Award
Principal Investigator: Kathryn Blake (Nemours Children's Clinic)
Co-Investigators: Haesuk Park, Almut Winterstein
5/2018-3/2023 (\$714,513)
This project aims to use video telemedicine to improve medication adherence in adolescents and young adults with poorly controlled asthma by monitoring improvements in

of Medical Marijuana Use dispensing data with other data sets that allow tracking of clinical outcomes. The repository will be available to researchers within the consortium and create a statewide resource for real-world health outcomes research related to medical marijuana.

UF has appointed Robert Cook, M.D., M.P.H., a professor of epidemiology and internal medicine in the UF College of Public Health and Health Professions and the UF College of Medicine to direct the Clinical Research Core. Cook currently leads a five-year, NIH-funded research study examining the health effects of marijuana that involves several universities in Florida.

The core will assemble a group of physicians and clinical partners to recruit patients for medical marijuana research studies. In addition, the core plans to conduct a survey of medical marijuana providers in Florida, engage a scientific expert group and provide opportunities for the public and industry to help inform the most urgent clinical research priorities.

“Throughout Florida, over 200,000 people are currently registered to receive medical marijuana, including people suffering from severe and life-threatening health conditions,” Cook said. “Our consortium’s responsibility is to address this important public health need by supporting research that focuses on clinical health and safety outcomes among persons using it. Our goal is to be as objective as possible.”

At UF, nearly 20 extramurally funded marijuana research studies have been initiated in the past five years. Researchers are examining the health benefits and risks of medical marijuana from multiple perspectives, including outcomes research related to HIV infection; chronic pain in older adults; and cannabidiol treatment for children with drug-resistant epilepsy.



asthma outcomes through adherence counseling with a pharmacist via telehealth in a convenient and private location.

Community Health Workers Practice Improvements

Florida Department of Health
Principal Investigator: Richard Segal
04/2019-09/2021 (\$161,174)
The overall goal of this project is to develop a critical mass of medication therapy management workforce who will effectively address medication therapy disparities in Florida.

Florida Minority Cancer Research and Training Center: Feasibility Studies

NIH/NCI P20CA192992 (P20)
Exploratory Grant
Principal Investigator: Folakemi Odedina
Co-Investigator: Richard Segal
09/2014-08/2019 (\$158,966)
This project aims to develop a Florida Minority Cancer Research & Training Center that will expand cancer research and training opportunities

for underrepresented minority, or URM, faculty and students at UF and Florida A&M University and ultimately grow the number of URM scientists and clinical investigators in biomedical research.

Summer Health Professions Education Program

Robert Wood Johnson Foundation (75124)
Co-Investigator: Richard Segal
12/2017-11/2018 (\$330,000)
This project strengthened the academic proficiency and career development of rising sophomore and junior college students, and community college students from backgrounds that are underrepresented in the health professions and who are interested in pursuing health-related careers, including the profession of pharmacy.

Medication Therapy Management Support Training Services

Centers for Disease Control & Prevention NU58DP004800-04-01
Principal Investigator: Richard Segal

07/2017-09/2018 (\$46,009)
The overall goal of this project was to develop, implement, and assess a Community Health Workers, or CHW, Medication Therapy Management Support, or MTMS, program that provides MTMS training for CHWs in Florida.

Pharmacological Management of Pain in Alzheimer’s Disease and Related Dementia (ADRD)

NIH/NIA 1K01AG054764-01A1 (K01) Mentored Research Scientist Development Award
Principal Investigator: Yu-Jung “Jenny” Wei
Mentor: Almut Winterstein
08/2017-06/2022 (\$621,865)
This project aims to provide preliminary data that improve our understanding of current pain medication prescribing and potential discrepancies between practices and pain guidelines, and to formulate hypotheses for future research regarding the role of pain control in reducing mental health problems in ADRD.

GRADUATE FACULTY – AREAS OF INTEREST

NEW FACULTY IN 2018-19



JUAN HINCAPIE-CASTILLO, PHARM.D., M.S., PH.D.
ASSISTANT PROFESSOR

Hincapie-Castillo's research interests include the study of drug utilization and safety in the area of pain management, the evaluation of the effects of state and federal laws on patient outcomes (legal epidemiology), and the assessment of patient safety and quality for inpatient pain management.



AMIE GOODIN, PH.D., M.P.P.
ASSISTANT PROFESSOR

Goodin's research focuses on policy evaluation through the lens of health services research, incorporating mixed-method approaches to assess the impact of policy changes on populations that face health disparities. Specific interests include substance use disorders, particularly opioids and tobacco cessation during pregnancy.

