



The 12th Annual Undergraduate Research Conference on Health and Society

Program

PROVIDENCE COLLEGE

APRIL 23, 2021

12TH ANNUAL UNDERGRADUATE RESEARCH CONFERENCE ON HEALTH & SOCIETY

THE DAY AT A GLANCE:

Welcome	8:30am
Panel 1 Presentations	8:30am – 10:00am
Panel 2 Presentations	10:15am - 12:00pm
Break	12:00pm - 12:30pm
Panel 3 Presentations	12:30pm - 2:00pm
Panel 4 Presentations	2:15pm - 3:45pm
Closing	4:00pm

PANEL 1 | Harmful Substances? The Promise and Misuse of Pharmaceutical and Genetic Therapies

8:30am – 10:00am

Faculty Discussant: Dr. Todd Olszewski

“Alcohol Abuse in the Time of COVID-19”

DEIRDRE MCMAHON, PROVIDENCE COLLEGE | 2021

The drastic changes in social, cultural and economic conditions derived from the COVID-19 pandemic have led to an increase in addictive behavior and alcohol abuse. In a recent survey amongst United States citizens, 60% of participants reported an increase in drinking habits compared to pre-COVID-19 (Grossman et al., 2020). Using peer-reviewed articles, this paper will study the effects the recent pandemic has had on the alcohol abuse rates in the United States. Using the information gathered from these resources, this paper will then investigate the effectiveness of our nation’s mental health and addiction policies, as well as the implications of the U.S. supply and demand of alcohol, and compare them to policies and markets of similar nations. This paper will demonstrate how the pandemic has transformed social and economic contexts (such as loss of income or employment, disruption in social relationships and networks, etc.) and increased emotional pressures, which might explain the shifts in risky behaviors including alcohol abuse. In the comparison of the different nations affected, this paper aims to discover what social, cultural and economic environment best protects citizens from developing alcohol addiction, and best supports individuals during alcohol addiction recovery in the stress of a pandemic.

“Examining the Socioeconomics of Opioid Overdoses in Lowell, Haverhill, Dracut and Chelmsford MA from 2012-2019”

KENNETH WIGGINS, UNIVERSITY OF MASSACHUSETTS LOWELL | 2021

The addictive nature of opioids has long been a documented risk of consuming the analgesic substance. However, that risk has not always been well managed by clinicians, pharmaceutical companies, or the government. A pattern of poor management by all three parties has led to the level of addiction seen today. From 1991 to 2013 the amount of opioid prescriptions increased by 272% according to the CDC. This corresponds to an estimated 450,000 deaths attributed to opioid overdoses from 1999-2018 (DEA, 2019). The purpose of this study was to examine the number of opioid overdoses between 2012 -2019 in Lowell, Chelmsford, Dracut and Haverhill (MA). The dataset used was primary opioid-abuse data collected by an ambulance service in Massachusetts. It contained 5,117 abuse incidents across the four cities between 2012-2019. Analysis of area-based socioeconomic indicators suggest a strong correlation between socioeconomics and opioid abuse, specifically mean household income, proportion of families renting real estate, and proportion of families below the poverty line. The socioeconomically suppressed have unequally beared the burden of this extortion. Thus, purposeful and comprehensive effort from society as a whole is required to stop the epidemic. Additionally, analysis of the systemic integrity compromise of the medical community and government should be addressed to prevent future disaster.

“Therapeutic Applications of Mitochondrial Uncouplers”

AUSTIN KRZYZAK, MCPHS UNIVERSITY | 2022

Mitochondrial uncoupling plays an important role in thermogenesis by brown adipose tissue (BAT) and other tissues and is estimated to account for 15-20% of whole-body energy expenditure. Mitochondrial uncoupling occurs when protons leak through the mitochondrial inner membrane, thus becoming uncoupled from the normal flow of electrons through the electron transport chain, which would ordinarily result in ATP generation. Energy released through this proton leak is dissipated as heat. While this natural phenomenon's contribution to energy balance varies from person to person, it is well established that dysregulation of mitochondrial uncoupling can lead to metabolic disease. Mitochondrial uncoupling also appears to play an important role in antioxidant defense against ROS. This paper reviews previous clinical research involving drugs that act as mitochondrial uncouplers, including their applications to obesity, fatty liver disease, ischemic injury, and ability to help regulate plasma lipids. We will further analyze possible mechanisms by which these drugs could be used to reverse, prevent, and treat many different metabolic diseases along with highlighting the future challenges of bringing this family of drugs to use in current clinical practice.

