CENTER FOR
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HARVARD MEDICAL SCHOOL

MASTER OF SCIENCE IN BIOETHICS

CAPSTONE SYMPOSIA

MAY 1 & MAY 6, 2025

Keynote Speaker:

Neal Baer, MD, MA, MEd

Physician, Author, TV Writer, Producer, Showrunner

Media, Medicine, and Health: Do Stories Matter?

Neal Baer, MD, MA, MEd, most recently was Executive Producer and Showrunner for the third season of ***Designated Survivor***, starring Kiefer Sutherland. Previously, he was Executive Producer and Showrunner for the hit CBS television series ***Under The Dome***, the CBS medical drama ***A Gifted Man***, as well as the Executive Producer of the hit NBC television series ***Law & Order: Special Victims Unit*** from 2000-2011, where he oversaw all aspects of producing and writing the show, with a budget of $100 million. During his tenure on ***SVU***, among the awards the series won include the Shine Award, People's Choice Award, the Prism Award, Edgar Award, Sentinel for Health Award, and the Media Access Award. Actors on the show won six Emmys and the Golden Globe. The series regularly appeared among the top ten television dramas in national ratings and is now the longest-running prime time US tv drama in history.

Prior to his work on ***SVU***, Dr. Baer was Executive Producer of the NBC series ***ER***. A member of the show's original staff and a writer and producer on the series for seven seasons, he was nominated for five Emmys as a producer. He also received Emmy nominations for Outstanding Writing in A Drama Series for the episodes ***Hell and High Water*** and ***Whose Appy Now?*** For the latter, he also received a Writers' Guild of America nomination. Among the multiple awards the series garnered include the People's Choice Award, the Peabody Award, and an Emmy for best drama series.

Dr. Baer's other television work includes "Warriors," an episode of ***China Beach***, nominated for a Writers' Guild Award for best episodic drama, and the ABC Afterschool Special ***Private Affairs***, which he wrote and directed. The Association of Women in Film and Television selected the program, dealing with sexually transmitted diseases, as the Best Children's Drama of the Year. He wrote ***The Doctor Corps***, a feature film for Twentieth Century Fox; ***Outreach***, a pilot for the WB Network, which he also produced; ***The Edge***, a medical series pilot for CBS; and ***The Beast***, a medical series pilot for NBC, which was redeveloped in 2017 by Twentieth Century Fox Television. Dr. Baer's first novel, ***Kill Switch***, co-written with Jonathan Greene, was published in January 2012, and his second novel, ***Kill Again***, also with Jonathan Greene, was published in 2015. In January 2020, Dr. Baer attended the Sundance Film Festival, where the film he executive produced, ***Welcome to Chechnya***, won a Special Jury Award. The film was screened at the Berlin Film Festival and won the Teddy Award for outstanding film on LGBTQ issues. The documentary premiered on HBO in June 2020 and won the Peabody Award.

Dr. Baer graduated from Harvard Medical School and completed his internship in Pediatrics at Children's Hospital, Los Angeles. He received the Jerry L. Pettis Memorial Scholarship from the American Medical Association as the most outstanding medical student who has contributed to promoting a better understanding of medicine in the media. The American Association for the Advancement of Science selected him as a Mass Media Fellow in 1982.

Dr. Baer's primary medical interests are in adolescent medicine and global health. He has written extensively for teens on health issues for *Scholastic Magazine*, covering such topics as teen pregnancy, AIDS, drug and alcohol abuse, and nutrition. Dr. Baer taught elementary school in Denver, Colorado and also worked as a research associate at USC Medical School, where he focused on drug and alcohol abuse prevention. Dr. Baer co-established the Institute for Photographic Empowerment at USC's Annenberg School of Communications, which links photographic story-telling projects around the world and makes that work available to NGOs and policymakers. He has worked in South Africa and Mozambique, teaching photography to mothers with HIV and AIDS and orphans whose parents died of AIDS so that they can tell the world their own stories. Dr. Baer also produced the documentary short, ***Home Is Where You Find It***, directed by Alcides Soares, a seventeen-year-old Mozambican orphan, which chronicles one young man's search to find a family after his parents have died of AIDS. The film has screened internationally at sixty festivals and has won four awards for best documentary.