CURRENT FACULTY IN 2018-19



ALMUT WINTERSTEIN, R.PH., PH.D., FISPE
PROFESSOR & CHAIR

**DR. ROBERT AND BARBARA CRISAFI CHAIR IN MEDICATION SAFETY
DIRECTOR, CENTER FOR DRUG EVALUATION AND SAFETY**

Winterstein's research program focuses on the evaluation and prediction of drug safety and effectiveness in real-world populations and on devising ways to improve medication use. Clinical areas of interest include pediatrics and pregnancy, psychopharmacology and treatment and prevention of infectious disease.



JOSHUA BROWN, PHARM.D., PH.D., M.S.
**ASSISTANT PROFESSOR AND ASSOCIATE GRADUATE
PROGRAM DIRECTOR**

Brown's research is in the field of comparative effectiveness and safety research focusing on anticoagulants, hematology and cardiology and in health care policy evaluation. His research also focuses on medication effects on mobility and aging in older adults and developing real-world evidence for generic drugs and biosimilars.



KARAM DIABY, PH.D., M.SC.
ASSISTANT PROFESSOR

Diaby's research interests are in the field of economic evaluation, decision analytic modeling, health technology assessment, or HTA, and priority setting using multi-criteria decision analysis, or MCDA.

CURRENT FACULTY IN 2018-19



WEI-HSUAN “JENNY” LO-CIGANIC, PH.D., M.S., M.S. PHARM
ASSISTANT PROFESSOR

Lo-Ciganic’s research program focuses on evaluation of treatment effectiveness and safety, application of advanced predictive analytics, and improvement of prescribing quality and health disparity, especially among vulnerable populations. Areas of research interests include medication adherence, prescription drug abuse, treatment for substance use disorders, chronic diseases management and oncology.



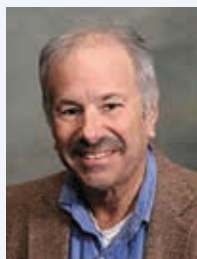
ROBERT NAVARRO, PHARM.D.
EMERITUS CLINICAL PROFESSOR

Navarro’s research interests include real-world drug value assessments, performance-based risk-sharing arrangements with pharmaceutical manufacturers and value-based drug formulary management in various patient populations, as well as benefits and risks of public pharmaceutical policy on patient drug access, affordability and outcomes experiences.



HAESUK PARK, PH.D.
ASSOCIATE PROFESSOR

Park’s research program focuses on the evaluation of economic and health outcomes of medication and pharmaceutical care services, as well as policy associated with the use of pharmaceuticals.



RICHARD SEGAL, R.PH., PH.D., M.S.
ASSOCIATE DEAN, PROFESSOR AND GRADUATE PROGRAM DIRECTOR

Segal’s research focuses on improving the quality and safety of the medication use process, with a particular emphasis on improving prescribing practices and in creating collaborative practice models to improve medication use by patients.



SCOTT MARTIN VOURI, PHARM.D., PH.D., BCGP
CLINICAL ASSISTANT PROFESSOR AND ASSISTANT DIRECTOR OF PHARMACY SERVICES-UF HEALTH PHYSICIANS

Vouri’s research interests include pharmacoepidemiology and pharmaceutical health services research related to the fields of inappropriate medication prescribing/deprescribing, geriatrics, urology and medication utilization following bariatric surgery.



YU-JUNG “JENNY” WEI, PH.D.
ASSISTANT PROFESSOR

Wei’s research programs focus on questions surrounding the effectiveness, safety and quality of medication use in elderly patients with chronic conditions, especially those in nursing home settings.

POSTDOCTORAL FELLOWS & RESEARCH FACULTY



VASSIKI SANOGO, PH.D.

ASSISTANT SCIENTIST

Sanogo joined as an Assistant Scientist following a postdoctoral fellowship working with Karam Diaby.



SABINA NDUAGUBA, PH.D.

POSTDOCTORAL FELLOW

Nduaguba is a postdoctoral fellow and works with Almut Winterstein.



HYUN JIN SONG, PH.D.

POSTDOCTORAL FELLOW

Song is a postdoctoral fellow and works with Haesuk Park.



SILKEN USMANI, PHARM.D.

POSTDOCTORAL FELLOW

Usmani is a postdoctoral fellow and works with Scott Martin Vouri.



FOR ALL DEPARTMENT NEWS IN THE PAST YEAR, VISIT
[POP.PHARMACY.UFL.EDU/CATEGORY/RECENT-NEWS/](https://pop.pharmacy.ufl.edu/category/recent-news/)