“Telemedicine and Rising Antibiotic Prescription Rates in an Era of COVID-19”

KATHRYN MCLOUGHLIN, PROVIDENCE COLLEGE | 2022

Telemedicine enables healthcare providers to remotely evaluate and diagnose patients through a variety of telecommunication platforms. Already on the rise in the United States before the onset of Covid-19, the pandemic engendered explosive growth in telemedicine, with the CDC reporting a 154% increase in

telemedicine visits in March, 2020, when compared to March, 2019. Telemedicine offers increased access to care, lower exposure to infections, and potentially lower healthcare costs. At the same time, telemedicine presents limitations when compared to in-person visits with a primary care provider, including the inability to perform physical exams and higher prescribing rates for respiratory viral tract infections among other viral illnesses. In this paper, I will bring together and analyze emergent studies which reveal higher antibiotic prescribing rates for viral infections in telemedicine visits when compared to in-person visits. I will explore some of the potentially negative health implications of widespread prescription of antibiotics inclusive of but not limited to the over 2.8 million antibiotic resistant infections that occur in the U.S each year. Finally, I will suggest the implementation of several changes to current telemedicine practices aimed at reducing high antibiotic prescribing rates and ensuring the highest quality of remote patient care.

PANEL 2 | Ethics of Care and Care Giving

10:15am – 12:00pm

Faculty Discussant: Dr. Deborah Levine

“Restoration Versus Elevation: The Ethics of Genetic Intervention for Disease and Enhancement”

MADISON PALMIERI, PROVIDENCE COLLEGE | 2022

With today's constant technological innovation and advanced medical knowledge, scientists and doctors can more fully comprehend genetics than their predecessors. With this newfound understanding, however, comes questions regarding the ethics of genetic intervention. Writers such as Walter Glannon in “Genetic Enhancement,” Julian Savulescu in “Genetic Interventions and the Ethics of Enhancement of Human Beings,” Alice Wexler in “The Unnumbered,” and Sarah Zhang in “The Cost of Not Knowing a Huntington’s Diagnosis” examine these concerns. Their writings reveal that with regard to disease, genetic intervention reduces harmful abnormalities to a healthy standard; enhancement, however, moves beyond this norm and threatens enhanced individuals’ health. Genetic intervention for disease is optional, corrective, and does not threaten an individual’s moral freedom, upholding autonomy; genetic enhancement, in contrast, violates this principle by robbing individuals of moral freedom. Although both genetic intervention for disease and genetic enhancement aim to create equality, the former successfully does so by only eliminating disadvantage-creating genes whereas the latter fails to do so by targeting non-harmful genes. Genetic testing for disease is thus ethical while genetic enhancement is unethical on the grounds of adherence to a health baseline, the principle of autonomy, and the targeting of specific genes to create equality.

“The Transformation of Compromiso as an Ethics of Care in Puerto Rico After Compounding Disasters”

KATE CADIGAN, PROVIDENCE COLLEGE | 2021; HANNA JOHNSTON, PROVIDENCE COLLEGE | 2021; KINGSLEY METELUS, PROVIDENCE COLLEGE | 2021; ELIZABETH MURRAY, PROVIDENCE COLLEGE | 2021; JAILENE VAZQUEZ, PROVIDENCE COLLEGE | 2022

Post-Hurricane Maria, Puerto Rican healthcare workers continued to provide care in new ways in light of failed infrastructure and inefficient disaster response. During initial research, healthcare workers were interviewed regarding their experiences after the hurricane. *Compromiso* was a common theme described by the workers where they expressed a deep connection to Puerto Rico and to the communities they served. The term *compromiso* has been adopted to describe the ethics of care (a concept that emphasizes interdependence and awareness of others' needs) that healthcare workers created after the hurricane.

Following Maria, there have been multiple compounding disasters. To investigate any changes in the previously established ethics of care, the next phase of research will facilitate focus groups with former interviewees to discuss their experiences with *compromiso* following these compounding disasters. Groups will include 3 - 5 interviewees of past participants and new participants using snowball sampling. The questions posed will investigate work/life experiences following Maria, the earthquake series of 2019-2020, and the current Covid-19 Pandemic. Exploring how the established ethics of care has transformed will contribute to new knowledge that can guide future health emergency response efforts and medical training in the anticipation of future disasters linked to climate change.

