

ASU Expertise in Opioid Addiction

June 2017

Background

Opioids are a class of drugs that include illicit drugs such as heroin, as well as prescription pain relievers such as oxycodone, hydrocodone, codeine, morphine, and fentanyl. While these prescription drugs are generally safe when taken as prescribed, because of the euphoria and pain relief they produce, they can be misused. The rate of misuse of opioids is sharply increasing and drug overdose is now the leading cause of death for Americans under 50.¹ On an average day, 78 people die from opioid related overdoses.² Moreover, in 2015, more people died from drug overdoses than in any previous year on record and the majority of those deaths (more than six out of ten) involved an opioid.³ The opioid epidemic also has economic impacts. In 2011, \$55 billion was spent in health and social costs related to prescription opioid abuse.⁴ In 2013, \$20 billion was spent in emergency department and inpatient care for opioid poisonings.⁵

Opioid abuse was responsible for the deaths of two Arizonans a day in 2016.⁶ Further, a total of 790 Arizonans died from overdoses of opioid prescription medications and heroin last year (2016), a 74% surge since 2012.⁷ The opioid epidemic in Arizona has made such an impact that Governor Doug Ducey declared a State of Emergency and issued an Enhanced Surveillance Advisory on June 5, 2017.⁸ Additionally, Governor Ducey signed legislation to address the opioid epidemic including: (1) an order signed in October 2016 to limit initial prescriptions of opioids to seven days for adults insured by Medicaid or Arizona state's insurance plan⁹ and (2) an order enacted in August 2016 that allows pharmacies to dispense the overdose-reversal drug Naloxone without a prescription.¹⁰ Governor Ducey has also stressed the importance of building partnerships in the public and private sectors to emphasize an "all-hands-on-deck" approach to this challenge.

At Arizona State University (ASU), a number of centers, resources and faculty have expertise in addiction, drug related policies, drug abuse prevention and other areas that may prove useful in advancing efforts to contain and then eradicate this opioid abuse epidemic.

¹ Kristof, N. (2017, June 22). Opioids, a Mass Killer We're Meeting With a Shrug. Retrieved from <https://www.nytimes.com/2017/06/22/opinion/opioid-epidemic-health-care-bill.html>

² *The Opioid Epidemic: By the Numbers*[PDF]. (2016, June). Department of Health and Human Services.

³ Ibid.

⁴ Ibid.

⁵ Ibid.

⁶ Alltucker, K. (2017, June 02). Opioid, heroin deaths surge in Arizona. Retrieved from <http://www.azcentral.com/story/money/business/health/2017/06/02/opioid-heroin-deaths-surge-arizona/362869001/>

⁷ Ibid.

⁸ Governor, O. O. (2017, January 09). Governor Ducey Addresses Opioid Addiction With New Executive Order, Letter To State Medical Board. Retrieved from <https://azgovernor.gov/governor/news/2017/01/governor-ducey-addresses-opioid-addiction-new-executive-order-letter-state>

⁹ Ducey limits Medicaid, state insurance opioid prescriptions. (2016, October 24). Retrieved from

<http://www.azcentral.com/story/news/local/arizona/2016/10/24/ducey-limits-medicaid-state-insurance-opioid-prescriptions/92688280/>

¹⁰ ARIZONA STATE SENATE Fifty-Second Legislature, Second Regular Session FINAL REVISED FACT SHEET FOR H.B. 2355[PDF]. (n.d.).

Centers, Initiatives, and Programs

- [Addiction Neuroscience Lab](#): The Addiction Neuroscience Lab exists within the Department of Psychology and seeks to examine how drug abuse affects the brain on a neurobiological level. Specifically, the lab seeks to discover what long-lasting changes drug abuse produces in the brain that ultimately result in dependence and addiction and if those changes can be reversed or minimized.
- [The Biodesign Institute](#): The Biodesign Institute at ASU addresses today's critical global challenges in healthcare, sustainability and security by developing solutions inspired from natural systems and translating those solutions into commercially viable products and clinical practices. Researchers at the Biodesign Institute are seeking to develop powerful new analgesics capable of blocking pain to reduce the need for opioids. To do so, researchers are studying the structure of opioid receptors in the brain by utilizing the X-ray Free Electron Laser (XFEL), which essentially allows the researchers to get a snapshot of molecules in action.
- [Center for Applied Behavioral Health Policy \(CABHP\)](#): CABHP is a research and training unit within the College of Public Service & Community Solutions. CABHP is a resource for government agencies and organizations that seek to improve the policies, practices and implementation of programs that support people affected by behavioral health disorders. The center has worked on projects related to "Criminal Justice Drug Abuse Treatment" and "Substance Abuse Treatment."
 - [Pacific Southwest Addiction Technology Transfer Center \(PSATTC\)](#): In partnership with UCLA, the Center for Applied Behavioral Health Policy helps meet the needs of the substance abuse treatment communities in Arizona, California, Hawaii, Nevada and the Pacific Islands. The program has received a \$3.5 million, five-year continuation grant from the Substance Abuse and Mental Health Services Administration (SAMHSA). The award will support the center's effort to disseminate the latest research-based information on substance abuse treatment.
- [Center for Health Information and Research](#): Using this center's resources, ASU has the capacity to empirically document opioid prescription patterns among Medicaid reimbursed physicians throughout the state.
- [National Sewage Sludge Repository](#): ASU is home to the National Sewage Sludge Repository. Collected from 200 wastewater treatment plants, it is the largest archive of its kind in the country. Using sewage sludge analysis, researchers are able to help decipher public health concerns. For example, if wastewater sludge showed a high concentration of opioids, researchers could alert authorities to a possible undetected drug problem.
- [Precision Medicine and Big Data](#): ASU's Precision Medicine Application Domain Team is a DECISIVE Project of ASU's Research Design Council. While traditional biomedical research is individually based, DECISIVE is designed to mobilize a critical mass of researchers and funding to work on projects that will have various community impacts. The Precision Medicine team has recently decided to work on opioid addiction. The opioid addiction project will be headed by Michael Shafer.
- [REACH Institute](#): The REACH Institute is a part of the Department of Psychology and work both locally and globally with community agencies, state and local government, schools and hospitals