FAST FACTS FOR 2019

18

ACTIVE
EXTRAMURALLY
FUNDED PROJECTS

\$11M

IN EXTRAMURAL
FUNDING

\$6M

LED BY
DEPARTMENT
FACULTY

30

MANUSCRIPTS
FIRST-AUTHORED BY
GRADUATE STUDENTS

OVER
150

M.S. STUDENTS

AND

30

PH.D. STUDENTS

78

PEER-REVIEWED
MANUSCRIPTS

AWARDS, HONORS & APPOINTMENTS

ALMUT WINTERSTEIN, R.PH., PH.D., FISPE

PROFESSOR & CHAIR

DR. ROBERT AND BARBARA CRISAFI CHAIR IN MEDICATION SAFETY

DIRECTOR, CENTER FOR DRUG EVALUATION AND SAFETY

- President-elect, International Society of Pharmacoepidemiology , 2018-19
- Member, ISPE scientific program committee for 2019 annual meeting, 2018-19
- Chair, ISPE scientific program committee for 2020 midyear meeting, 2019-20
- Member, International Pharmaceutical Federation, scientific programming committee for 2020 Pharmaceutical Sciences World Congress, 2019-20
- Vice Chair, Florida Medical Marijuana Research and Education Board, 2018-20
- Literature Award for Pharmacy Practice Research, American Society of Health-System Pharmacists Foundation, 2018
- UF Term Professorship, University of Florida, 2018

DR. SCOTT MARTIN VOURI

NAMED A CLAUDE D. PEPPER JUNIOR SCHOLAR



Scott Martin Vouri, Pharm.D., Ph.D., BCPG, an assistant professor of pharmaceutical outcomes and policy, has been named a Claude D. Pepper Older American Independence Center Junior Scholar. The distinction comes with a two-year, \$104,000 award, which Vouri will use to study a type of drug-induced adverse event called a prescribing cascade in older adults.

Vouri plans to assess a prescribing cascade involving the use of calcium channel blockers that can result in edema and requires treatment with a diuretic. A prescribing cascade occurs when side effects of a drug are misdiagnosed as symptoms of another problem, resulting in additional use of other medications and further side effects. This unnecessary use of diuretic medications in older adults can contribute to multiple side effects including acute kidney disease, urinary incontinence and fall-related injuries among others. Vouri aims to estimate the incidence, quantify the consequences and develop prediction models that can identify patients who experience the prescribing cascade.

DR. JOSH BROWN RECEIVES AMCP'S 2019 NEW PRACTITIONER AWARD

The Academy of Managed Care Pharmacy, or AMCP, awarded its 2019 New Practitioner Award to Josh Brown, Pharm.D., Ph.D., an assistant professor of pharmaceutical outcomes and policy. He received the award at the organization's annual meeting in San Diego on March 26. AMCP established the award in 2015 to recognize a member making a significant contribution to managed care pharmacy within five years of graduation from a first professional degree in pharmacy, medicine or nursing.

Brown was nominated by colleague Robert Navarro, Pharm.D., who was a founding member of AMCP and the organization's first president, and is an emeritus clinical faculty member of the UF College of Pharmacy. Navarro noted Brown's prolific publication list and track record of research, experience with both managed care and pharmaceutical industries and his activities with UF's local AMCP student chapter. "Dr. Navarro's nomination truly means the world to me given his involvement with AMCP and the example he sets for excellence in this field," Brown said.

In five years since graduating with his Doctor of Pharmacy degree in 2014, Brown has published more than 50 manuscripts and his research has been funded by the NIH, FDA, PhRMA Foundation and the Bill & Melinda Gates Foundation. He completed his Ph.D. at the University of Kentucky and participated in a joint Humana-Pfizer Fellowship program during which he led and conducted collaborative research between these organizations. Among other activities, he currently sits on the editorial advisory board of the Journal for Managed Care and Specialty Pharmacy, which is AMCP's flagship publication and the leading journal for managed care pharmacy.



JOSHUA BROWN, PHARM.D., PH.D., M.S.

ASSISTANT PROFESSOR AND ASSOCIATE GRADUATE PROGRAM DIRECTOR

- Editorial Advisory Board member, Research in Social and Administrative Pharmacy, 2019-22
- New Practitioner Award, Academy of Managed Care Pharmacy, 2019
- Emerging Leader Award, National Academy of Medicine, 2019
- Manuscript of the Year, Runner-Up, Policy Section, AcademyHealth and Agency for Healthcare Research and Quality, 2019
- Editorial Advisory Board member, Journal of Managed Care and Specialty Pharmacy (JMCP), 2018-19
- Chair, Task Group 4, JMCP publishing standards review and update, 2018-19
- Editorial Board member (permanent), Journal of Clinical Medicine, Pharmacology section, 2018
- Associate Editor (permanent), BMC Cardiovascular Disorders, 2018
- NIH Loan Repayment Program Award, National Institutes of Health, 2018

KARAM DIABY, PH.D., M.SC.

ASSISTANT PROFESSOR

- Editor, PharmacoEconomics – Open, 2019
- Member, International Society for Pharmacoeconomics and Outcomes Systematic Reviews with Cost and Cost-Effectiveness Outcomes Good Practices Task Force, 2019
- Editor, PLoS One, 2018

AMIE GOODIN, PH.D., M.P.P.