Dr. Baer previously was an Adjunct Professor of Community Health at the UCLA Fielding School of Public Health, where he led a Freshman Seminar on Soda Politics. He was a Clinical Professor of Preventive Medicine at the Keck School of Medicine at the University of Southern California and established The Global Media Center for Social Impact at ULCA's Fielding School of Public Health, where he worked on projects using new media to promote global health. Since 2017, Dr. Baer has been a Lecturer in Global Health and Social Medicine at Harvard Medical School, where he created and co-directs the MS degree program in media, medicine, and health, the first graduate degree program of its kind. He also created and co-directs the Certificate Program in Media and Medicine, an online program running since 2019, for health care advocates and practitioners to tell stories to improve health and wellness.

Dr. Baer graduated *magna cum laude* with a BA in Political Science from Colorado College. He holds masters' degrees from Harvard Graduate School of Education and from Harvard Graduate School of Arts and Sciences in Sociology. Before working in television, he spent a year at the American Film Institute as a directing fellow. In 2000, he received an honorary Doctor of Laws degree from Colorado College. In May 2018, he gave the Harvard Medical School commencement speech entitled "What Matters?"

Dr. Baer has served on the boards of many organizations related to health care, including the Venice Family Clinic (the largest free clinic in the U.S.; 2000-2010) and RAND Health (2000-2011). He was a trustee of the Writers Guild of America Health and Pension Fund (2000-2012), was a trustee of the American Film Institute, served as a trustee of Colorado College from 2006-2016. He also served as an elected member to Harvard University's alumni board (2006-2011) and was Co-Chair of the CDC and Gates Foundation-supported, Hollywood, Health and Society. Dr. Baer serves on the Board of Fellows at Harvard Medical School. He also served on the board of the One Archives and is a member of the editorial board of *Perspectives in Biology Medicine*, for which he recently edited a special issue on CRISPR, that won the MLA Award for best special issue aimed at a generalist audience.

Last July, Johns Hopkins University Press published ***The Promise and Peril of CRISPR***, which became a best-seller on Amazon. Dr. Baer edited the book and wrote commentary for it.

Hana Abbasian, BS

The Ethics of Fetal Intervention for Vein of Galen Malformations

Fetal interventions for Vein of Galen malformation (VOGM) present complex ethical challenges involving medical, legal, and moral considerations. VOGM is a rare but severe cerebrovascular condition characterized by abnormal blood vessel formation in the fetal brain, often leading to life-threatening complications. Advancements in fetal medicine have introduced interventions such as VOGM embolization during pregnancy, raising questions about autonomy, consent, fetal rights, and ableism. This project evaluated the ethical challenges of fetal interventions for VOGM and analyzed the ethical frameworks for balancing maternal autonomy and fetal rights. A comprehensive literature review was conducted as well as a legal analysis and policy review to explore the medical, ethical, and legal dimensions of VOGM interventions. Examining the ethical frameworks related to VOGM fetal interventions, included the dual-patient model and the maternal-fetal conflict model, to address issues of consent, autonomy, and the interests of both the pregnant person and the fetus. There are significant differences in the ethical consideration involved in fetal interventions versus postnatal interventions for VOGM. Prenatal interventions require balancing maternal autonomy with fetal risk-benefit assessments, whereas postnatal interventions focus on the infant's rights and quality of life. The acceptable level of risk is vulnerable to ableist biases, often shaped by societal perceptions of disability. The analysis indicated that fetal interventions for VOGM can significantly reduce the risks of severe complications in newborns, but more evidence is required to establish the procedure as a standard of care. A more inclusive and patient-centered approach is needed to improve ethical frameworks for fetal interventions in VOGM. Furthermore, it is important to place greater emphasis on identifying ableism in decision-making. The future direction for this project includes additional empirical research to refine ethical guidelines for fetal interventions.

Mentor: Irina Anselm, MD, Assistant Professor of Neurology, Harvard Medical School.

Hana Abbasian, BS, is a researcher at Harvard Medical School analyzing mental health, bioethics, and inclusive anatomy. She received her BS from the University of Toronto, Canada. Her research explores diversity and accessibility in mental health treatments focusing on clinical trials and digital innovation. She is interested in the ethical implications of emerging medical technologies and disability ethics. She is a recipient of the MBB Grant in collaboration with Harvard Innovation Labs for research on substance use disorder and compulsive behavior management. After graduation, she will attend medical school and continue her work at the intersection of medicine, technology, and ethics to improve patient care.