“The Rise of Global Political Priority for Universal Health Coverage”

TARA COONEY, PROVIDENCE COLLEGE | 2021

Universal Health Coverage (UHC), defined as all people receiving needed health services without suffering financial hardship, has recently gained prominence in the global health and development agendas. Its importance has been explained in terms of an “umbrella” that brings disparate actors and issues together, a driver of social justice, human rights and inclusive economic growth, and as a movement. Using literature review and expert interviews, this paper examines the rise of UHC in the global health agenda and uses the well-established Kingdon framework that examines generation of political priority through three different policy “streams” (problem, policy, and politics). Although this paper will utilize Kingdon’s framework, it will expand upon the categories to develop a new theoretical framework to describe UHC’s rise in the global health political agenda in a much more fluid rather than linear view of the policy process. The paper shows that the rise in attention given to UHC was the result of crucial relationships between individual global actors, international organizations advocating its importance, and country leaders embracing it as a political tool. Main findings demonstrate how specific individuals, as policy entrepreneurs, advocated their ideas within their respective international organizations to generate attention to UHC. Next, relationships between these individuals were formed across their organizations, like the World Health Organization and Rockefeller Foundation to garner support around the UHC movement. Lastly, countries undertook health system reforms aimed at achieving UHC and

success stories, like Thailand, displayed that countries were committed to the movement. Even in the middle of the COVID-19 pandemic, UHC has remarkably remained on the global health agenda. Typically, an infectious disease triggers a vertical response as a means to quickly target the infected populations. Instead of ignoring health systems, however, COVID-19 has actually brought attention to UHC and many articles declare the virus only highlights the importance of the commitment to advancing towards UHC.

“Through the Frames: Public Opinion on Medicare-For-All”

YINGTING (JENNY) CHEN, PROVIDENCE COLLEGE | 2023

In the midst of a once in a lifetime global pandemic and the concurring 2020 elections, proponents of Medicare-For-All are offering a solution to the crises at hand: public opinion research reveals that Americans worry a great deal about healthcare access and affordability, and the public are becoming both increasingly dissatisfied with the current system and increasingly convinced that it is the responsibility of the government to provide healthcare. But Medicare-For-All currently stands on a public opinion precipice. While the public appears open to consideration of a full universal healthcare system, consensus is deeply contingent upon issue framing. I researched recent Medicare-For-All polling, framing variations, and their impact on public opinion in a quantitative and sociopolitical analysis concluding that framing Medicare-For-All as a single-payer system or “socialized healthcare” is detrimental whereas framing it as an expansion of Medicare, a national system run by the government, and/or an universal and egalitarian system goes a long way to securing majority public support across party and ideological lines. Before Medicare-For-All can be legislated, its first battle is on the field of public opinion and its proponents can win through the frames.

“Physician Burnout: Causes, Effects, and Prevention Strategies”

KATHRYN FAMA, PROVIDENCE COLLEGE | 2021

The goal of this study was to determine strategies to prevent physician burnout. Physician burnout is characterized by emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment, which can lead to an increase in medical errors and a decrease in quality of care. First, the three main causes of burnout were determined through a literature review and physician interviews. They include the impact of Electronic Medical Records (EMR), loneliness, and the personality traits of physicians. To examine the effects of these factors, the job satisfaction rates of physicians in America were analyzed. Though the issue of preventing burnout is complex, two main solutions were proposed in order to combat it. The first involves lifestyle changes including meditation, exercise, and an effort to maintain a stable work-life balance. The second addresses the negative systemic changes in hospitals and other medical practices that have been brought on by the commercialization of medicine. Both of these strategies can help prevent physician burnout in both the short and long term.

PANEL 3 | Reforming Institutions: Prisons, Assisted Living Facilities, and Hospitals as Sites of Care and Control

12:30pm – 2:00pm

Faculty Discussant: Dr. Candidus Nwakasi

“Parchman Farm Penitentiary Exists as Modern Day Slavery”

SAVANNAH PLAISTED, PROVIDENCE COLLEGE | 2021

This research explores the connections between convict leasing in the state of Mississippi and the current state of prison labor at Parchman Farm Penitentiary (Mississippi State Penitentiary). The use of unpaid labor, the grossly disproportionate representation of Black men, the inhumane and grotesque conditions of the prison, the abnormally high death rate, and the continued execution of a disproportionate number of Black men of today’s Parchman Farm and the version of the prison at its initial founding in 1901 will be analyzed. All of these factors combined provide the foundation for the argument that slavery never ended in the state of Mississippi, and is perpetuated to this day through the institution of Parchman Farm Penitentiary.