ASSISTANT PROFESSOR

- The Healthcare Cost and Utilization Project 2018 Outstanding Article of the Year Award, Honorable Mention, Agency for Healthcare and Research Quality and AcademyHealth, 2019

JUAN HINCAPIE-CASTILLO, PHARM.D., M.S., PH.D.

ASSISTANT PROFESSOR

- Rising Stars in Health-Related Sciences symposium (invited), 2019

WEI-HSUAN “JENNY” LO-CIGANIC, PH.D., M.S., M.S. PHARM

ASSISTANT PROFESSOR

- Co-Chair, Stakeholder Advisory Panel C: Measurements of “Inappropriate Duplicate Therapy,” “Adult Immunization” and “Polypharmacy,” Pharmacy Quality Alliance, 2019



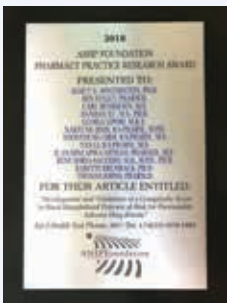
ROBERT NAVARRO, PHARM.D.

EMERITUS CLINICAL PROFESSOR

- Clinical professor emeritus appointment, UF College of Pharmacy, 2019

CONGRATULATIONS to Dr. Robert Navarro on his appointment as emeritus clinical professor!

NOVEL RISK SCORE TO PREVENT ADVERSE DRUG EVENTS WINS ASHP PHARMACY PRACTICE RESEARCH AWARD



A novel risk score that uses electronic health record data to project the risk for adverse drug events in hospitalized patients received the 2018 Pharmacy Practice Research Award at the ASHP Midyear meeting in Anaheim.

ASHP Foundation bestows the award annually to an outstanding original contribution in peer-reviewed biomedical literature related to pharmacy practice in hospitals and health systems. This year’s award was presented to a group of researchers from the University of Florida College of Pharmacy and the UF Health Shands Hospital.

The risk score, tied into electronic health records, or EHRs, calculates the risk for 16 severe adverse drug events in the early morning to focus clinicians on patients who need enhanced medication therapy management. Using more than 300 distinct clinical characteristics from the EHR, the score guides clinicians to patients at greatest need. For example, by just focusing on the top 5 percent of patients ranked according to their risk for severe hypoglycemia, more than half of all patients who will experience hypoglycemia are captured.

A key difference between this risk score and traditional clinical decision support systems is its holistic approach. Common tools are action-specific, alerting clinicians about a particular error such as an overdose or a drug-drug interaction.

“Our score doesn’t alert you that particular action is wrong. It actually alerts you about the aggregate of all of the actions and factors that may jointly escalate the risk for an adverse drug event for a particular patient,” said principal investigator Almut Winterstein, Ph.D., a professor and The Dr. Robert and Barbara Crisafi Chair of Pharmaceutical Outcomes and Policy. “Because it considers this plethora of risk factors, the score avoids false alerts and instead ranks patients according to their probability for an adverse event.”

The ranking approach aims to cut down on alert fatigue, which occurs when clinicians become bombarded with irrelevant alerts, causing them to miss important ones.

“The issue with these types of alerts is sensitivity and specificity, so if you take all the alerts that live online in these databases, they cover a lot but 90 percent may not be clinically relevant,” Winterstein said. “For example, there are a lot of drug-drug interactions that theoretically might occur, but in reality, will not.”

A portion of the score that focuses on severe hypo- and hyperglycemia has been implemented at UF Health hospitals in Gainesville and Jacksonville and has proven to reliably predict patients at greatest risk. Evaluations of its effectiveness to reduce the incidence of adverse events are ongoing.

“This research was really the perfect alignment of our prior work and a concrete clinical need that was defined in the ASHP Practice Advancement Initiative,” Winterstein said. The next step in her research is to validate and implement the risk score in other health systems.



**HAESUK PARK, PH.D.
ASSOCIATE PROFESSOR**

- Tenure award and promotion to associate professor, UF College of Pharmacy, 2019
- Outstanding publication in clinical science research award, UF College of Pharmacy, 2019

CONGRATULATIONS to Dr. Haesuk Park on her promotion to tenure and associate professor!

**RICHARD SEGAL, R.PH., PH.D., M.S.
ASSOCIATE DEAN, PROFESSOR, AND GRADUATE
PROGRAM DIRECTOR**

- Silver Award for abstract, Academy of Managed Care Pharmacy, 2018

**SCOTT M. VOURI, PHARM.D., PH.D., BCGP
CLINICAL ASSISTANT PROFESSOR AND ASSISTANT
DIRECTOR OF PHARMACY SERVICES-UF HEALTH
PHYSICIANS**

- Claude D. Pepper Junior Scholar, University of Florida, 2019
- Certified Geriatric Pharmacist Exam Preparation and Recertification Boot Camp Continuing Education Series (invited), American Society of Consultant Pharmacists, 2019
- The Sternfels Prize for Drug Safety Discoveries – Top 30 Submission, The Sternfels Prize for Drug Safety Discoveries, 2019
- Presidential Poster Session (two posters selected), American Geriatrics Society Annual Meeting, 2018

TRANSLATING BIG DATA INTO EVEN **BIGGER, HEALTHIER AND SAFER OUTCOMES**



NEW TREATMENT FOR HEPATITIS C RESULTS IN LOWER COSTS OVERALL

Patients who take new oral direct-acting antivirals for hepatitis C have lower risk for developing liver cancer and other health conditions, cost less to insure in the short term, and end up spending less money on their own health care costs overall, a study by University of Florida researchers has found.