Harsimar “Sima” Kaur Ahuja, BS

Kidneys Across Species: Autonomy, Consent, and Risk in Xenotransplantation

Xenotransplantation refers to the transplantation, implantation, or infusion of living cells, tissues, or organs from one species into another. Xenotransplantation is viewed as a potential solution to the shortage of human organ donors, though it raises complex ethical, medical, and immunological challenges. The goal of this capstone project explored the ethical issues underpinning xenotransplantation as revealed in narratives obtained from a human recipient (the fourth in the world) of a gene-edited pig kidney, who received the xenotransplant at Massachusetts General Hospital on January 25, 2025. Limited information exists about the psychosocial and ethical challenges these patients face. There are many unexplored ethical challenges with how potential candidates and their families understand and process the unquantifiable risks related to xenotransplantation, including risk of zoonotic infectious disease, restrictions on the patient and their families after transplant, restrictions on the patient’s sexual activity, and bodily autonomy. Through a Harvard Medical School (HMS)-IRB-approved study with a data and technology agreement [HMS IRB24-1746 and DAT25-0048], interviews were conducted to gather the perspectives of the patient, his family, and transplant personnel. This project hypothesized that there are fundamental flaws in the current informed consent process (ICP) for an experimental procedure of this magnitude. As a primary goal, an updated ICP was developed to address the special circumstances of the xenotransplantation framework; along with a risk assessment instrument aimed at predicting the ideal patient for this procedure. The risk-prediction algorithm is based on a shared decision-making model for patients and physicians. This capstone project contributed actionable insights on the ethical issues underpinning xenotransplantation for patients, practitioners, and society through a systems-level re-imagination of how we define consent, risk, equity, and innovation in organ transplantation.

Mentor: Winfred W. Williams, MD, Associate Chief, Division of Nephrology, Massachusetts General Hospital

Harsimar “Sima” Kaur Ahuja, BS, earned a BS in neurology and philosophy from the University of Maryland. As a transplant researcher at the University of Maryland School of Medicine, she focused on improving transplant outcomes and exploring ethical tensions in xenotransplantation. At Harvard Medical School, she has published two first-author papers under the mentorship of Dr. Winfred Williams. This summer, she will intern at Massachusetts General Hospital and continue collaborating with Dr. Williams to develop a risk assessment formula for xenotransplantation clinical trials. In the fall, she will begin medical school at the University of Pittsburgh.

Bianca Alcéna, BS

Observing the Role of Transgenerational Trauma in Mental Health Disparities within Rural Black Populations through an Epigenetic Lens

Scientific research suggests that trauma can result in genetic changes impacting stress responses in descendants, potentially providing a biological explanation for transgenerational trauma. In addition to biological factors impacting mental health outcomes, structural racism perpetuates mental health disparities among Black Americans leading to higher rates of mental health morbidities like anxiety and depression. This capstone project examined the complex relationship between transgenerational trauma, epigenetics, and structural racism, and how they influence mental health disparities among rural Black Americans. Data was collected from epigenetic research findings in conjunction with sociological analyses and clinical research to conceptualize this critical and potentially controversial issue. The research found that accessing mental healthcare resources in rural settings is more complex due to socioeconomic disparities, which disproportionately affect Black Americans. This project was inspired by the racial injustices faced by Black Americans throughout history such as the United States Public Health Service Study of Untreated Syphilis in the Negro Male at Tuskegee. The descendants of collective trauma in rural communities like Tuskegee, AL, desperately need access to mental health services. The research highlights the importance of implementing cultural sensitivity into mental health treatment, developing strategies for rectifying the effects of structural racism on traumatized communities, mental health reform, and fostering trust between healthcare providers and Black Americans. The goal of this project was to emphasize the demand for formal research that validates the lived experiences of marginalized communities and vulnerable populations. Next steps include contributing to the development of efficacious mental health interventions and trauma informed care, as well as encouraging legislators to create policies focused on improving mental health outcomes for rural Black Americans and other underserved communities.