“Prison Health: Access to Social Services and Anger Management/Conflict Resolution Programs”

HALEY GERVINO, PROVIDENCE COLLEGE | 2022; MEGHAN DONOVAN, PROVIDENCE COLLEGE | 2021

Anger has been found to be associated with psychosocial impairment such as depression, post-traumatic stress disorder, bipolar disorder (psychosocial impairments), and other health issues such as heart disease. Constant uncontrolled anger also contributes to aggression which can result in violence. The effect of anger on health and wellbeing, and crime, emphasizes the importance of anger management as an important intervention.

Due to the high prevalence of anger among inmates, we explored how access to some services in US prisons may influence the uptake of anger and conflict resolution programs (AMCRP) by inmates. Using the Programme for the International Assessment of Adult Competencies data and regression analysis, we examined the association between AMCRP uptake and accessing life skills training, mental health support, addiction support, and other factors among US prison inmates. We stratified the analysis by age groups, and gender. Results showed that among younger and older inmates, and across gender, accessing mental health support, addiction support, and life skills training increased the likelihood of AMCRP uptake. However, life skills training among older inmates was not associated with AMCRP uptake. These findings may help inform stakeholders in the correctional system on ways of improving wellbeing and society reintegration preparedness of inmates.

“Gerontology and Mental Health at an Assisted Living Facility”

NICHOLAS LAMBERTON, PROVIDENCE COLLEGE | 2021

I analyze the effects of physical disablement, age and marital status on quality of life among elders at an assisted living facility during the COVID-19 pandemic. The study analyzed 37 individuals living at a facility in the Pacific Northwest. This sample was almost a complete census of all residents without a cognitive impairment, as only three individuals elected to not participate in the study. Data were collected through face-to-face administered surveys and the responses were recorded using Qualtrics software. Respondents were primarily female, widowed, and white with an average age of 84. Results show a positive relationship between physical disablement and quality-of-life, operationalized as life dissatisfaction and depression. In addition, I find that aging is positively correlated with life satisfaction and does not contribute to life dissatisfaction. No correlation between widowhood and quality-of-life was present. This study contributes to the literature examining mental health and aging among institutionalized elders by analyzing the residents of an assisted living facility during a global pandemic. These findings underscore the importance of identifying factors to promote healthy aging.

“Healthy Workplaces for Nurses: A Review of Lateral Violence and Evidence-Based Interventions”

BRIANNA DESHARNAIS, SIMMONS UNIVERSITY | 2022

Most nurses in the United States have experienced workplace bullying, also referred to as lateral violence. We performed a literature review to summarize recent studies on this pervasive yet persistent problem as well as evidence-based solutions. In environments where managers, supervisors, and administrators are unable or unwilling to address lateral violence, a common pattern is that offenders continue to target new employees and cause turmoil for workers and patients in the healthcare setting. This work environment also causes harm and endangers patients. Although workplace bullying is not something that can be fixed with just one solution, there are different initiatives healthcare settings and educational institutions can implement to help prevent and eliminate workplace bullying, such as improving leadership training and interdepartmental communication. Once these initiatives are put into practice, healthcare practices can start saving money, increasing employee satisfaction, retaining workers, and providing better healthcare services for their patients.

PANEL 4 | Patient Advocacy: Shedding Light on Health Disparities and Environmental Risks

2:15pm – 3:45pm

Faculty Discussant: Dr. Jessica Mulligan

“Hunger in the COVID-19 Era”

KATHRYN DONER, PROVIDENCE COLLEGE | 2022

Public health initiatives have been globally challenged and overwhelmed for more than one year. As the COVID-19 pandemic indiscriminately ravages our society, health is negatively affected because campaigns against hunger are expanding. Due to the coronavirus, increasing numbers of individuals are confronting global food system inequalities that directly impact society’s health. While a larger portion of our society is suffering from hunger, those who have previously endured it now bear the brunt of the current health crisis. A person’s class, gender, and race are systematic determinants socially constructed by our society that increase the likelihood of experiencing hunger before and during the pandemic. In the research paper, I will analyze how the COVID-19 pandemic exacerbates hunger for society’s marginalized populations. The adverse health effects that the coronavirus has had within society’s vulnerable communities will be presented. Societal inequalities based upon historical power dynamics continue to disfavor the health of the poor, women, and nonwhite individuals. Therefore, I will conduct a longitudinal study of global food system inequities by examining intersectional identities and society’s present political economy. I argue that the COVID-19 pandemic disproportionately intensified health inequalities, specifically related to hunger, for our society’s disempowered groups.