The study, published in the journal *Hepatology*, examined the clinical and economic outcomes of direct-acting antiviral therapy, which cures hepatitis C in nearly 95 percent of patients. The hepatitis C virus affects more than 3 million people in the U.S. who often show no symptoms for years. When left untreated, the virus can cause liver cancer; cirrhosis, or liver scarring; and other serious liver problems.

This was the first such study on real-world clinical and economic outcomes of direct-acting antiviral therapy.

In a finding the researchers called “disturbing,” 70 percent of hepatitis C patients in the nationwide health insurance database analyzed in the study had not received treatment, reflecting expensive drug costs and prior authorization policies.

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“We were very surprised to find that only 30 percent of our population received the medication,” said study author Haesuk Park, Ph.D., an associate professor in the UF College of Pharmacy’s department of pharmaceutical outcomes and policies.

“This database only includes patients who actually have health insurance,” she said. “They should have better access to treatment than the general population, many of whom don’t have health insurance at all. Generics became available in January, so we expect a change in insurance overage over time, resulting in more patients receiving the medication.”

Health insurers authorized treatment of sicker patients, not the relatively healthier hepatitis C patients who could develop liver complications later. This delay in treatment has potentially costly consequences.

Data from the Truven Health MarketScan Database records from 2012-16 showed a decreased risk of developing hepatocellular carcinoma and decompensated cirrhosis, resulting in decreased health care costs, especially in cirrhotic patients, for those who received direct-acting antiviral therapy.

In addition, patients who received treatment spent \$2,800 less on liver-related expenditures and \$13,700 less per person per year overall.

“The challenge now is convincing payers and health care providers to prescribe the effective medication to hepatitis C patients so they can cure their infection and prevent patients from developing liver complications later,” Park said.

Meanwhile, patients should advocate for their own treatment, she said.

“What I would suggest to patients is to engage with physicians to try to initiate the hepatitis C virus regimen,” she said. “It only takes eight to 12 weeks of therapy to cure the hepatitis C virus.”

Although direct-acting antivirals have been an approved treatment for nearly five years, little has been reported on real-world implications for patients. UF has become a leader in these types of real-world studies, part of the university’s commitment to translational research that accelerates research discoveries’ journey from idea to practice, where findings become the treatments, cures and approaches that make a difference in the everyday lives of patients.

“We know that direct-acting antivirals work, thanks to years of research. We know that they can cure hepatitis C in a relatively short amount of time, and that they are easier for patients to take than previous treatments,” said study author David R. Nelson, M.D., an internationally recognized liver researcher and senior vice president for health affairs at UF and president of UF Health.

“This study showed the practical circumstances patients face in accessing treatment, and the challenge we face in ending hepatitis C even though we have effective treatment options,” Nelson said. “It’s an approach to research that extends beyond this study and hepatitis C to the practical considerations of other diseases and overall health of populations.”

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DR. JOSH BROWN APPOINTED AS ASSOCIATE EDITOR OF BMC CARDIOVASCULAR DISORDERS AND EDITORIAL ADVISORY BOARD OF JMCP



Joshua Brown, Pharm.D., Ph.D., M.S., an assistant professor of pharmaceutical outcomes and policy, has been appointed to the editorial board of the BMC Cardiovascular Disorders journal. His appointment is in the “non-coronary artery cardiac disease” section, one of five subject areas covered by the board. As an editorial board member, Brown will participate in the manuscript review process at all stages including the editorial decisions on manuscripts, identifying potential reviewers and communicating with authors.