to implement evidence-based programs and practices with the goal of advancing research, education and the health and well-being of children and families.

- [Southwest Interdisciplinary Research Center](#): SIRC was established as a Research Consortium in 2002 by an award from the National Institute on Drug Abuse (NIDA) of the National Institutes of Health (NIH). The center has worked on projects such as: “The Development and Evaluation of the Ho’Ouna Pong Drug Prevention Curriculum” and “Drug Prevention for Rural Hawaiian Youth.”
- [Walter Cronkite School of Journalism and Mass Communication](#): The Cronkite School produced a document called HookedAZ, which tracked heroin’s hold on Arizona. The documentary was seen by over one million Arizonans and won an Alfred I. DuPont-Columbia Award, which recognizes the very best films in broadcast journalism.

Experts

Experts have been grouped into the following categories: (1) Addiction: Detection, Prevention and Treatment (2) Addiction: Policies and Social Causes (3) Addiction: Molecular and Biophysics Approaches

Name	Title/Affiliation	Email	Expertise/Research Focus
Addiction: Detection, Prevention and Treatment			
Chen, Angela	Associate Professor, College of Nursing and Health Innovation	Angela.ccchen@asu.edu	HIV/STI and substance abuse prevention, Qualitative and quantitative methodologies, Substance abuse
Davis, Mary	Professor, Department of Psychology	MARY.DAVIS@asu.edu	Chronic pain, Effective ways to treat pain without using addictive painkillers such as opioids
de la Garza, Amira	Associate Professor, Hugh Downs School of Human Communication	Delagarza@asu.edu	Drug education, Substance abuse prevention, Drug abuse, Patient care and education
Dishion, Thomas	Professor, Department of Psychology; Founder and Director REACH Institute	Dishion@asu.edu	Young-adult drug use, Preventing childhood drug use risk and early adult drug abuse, Drug abuse and HIV prevention, Family-based interventions to reduce adolescent drug abuse and addiction
Dustman, Patricia	Director, Southwest Interdisciplinary Research Center	Patricia.Dustman@asu.edu	Drug abuse treatment, Drug abuse prevention, AIDS and substance abuse, Qualitative methodology and implementation
Gueci, Veronika	Associate Director, ASU Wellness ; ASUHS Executive Team	Nika@asu.edu	Administering training to support students in recovery from alcohol and other drug addiction

Addiction: Detection, Prevention and Treatment cont.

Kessler, Rodger	Research Professor, Doctor of Behavioral Health Program	Rodger.Kessler@asu.edu	Treating depression to remission in primary care patients with low back pain to improve safe opioid prescribing, Pain Reduction
Margolis, Eric	Assistant Professor, Mary Lou Fulton Teachers College	Eric.margolis@asu.edu	Qualitative research methods, Drug abuse prevention, Health and safety, At-risk children or youth
Mendoza, Natasha	Assistant Professor, School of Social Work	tadoza@asu.edu	Mandated treatment of substance use disorders, Problematic substance use among individuals with intersecting identities of gender, race and sexual orientation
Olive, Michael Foster	Associate Professor, Department of Psychology	Foster.olive@asu.edu	Drug abuse, Chronic Stress, Methamphetamine Addiction, Addiction therapies, Cognitive dysfunction in addiction
Patock-Packham, Julie	Research Assistant Professor, Department of Psychology	JULIE.PATOCK@asu.edu	Social Addictions Impulse Lab (SAIL), Alcohol and self-esteem
Presson, Clark C.	Professor, Department of Psychology	presson@asu.edu	Nicotine use and dependence, Addiction, Drug and alcohol dependence
Robles-Sotelo, Elias	Associate Professor, School of Social and Behavioral Sciences	Elias.Robles@asu.edu	Impulsiveness, Choice, Decision making, Smoking, Addiction severity in opioid-dependent patients
Roberto, Tony	Professor, Hugh Downs School of Human Communication	Anthony.Roberto@asu.edu	Interpersonal communication, Health communication, Social influence, Predicting substance abuse treatment
Shafer, Michael	Director, Center for Applied Behavioral Health Policy; Professor, School of Social Work	Michael.Shafer@asu.edu	Opioid addiction, Medication assisted treatment, Effectiveness of telemedicine in training substance abuse counselors, Implementation of substance abuse treatment services within correctional and child welfare systems, Predicting substance-abuse treatment