“Are Clean Cosmetic Products Really Clean?”

JEANNIE PHAN, MCPHS | 2021; JULIA TAN, MCPHS | 2021; KHINE KYAW, MCPHS | 2021; EMILY LAM, MCPHS | 2020

Demand for health-conscious cosmetics has led retailers to increasingly market their products using terms such as “clean” or “non-toxic” i.e. Sephora’s clean seal system. This study aims to compare the toxicity concerns of clean and non-clean products at Sephora by using EWG’s Skin Deep framework. Clean and non-clean products were ranked based on their cancer, allergy/immunotoxicity, developmental/reproductive toxicity, and use-restriction concerns, with lower scores indicating a cleaner product (0-10). Distributions of EWG scores were investigated, stratified by category (fragrance, hair, makeup, skincare). Multivariable linear regression model was applied to evaluate the association between scores and clean seals, adjusting by product category, level of toxicity concerns, etc. 180 clean and 176 non-clean products were sampled (n=356). Compared to non-clean products, clean products yielded a higher percentage of low-hazard ingredients and lower percentage of moderate and high-hazard ingredients. EWG scores are positively correlated for cancer, allergy/immunotoxicity, and use-restriction concern levels. Clean products are associated with a lower score by 0.71. Fragrances are

most hazardous, with a 2.42 increase in score. Sephora’s binary labelling system may not capture all nuances of EWG’s ten-point scoring system and may be insufficient to solely rely on when purchasing cosmetics.

“Insulin Affordability: A New Age of Patient Advocacy Organizations”

GRACE DOLAN, SARAH LAWRENCE COLLEGE | 2021

The exponential increase of the price of insulin vital to the lives of type one diabetics has called into question the roles and goals of institutionalized diabetes Patient Advocacy Organizations (PAOs) such as the Juvenile Diabetes Research Foundation (JDRF), the American Diabetes Association (ADA) and Beyond Type 1 (BT1). While one in four diabetics in the U.S. have had to ration their insulin due to cost, leading to serious and even fatal consequences, the major diabetes PAOs have continued to accept money from the manufacturers of insulin who continue to increase prices. This paper first looks at the scholarship surrounding traditional PAOs and conflicts of interests that can arise within them before looking at the current ties of PAOs to the insulin manufacturers. Then, it examines how the insulin affordability crisis strengthened the Diabetic Online Community (DOC), creating a new structure of advocacy tied to social media, allowing the rise of a modern type of PAO, made by and more accountable to their constituents.

“Cystic Fibrosis in Context: A Look Into Patient Advocacy, Race, Genetics, and Venture Pharmaceuticals”

KAYLA SLOAN, SARAH LAWRENCE COLLEGE | 2023

Despite more people having Sickle Cell Disease (SCD), the Cystic Fibrosis (CF) community receives more private funding, venture capital contributions, and access to participation in political discussions. This divide makes sense given the racial disparities between the mostly black SCD community and the predominately white group of patients with CF. In this paper, I look at how advocacy organizations and scientists build relationships with patients, the impact of race on the history of these advocacy groups, and how conversations about future biotech initiatives differ due to disparities in disposable capital between the two groups. SCD patients have had to combat racism that results in lower access to care, higher levels of medical stigma, and lower access to advocacy involvement, while CF advocates have been able to use their access to monetary capital and time as leverage in their advocacy. Despite these inequities, the SCD and CF communities have both had to deal with the way corporate power steps over patient voices to benefit special interests like venture pharmaceutical companies and stem cell research. To overcome these inequities in advocacy, scientists and politicians need to seek out patients’ experiences and priorities with an understanding of outside social determinants like race.

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**Thank you for attending the 12th Annual Undergraduate Research
Conference on Health & Society hosted by Providence College!**

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