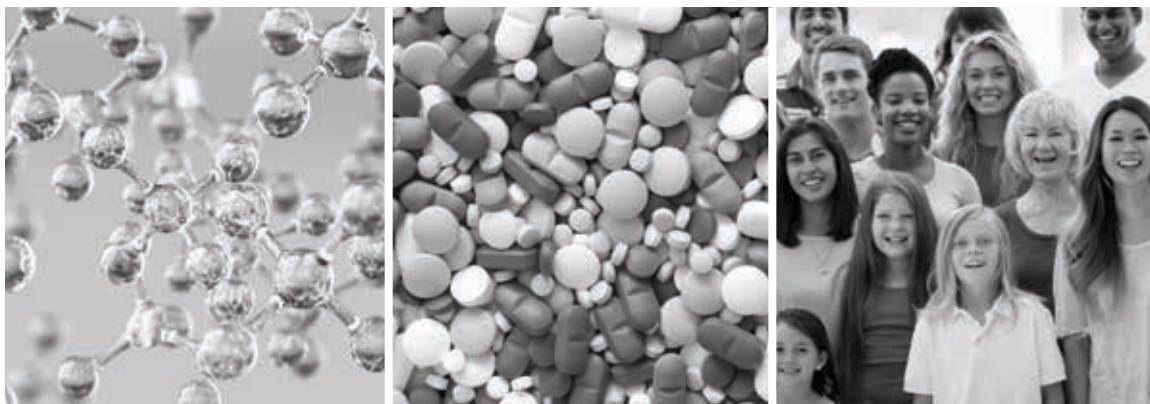
BMC Cardiovascular Disorders is an open access, peer-reviewed journal that considers articles on all aspects of the prevention, diagnosis and management of disorders of the heart and circulatory system, as well as related molecular and cell biology, genetics, pathophysiology, epidemiology and controlled trials. He credits this appointment to his work in cardiovascular diseases through grants from the U.S. Food and Drug Administration and the PhRMA Foundation, on which he has largely focused on treatment and prevention for thrombosis in atrial fibrillation and venous thromboembolism.

Brown has been appointed as an Editorial Advisory Board member for the Journal of Managed Care & Specialty Pharmacy, the flagship journal of the Academy of Managed Care Pharmacy, or AMCP, and will serve in that role until 2020 providing input on editorial content and service to the editorial board of that journal.

These service appointments are the first for Brown, who joined the college in 2016.

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* indicates graduate student



INTRODUCING THE NEW **CENTER FOR DRUG EVALUATION AND SAFETY**

Established in 2019, the University of Florida Center for Drug Evaluation and Safety, or CoDES, aims to improve public health by enhancing and disseminating evidence on the safety and value of medications in real-world populations. CoDES unites a multidisciplinary group of big data researchers in epidemiology, health economics, health services research and decision-sciences who evaluate and project drug outcomes to guide policy and clinical and personal decision-making. In addition to delivering new actionable evidence, CoDES fosters the development of new methods and analytic tools to enhance drug evaluation and regulatory science.

FOCUS

CoDES develops and integrates resources on the assessment and improvement of drug use locally, nationally and internationally through five distinct research programs:

- **PHASE IV STUDIES** evaluate drug safety and effectiveness in real-world populations to enhance pre-approval evidence.
- **PHARMACOECONOMIC STUDIES** assess the value of drugs and related programs to guide investment of personal, payer and societal resources.
- **MEDICATION USE QUALITY STUDIES** evaluate the quality and determinants of medication use to direct the allocation of programmatic resources and policy.
- **PHARMACEUTICAL PREDICTIVE ANALYTICS STUDIES** develop predictive tools for drug response and adverse events to support clinical care and related policy.
- **PHARMACEUTICAL POLICY STUDIES** evaluate policy surrounding medication use to enhance programmatic efforts aimed to improve access and quality of drug therapy.

CoDES STATS

300M

LIVES' HEALTH CARE RECORDS

20+

RESEARCHERS

4

UF HEALTH ACADEMIC
COLLEGES INVOLVED

190+

PEER-REVIEWED PUBLICATIONS BY
CENTER MEMBERS IN 2018-19

1

POSTDOCTORAL
FELLOW

ACTIVITIES

Activities at CoDES aim to build a foundation for real-world data research.

- **BIG DATA INFRASTRUCTURE** — CoDES has access to health care records for more than 300+ million lives.
- **BIG DRUG DATA ANALYTICAL SUPPORT** — CoDES provides expertise in the measurement of drug exposure and outcomes/phenotypes, causal inference and predictive design and analysis.
- **RESEARCH EXCHANGE** — CoDES maintains an email listserv, website, Twitter account and seminar series.
- **POSTDOCTORAL FELLOWSHIP PROGRAM** — CoDES has introduced a postdoctoral fellowship program that capitalizes on the interdisciplinary nature of its researchers, with the goal of training the next generation of researchers.

FOLLOW THE CENTER FOR DRUG EVALUATION AND SAFETY ON TWITTER @UFCODES

 *established*
06.19

 **2.2K**
profile visits

 **141**
followers

 **65K+**
impressions

*As of Oct. 7, 2019



CoDES RESEARCH TEAM

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LETTER FROM THE GRADUATE DIRECTOR

As the department's graduate director, I am delighted to share information about the state of our graduate program. Our program is all about creating world-class researchers and policymakers in an interdisciplinary, collaborative environment. We have been laser-focused on preparing the next generation of independent, intellectual leaders in fields spanning academia, industry and regulatory science. Our graduate program offerings consist of M.S. degrees or a Ph.D. Our M.S. degree programs include a research-focused M.S. with a thesis program on campus and an applied non-thesis M.S. degree that can be completed online. During the past academic year, 32 graduate students have been part of our residential graduate program, with almost all working on a doctoral degree. And, our program continues to grow with seven new students beginning in the fall 2019 term. Further, our students represent a mix in terms of their home country with 10 nations represented. Our students choose a specialization area, which includes pharmacoepidemiology and safety sciences, pharmacoconomics and outcomes research or pharmaceutical health services research.