Name	Title/Affiliation	Email	Expertise/Research Focus
Addiction: Policies and Social Causes			
Chassin, Laurie	Regents' Professor, Department of Psychology	Laurie.chassin@asu.edu	Adolescent risk and resilience, transitions from adolescence to adulthood, intergenerational transmission of substance use and cigarette smoking
Gonzales, Nancy	Professor, Department of Psychology (Clinical)	Nancy.gonzales@asu.edu	Mexican American alcohol, drug abuse and addiction, Mexican American substance use disorders, Adolescent substance use
Hepburn, John R.	Professor, College of Public Service & Community Solutions	John.hepburn@asu.edu	Drug abuse treatment, Law enforcement, Criminal justice, Prison and jail misconduct
Katz, Charles	Professor, School of Criminology and Criminal Justice	Charles.Katz@asu.edu	Connection between crime, drug use and gangs, Public Policy, Program Evaluation, Drug abuse
Kulis, Stephen	Professor, T. Denny Sanford School of Social and Family Dynamics	Kulis@asu.edu	Role of ethnicity, acculturation and gender identity in youth drug use and in health disparities, Substance abuse prevention, Cultural identity and substance abuse
Lopez, Vera	Associate Professor, School of Justice and Social Inquiry	Vera.Lopez@asu.edu	Delinquency, Sexuality, Substance abuse, Prevention research, Substance use and violence
Luthar, Suniya	Professor, Department of Psychology	Suniya.Luthar@asu.edu	Vulnerability and resilience among various populations, Alcohol and drug use, Performance stress and anxiety
Mackinnon, David P.	Professor, Department of Psychology	David.mackinnon@asu.edu	The role of social influence and cognitive factors in health behavior, effects of warnings, tobacco, and drug prevention, Prevention research, Statistical methods
Marsiglia, Flavio	Director, School of Social Work; Professor, School of Social Work	marsiglia@asu.edu	Children and youth drug abuse prevention, Intervention research with Latino families
Rankin, Lela	Associate Professor, School of Social Work	lrw@asu.edu	Adolescent substance use, Mexican American youth, school-based interventions

Addiction: Policies and Social Causes cont.

Rodriguez, Nancy	Professor, School of Criminology and Criminal Justice	Nancy.Rodriguez@asu.edu	Relationship between race/ethnicity and structural disadvantage and methamphetamine use, Ethnicity and crime
Spohn, Cassia	Professor, School of Criminology and Criminal Justice	Cassia.Spohn@asu.edu	Sentencing and recidivism of drug offenders, Criminal justice, Race and justice, Sentencing reforms

Name	Title/Affiliation	Email	Expertise/Research Focus
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Addiction: Molecular and Biophysics Approaches

Fromme, Petra	Director, Center for Applied Structural Discovery; Professor of Chemistry and Biochemistry; Paul V Galvin Professor; Biodesign Institute	Petra.Fromme@asu.edu	X-ray Free Election Laser (XFEL) imaging of opioid brain receptors, Analgesics, Biophysics of membrane proteins
Gipson-Reichardt, Cassandra	Assistant Professor, Department of Psychology	cgipsonr@asu.edu	Identify novel pharmacological and behavioral intervention for the treatment of drug abuse, Neurobiological substrates of addiction, miRNAs in nicotine addiction
Halden, Rolf	Director, Center for Environmental Security at the Biodesign Institute; Professor, School for Sustainable Engineering and the Built Environment	Rolf.Halden@asu.edu	Sewage sludge analysis, Connection between anthropogenic activities, environmental quality and human health
Mangone, Marco	Assistant Professor, School of Life Sciences	Marco.Mangone@asu.edu	Functional genomics of miRNA targets in cocaine addiction

Addiction: Molecular and Biophysics Approaches cont.

Neisewander, Janet	Professor, School of Life Sciences	Janet.neisewander@asu.edu	Competing roles of microRNAs and RNA-binding protein in drug addiction, Regulation of addiction-related genes and drug abuse-related behavior, Drug abuse/addiction, Behavior, Biomedicine
Spence, John	Regents' Professor, Department of Physics; Biodesign Institute	spence@asu.edu	Utilizing the X-ray Free Election Laser (XFEL) to discover potential social and medical impacts, Electron microscopy, Biophysics,
Graves, William	Associate Professor, Department of Physics; Biodesign Institute	wsg@asu.edu	Utilizing the X-ray Free Election Laser (XFEL) to discover potential social and medical impacts, X-ray Crystallography, Fundamental molecular science