Mentor: Stephen D. Brown, MD, FACR, HEC-C, Department of Radiology, Boston Children's Hospital

Bianca Alcéna, BS, received a BS in psychology from Tuskegee University (TU) and served as Miss Psychology and Sociology and worked as a peer mentor for the psychology department. As a member of the Bioethics Honors Program at TU, she participated in a summer internship with the Centers for Disease Control (CDC) and presented research about the racial implications of the hidden curriculum in medical schools. She is interested in the implications racially induced transgenerational trauma has on health disparities throughout the African diaspora. After completing the MBE, she plans to pursue a career in mental health advocacy.

Lexie Baughman, BS

Ethical Considerations of Disclosure in DNA-Based Population Health Screening: BRCA1/2 Variants as an Illustrative Example

After being screened for variants in genes associated with breast cancer risk (BRCA1/2), a patient must choose whether to disclose their results to family, including their own genetic risk for breast cancer and the possibility that relatives carry the same variant. This decision raises ethical considerations beyond the commonly cited tension between individual autonomy and public health benefits. If genetic screening for BRCA1/2 variants is offered to all adults as a public health initiative, individuals no longer need to choose whether to share their results with relatives but must still decide whether to get screened. For those who participate, public health systems must ensure that the disclosure of screening results is accompanied by accessible diagnostic testing and follow-up care. This capstone project aimed to describe the ethical considerations of familial and public health disclosure in two approaches to DNA-based health screening, specifically, targeted screening of women with a known personal or family history and broad population screening for BRCA1/2 variants. The project involved reviewing select literature on DNA-based health screening, delivery of cascade testing to relatives in various settings, and communication of potential risk. Two informal conversations with experts in public health genomics and clinical genetics provided additional insights. Key themes identified from the literature and discussions included the right to know or not to know, shifting perceptions of genetic risk and moral obligation, equity and accessibility, and the importance of effective communication. Broad population screening for BRCA1/2 variants requires further evaluation of its risks and benefits before implementation. In the meantime, future work involves gauging public perspectives on disclosing and receiving genetic risk information in the public health context, as well as access to genetic services and related barriers.

Mentor: Lynn Bush, PhD, MS, MA, Instructor in Pediatrics and Scientist, Boston Children's Hospital

Lexie Baughman, BS, received a BS in microbiology, immunology, and molecular genetics from the University of California, Los Angeles. As an undergraduate, she researched bioethical issues regarding the return of results from nonclinical laboratories and the implications of in vitro gametogenesis (IVG) as an emerging stem cell technology. Her work as a clinical research coordinator deepened her interest in research ethics and healthcare policy systems. After completing the MBE program, she plans to return to clinical research to integrate bioethics with quality improvement and policy development in the public sector by enhancing accessibility and engagement in the scientific enterprise.

Annagrace Bricker, BS

The Attitudes of Physicians towards Patients with Disabilities: Supporting the Ethical Obligation to Improve Disability Education in Medical School

More than one in four Americans have some type of disability, however, only 40% of physicians report feeling confident in their ability to provide the same quality of care to patients with disabilities compared to those without. Previous studies attribute health inequalities to physical barriers, lack of accessible transportation, or communication difficulties. There is increasing evidence that a physician's stigmatizing or stereotyping attitudes towards patients with disabilities contribute to treatment inequalities, hindering both the quality of care and the likelihood of patients returning for care. The goal of this capstone was to review physicians' attitudes towards patients with disabilities, explore various models used to educate medical students about disabilities, and expose the ethical obligation to improve disability education in medical schools. Conducting a review of the current literature regarding physicians' attitudes towards patients with disabilities was followed by analyzing the results of the implementation of varying education models. The results showed that physicians' attitudes towards patients with disabilities reflect a lack of understanding and experience with the community. Although all education models proved effective in improving attitudes, the most interactive models, like volunteer-based learning, showed the most significant changes. The results of this research support the need for medical schools to participate in active efforts to improve their disability education, leading to better health outcomes and a higher quality of care for this growing population. Examining medical disability education through a consequentialist perspective reveals the ethical responsibility of medical schools to increase the influence of their disability training model while considering the time and resource limitations of each institution. This paradigm provides a foundation in bioethics that supports disability health justice within medical training.

Mentor: Jennifer Kirk, PhD, MS, Postdoctoral Scholar, Pennsylvania State University

Annagrace Bricker, BS, received a BS in neurobiology from the University of Wisconsin, and founded a disability awareness campaign, co-founded a seasonal non-profit that employs teenagers with cognitive disabilities, and volunteered at many adapted sporting events. She received a Hilldale Undergraduate Research Fellowship for her work on third messenger pathways in triple negative breast cancer. Her current research explores physicians' attitudes toward working with patients with disabilities and how disability-focused medical education can better address health disparities within this population. After the MBE program, she will attend medical school and continue her work within the disability community as a physician.