During the past year, these students first-authored 30 papers in peer reviewed journals, including papers published in high impact journals such as Lancet Haematology and Clinical Infectious Diseases. Our students have traveled extensively to speak about their research, giving more than 40 presentations at national or international research or professional meetings. The department also introduced two new annual awards to recognize graduate students who have been particularly meritorious in critical scientific skills including research, leadership and service. For 2018, Ghadeer Dawwas, Ph.D., received the "POP Graduate Student Publication Award" meant to recognize a graduate student who has displayed excellence in a single peer-reviewed article or a body of scientific work. Xinyi "Rose" Jiang, M.S., was the recipient of the "Leadership Service Award," or the "POP Star" award for a student who displays a passion for the department, for research, is a leader and an overall good citizen. Further, graduates during the prior academic year have found incredible positions upon finishing their degree program, such as deputy director of the FDA's Division of Pharmacovigilance I and an associate director at Merck's Center of Observational and Real-World Evidence.

The online M.S. program, and related graduate certificate programs, have offered state-of-the-art learning experiences to more than 140 students in the past year. The specialty tracks in applied pharmacoconomics, managed care pharmacy systems, patient safety in medication use and pharmaceutical regulation offer coursework tailored for working professionals. Students have raved about the value added from their participation in the program, and I encourage you to check out some of the student testimonials about how the program has impacted them professionally.



As you can tell, we are really proud of our students and graduates. They have accomplished a great deal during the past year and, most importantly, are making significant impacts on society through their research and their professional achievements.

RICHARD SEGAL, R.PH., PH.D., M.S.

Professor and Graduate Director
Associate Dean for Faculty Affairs

WHO WE ARE

11

FACULTY

4

POSTDOCTORAL
FELLOWS

5

STAFF

30

PH.D. STUDENTS

2

RESIDENTIAL MASTER'S
STUDENTS

TRAINING THE NEXT GENERATION OF

2019 GRADUATES



ABDULLAH ALAWAN, PHARM.D., PH.D.

Dissertation: Assessment of the Use of Warfarin in Bariatric Surgery Patients

Advisor: Abraham Hartzema

First position after graduation: Assistant Professor, Qassim University, Qassim, Saudi Arabia



GHADHEER DAWWAS, PH.D., M.B.A., B.S. PHARM

Dissertation title: Safety and Effectiveness of Anti-Platelet Therapy in Acute Coronary Syndrome Patients

Advisor: Haesuk Park

First position after graduation: Postdoctoral Fellow, Pharmaceutical Outcomes and Policy, University of Florida



JUAN HINCAPIE-CASTILLO, PHARM.D., M.S., PH.D.

Dissertation title: Evaluating Unintended Consequences of Strategies Aimed to Control the Opioid Crisis on Acute Pain Management Patient Outcomes.

Advisor: Almut Winterstein

First position after graduation: Assistant Professor, Pharmaceutical Outcomes and Policy, University of Florida

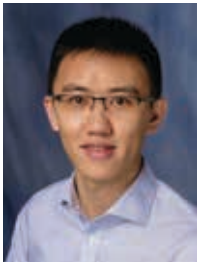


JU HYEUN "ELISE" KIM, PHARM.D., PH.D.

Dissertation title: Reducing the Burden of Disease in Patients with Rheumatoid Arthritis

Advisor: Abraham Hartzema

SCIENTISTS



YAN LI, PH.D., M.S., B.S. PHARM

Dissertation title: Epidemiology and Safety of Skeletal Muscle Relaxants and Concomitant Opioid or Psychotropic Medication Use.
Advisor: Almut Winterstein
First position after graduation: ORISE Fellow in the Division of Pulmonary, Allergy and Rheumatology Products at the Office of New Drugs, Center for Drug Evaluation and Research, Food and Drug Administration



MONICA MUÑOZ, PHARM.D., PH.D., M.S.

Dissertation title: Direct Reporting to the U.S. Food and Drug Administration’s Adverse Event Reporting System: An Evaluation of Reporting Patterns, Impact of Consumer Reporting Form Changes, and Pharmacovigilance Utility
Advisor: Almut Winterstein
First position after graduation: Deputy Director, Division of Pharmacovigilance I, FDA



WEI “VIVIAN” WANG, PH.D., B.S.

Dissertation title: Cancer Risks and Economic Burden in Hepatitis C Virus Infected Patients in the Era of Direct-Acting Antivirals.
Advisor: Haesuk Park
First position after graduation: Associate Director at Vaccine Product Line, Center of Observational and Real-world Evidence, Merck

TRAINING THE NEXT GENERATION OF

PH.D. STUDENTS



Yasser Albogami,
M.S., B.S. Pharm



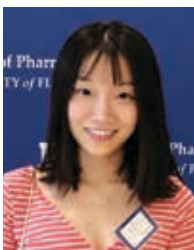
Hussain Alqhtani,
B.S. Pharm



Aram Babcock,
Pharm.D., R.Ph., M.S.,
M.B.A.



Ching-Yuan "Peggy"
Chang, M.S., B.S.



Cheng "Alice" Chen,
B.S. Pharm



Ziyan Chen, M.S.



Brianna Costales, B.S.



Mohannad Elkhider,
M.S., B.S. Pharm



Yushi Huang,
Pharm.D.



Mahek Garg, M.S.,
B.S. Pharm



Xinyi "Rose" Jiang,
B.S.



Motomori Lewis, B.S.



Phuong Pham,
MSPH, B.S. Pharm



Munaza Riaz,
Pharm.D., M.Phil.



Amir Sarayani,
Pharm.D., M.P.H.



Yun Shen, M.P.H.

SCIENTISTS



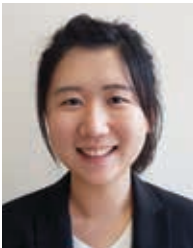
Patrick Squires,
Pharm.D.



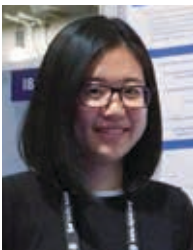
Phuong "Phoenix"
Tan Tran, M.P.H.,
B.S. Pharm



Thuy Thai, M.P.H.,
B.S. Pharm



Ching-Yu "Jessie"
Wang, B.S.



Xi Wang, M.P.H., B.M.



Sascha Wegmann,
M.S., B.S. Pharm



Bingcao "Glenn" Wu,
M.P.H., M.S.

THESIS M.S. STUDENTS



Abdulrahman
Alsuhbani, Pharm.D.



Mashael Alaskar, B.S.
Pharm

ONLINE GRADUATE PROGRAMS

The department of pharmaceutical outcomes and policy's graduate programs include graduate certificates and training toward a non-thesis M.S. degree in four specialty tracks.

APPLIED PHARMACOECONOMICS

Applied pharmacoeconomics centers on the conversion of pharmacoeconomic principles, methods and theories into practice to assess the value of pharmaceutical products and services used in real-world settings. Pharmacoeconomic studies provide scientifically grounded data to inform the optimal allocation of health care resources.

TRACK DIRECTOR: Karam Diaby, Ph.D., M.Sc.

MANAGED CARE PHARMACY SYSTEMS

Managed care implies a defined structure and process of designing and delivering covered health care benefits that include risk-sharing, outcomes measurement, price and utilization controls and quality assurance.

TRACK DIRECTOR: Laura Happe, Pharm.D., M.P.H.

PATIENT SAFETY IN MEDICATION USE

This track focuses on the design and evaluation of quality improvement initiatives aimed at reducing medication errors and adverse drug events. Intended primarily for pharmacists and other clinicians familiar with the drug use system, the curriculum is designed to focus on competencies and skills needed by those acting as patient or medication safety officers or working in quality divisions in health systems or clinical operations.

TRACK DIRECTOR: Randy Hatton, Pharm.D.

PHARMACEUTICAL REGULATION

The curriculum in the pharmaceutical regulation track is designed to give students a firm grounding in the regulatory framework around the manufacturing, distribution, dispensing and use of pharmaceutical products, and to place pharmaceuticals in a large context of health care.

TRACK DIRECTOR: W. Thomas Smith, Pharm.D., J.D.

FAST FACTS FOR 2019



146

matriculated students



56

certificates awarded



31

faculty taught courses



45

M.S. graduates

WE TRANSLATE BIG DATA INTO EVEN BIGGER, HEALTHIER and SAFER OUTCOMES

It's no secret drugs can do amazing, positive things for your health. But real-life medical miracles can turn into health threats. Many drugs have raised serious safety concerns after FDA approval, often because they were tested on only small samples or patients different than you.

At the University of Florida College of Pharmacy, we are working hard to gather and translate literally millions of real-life results into effective knowledge that can catch harmful side effects before they hurt you or your family. For us, this isn't just a numbers game. It's an opportunity to combine comprehensive data and proven expertise into a whole new way for pharmacists to improve and save patients' lives.

To learn more about how you can invest in our efforts to make drugs safer for you and your loved ones, please contact Elizabeth Zipper at 325-273-6605 or ezipper@cop.ufl.edu



Department of Pharmaceutical
Outcomes & Policy
UNIVERSITY of FLORIDA