Ezra Chan, BA

Promoting Fairness in Orphan Drug Development by Reforming Incentives for Ultra-Rare Diseases

Orphan drugs are therapeutics that treat diseases affecting small patient populations and are historically the result of targeted incentive structures. Since the passage of the Orphan Drug Act in 1983, the number of drugs approved to treat rare diseases has increased significantly. Recently, innovation has stagnated for ‘ultra-rare’ diseases, raising the need for additional incentives and reforms to adjust drug development priority-setting to include these remaining orphan diseases. It is important to clarify what bioethical analysis tells us about obligations that exist for orphan disease populations and what is necessary to fulfill these obligations. This research included a literature review and ethical analysis investigating the economic, ethical, and legal context of the orphan drug development problem. Meetings with content experts in therapeutic regulation augmented the investigation into distributive justice and fairness to understand the societal obligations towards these special patient populations. Theories of right conduct, such as utilitarianism and prioritarianism, were weighed against one another in the context of a small, vulnerable population that requires significant investment from large populations who do not directly benefit. The analysis concluded that priority-setting to include ultra-rare diseases is necessary for fulfilling distributive justice and achieving fair equality of opportunity in society. However, legislators have demonstrated a distinct reluctance to make policy changes regarding orphan drugs and include them in price negotiations. This capstone proposes a more demanding obligation on legislators to promote innovation than its current commitments suggest. Future policy directions might include formally defining an ‘ultra-rare’ disease designation and limiting exclusivity periods.

Mentor: Werner-Édouard de Saeger van Nattenhaesdonck, PhD, LLM, MTS, Professor of Law at Hasselt University

Ezra Chan, BA, received a BA from the University of Pennsylvania in health and societies and history. As an undergraduate, he served as a managing editor for the Penn Bioethics Journal, an ambassador for the Epilepsy Foundation, and completed research fellowships with the Wolf Humanities Center and Andrea Mitchell Center for the Study of Democracy. He is interested in the ethical dimensions and regulatory obstacles of improving accessibility for orphan drugs and incentivizing innovation for rare diseases. He received the Martin Wolfe Prize at Penn for work in the history of medicine. Following graduation, he plans to attend law school.

Chin-Hsuan "Ken" Chen, MS, MA, MBA

The Influence of Healthcare Organization Lobbying on Health Policy and Health Outcomes

Healthcare lobbying activities are influential in shaping policies that support the goals of healthcare organizations in the U.S. Many lobbying activities happened behind closed doors and lacked consistent disclosure, which limited public awareness of lobbying activities and their potential impact on health policy. As such, this capstone project discussed lobbying activities in the healthcare industry at the national, state, and individual institutional levels to disclose healthcare organizations' lobbying activities and purposes. The study selected the American Hospital Association (AHA) to examine national-level lobbying activity. A review of the AHA's lobbying goals and efforts provided a clear picture of healthcare organizations' representative lobbying purposes and activities. At the state level, this study analyzed three major state-level healthcare associations in New York, California, and Pennsylvania to assess how they utilized lobbying to influence health policies to reach their goals. Finally, the research examined individual health institutions from these three states to assess the alignment of their lobbying efforts with state and national initiatives. The capstone utilized literature reviews and data from OpenSecrets to investigate lobbying activities. The capstone findings included a comparison of the different levels of healthcare organizations' lobbying efforts, purposes, and advocacy that contributed to a more profound comprehension of lobbying activities in healthcare. This research provided insights for policymakers who aim to improve transparency and ethical disclosure of the lobbying process that aligns with the public's best interest. The future plan is to examine the specific and quantifiable outcomes of hospital lobbying activities to further examine the relationship between lobbying and social determinants of health.

Mentor: Dr. Lauren Taylor, PhD, Assistant Professor, Department of Population Health, NYU Grossman School of Medicine

Chin-Hsuan "Ken" Chen, MS, MA, MBA, is a graduate student at Harvard Medical School. He received an MS from Harvard University, an MA from Columbia University, and an MBA from National Tsing Hua University in Taiwan. His research focuses on technology innovations, business, and health policy. His interest in bioethics centers on developing responsible technology innovations and organizational sustainability strategies. After graduation, he plans to work on technology innovations and business strategies in the technology industry and investment field.

Sydney Collins, BS

Do No Harm: Maintaining Patient Trust with Implementation of LLMs and Other Forms of AI in Medicine

The introduction of artificial intelligence (AI) into medicine offers the potential to radically transform healthcare. These technologies can enhance the quality of patient care and decision making by processing vast amounts of health data and assisting in reducing the workload of providers. Ethical concerns accompany the possibilities of AI technology in patient care, such as the impact on patient trust. Medicine recognizes the foundational importance of trust, while simultaneously ensuring that this trust is not falsely placed or fostered. This capstone aimed to better understand patient perceptions of AI in medicine and to identify the key factors shaping trust. The initial focus was an exploration of research literature examining the relationship between bioethics, human-computer interactions, and trust; in addition to meeting with stakeholders involved in AI news and developments. The research illuminated how patients conceptualize AI tools, including the advanced capabilities of large language models (LLMs). The public holds a wide range of attitudes towards emerging forms of AI technology in medicine, and they generally approach LLMs with caution and hesitancy. Acknowledging to do no harm, this capstone examined the possibilities and ethical concerns that arise with implementation of LLMs among current patient perceptions. The project explored ways to exhibit empathy and maintain patient trust throughout the implementation of LLMs, with both program- and systems-level interventions. The findings of this capstone underscore the need for continued research into patient perceptions of LLMs and adopting a patient-centered approach to the implementation process. Future research will culminate in a paper and patient surveys. By actively engaging with patient understanding of LLMs, alongside their concerns, fears, and hopes, healthcare can ensure that these tools augment rather than undermine, trustworthy medical care.

Mentor: Litong Jiang, PhD, Research Fellow, Brigham and Women's Hospital

Sydney Collins, BS, received a BS in rehabilitation psychology from the University of Wisconsin, and assisted in research on disability identity and psychosocial adaptation, public health and social science research, and in developing a haptic-based quantum physics learning program. She is a contributor to the Center for Life Sciences at the Museum of Science's newsletter and is involved in a project focused on redressing the lack of representation in anatomical curriculum. She is particularly interested in the intersections of medicine, science, religion, disability, and identity. After graduation, she plans to work in community health and pursue a doctorate degree.

Anna Dechantsreiter, BA

The Schrödinger's Cat Genome: Should We Look at Incidental Neuropsychiatric Genetic Risks Using Newborn Genome Sequencing

Newborn genetic screening is one of the largest public health efforts since the 1960s, identifying treatable conditions after birth to maximize early intervention and prevent severe health outcomes. Newborn genome sequencing (NbGS) stands to revolutionize these practices. Studies show that NbGS can identify more conditions compared to traditional newborn screening methods, offering robust potential to increase the life quality of newborns. While NbGS gathers information from the entire genome, it evaluates only highly penetrant, actionable medical conditions and masks genetic changes associated with lower penetrance such as neuropsychiatric conditions. This capstone project explored how, like Schrödinger's Cat, not knowing the specific genetic background for masked variants places patients simultaneously at risk and not at risk for neuropsychiatric conditions. The knowledge that the genetic risk information is available through NbGS but remains masked, leads to complicated ethical questions. Are clinicians and labs ethically bound to disclose genetic risks despite the uncertain chances of manifestation? Is there a responsibility for clinicians to disclose identifiable risks, especially when there is limited ability to intervene? If the risk is disclosed, how can clinicians fairly allocate early intervention resources? If an increasing number of newborns are identified at risk, what is the impact on healthcare disparities? To fully understand the challenges presented by NbGS, there was a need for a thorough and comprehensive ethical analysis incorporating principlism, care ethics, literature reviews, and in-depth conversations with experts in the field. Research outcomes highlighted that whether to unmask NbGS data comes down to situational narratives, (e.g. individual care versus public health), and maintaining an overall focus on balancing justice and deconstructing social inequalities.

Mentor: Daniel Moreno De Luca, MD, MSc, CASA Research Chair; Associate Professor and Principal Investigator at Precision Medicine in Autism (PRISMA) Group, University of Alberta; Attending Child, Adolescent, and Adult Psychiatrist, Alberta Health Services

Anna Dechantsreiter, BA, received a BA in philosophy and neuroscience from Boston University. As an undergraduate, she was a member and captain of the university's Division 1 rowing team and a student volunteer at various outreach and homelessness alleviation programs around the city of Boston. She is interested in health equity and healthcare access for underrepresented communities. She completed an honors thesis which explored the implications of stem cell research and therapeutics on Alzheimer's disease at the Brigham and Women's Hospital. After completing the MBE, she plans to attend medical school in Germany.

Emily Durlacher, BA

Ethical Parameters for the Permissibility of Single-Patient Therapeutic Clinical Trials in Solid Tumor Oncology

N-of-1 clinical trials are research protocols that broaden the scientific community's understanding of a disease type or treatment regimen via a single patient. In the treatment of solid tumor oncology, studies often grant access to an experimental drug treatment or drug regimen for patient participants who are unable to enroll in or otherwise decline participation in traditional clinical trials. Historically, N-of-1 trials have received criticism for disproportionate utilization of resources, arguing that single-patient trials do not provide the greatest benefit to the most individuals possible, which is the primary goal of research on human participants. This capstone project aimed to highlight the ethical advantages of single-patient studies despite the concerns in the scientific community. A literature review suggested that the ethical permissibility and parameters of single-patient studies ensure that the patient participant does not meet eligibility criteria for any concurrent, traditionally-designed Phase I-IV trial, that the trials are compliant with a centralized regulatory framework producing aggregate results comparable to other single-patient protocols, that institutional infrastructure and funding sources enforce equitable access to N-of-1 trials, and that adequate informed consent processes minimize therapeutic misconception. It is important for patient participants to thoroughly and accurately understand the research protocol and its distinction from standard clinical care. The four parameters for ethical permissibility set forth in this capstone optimize single-patient protocols by securing the patient's best clinical interest, justice, equity, and research integrity. With these parameters in place, single-patient clinical trials can be rightfully recognized as a useful tool with valuable contributions to the field of medical research.

Mentor: Kimberley Serpico, EdD, CIP, Associate IRB Director, Harvard T.H. Chan School of Public Health

Emily Durlacher, BA, is a research project manager at Dana-Farber Cancer Institute. They graduated with a BA in neuroscience and behavior, and in philosophy, from Mount Holyoke College. Their work focuses on the regulatory conduct of investigator-sponsored, cellular therapy clinical trials in oncology. Their bioethical interest is in trial design ethics, specifically the reconciliation of data and research integrity with ethical commitments to trial participants. During their research career, they have contributed to the literature in developmental neuroscience, sensory neurobiology, and therapeutic clinical trials. Following graduation, they will integrate their interest in ethical trial design with their trial regulation work.

Arika Dwivedi, BS

Me, Myself, and I: Neurotechnology and Its Potential to Alter Individual Personhood and Identity

Personhood is a subject of philosophical debate, encompassing questions of the self and cognitive diversity. In recent years, advances in neurotechnology and biomedical science have introduced new dimensions to this discussion, particularly regarding how interventions such as neurological genetic editing influence cognition and identity. This project explored the intersection of personhood from both philosophical and biopsychological perspectives reflecting on how emerging technologies challenge traditional conceptions of the self. From a philosophical perspective, personhood is often linked to consciousness, rationality, and moral agency. From a biopsychological perspective, personhood is shaped by neural architecture and cognitive functions, which are modified through external interventions. This ability to alter brain chemistry raises critical ethical questions regarding cognitive diversity and the boundaries of selfhood. If a person's fundamental thought processes, emotional responses, and decision-making capacities can be modified, to what extent does their identity remain intact? Furthermore, does the normalization of such interventions risk imposing neurocognitive homogeneity, thus marginalizing neurodivergent individuals? This project conducted a critical review of existing philosophical and biopsychological literature to analyze the ethical implications of these scientific advancements and their resulting consequences. Drawing upon theories of personal identity and neuroethics, it examined whether the capacity to alter cognition fundamentally disrupts one's personhood or merely expands its potential. In essence, this research fostered a nuanced discussion on the extent to which neuro-technological interventions enhance human flourishing before threatening the very essence of what it means to be a person.

Mentor: Hajung Lee PhD, JD, MBE, Associate Professor in Religion, Spirituality and Society, and Bioethics, University of Puget Sound Affiliate, Center for Bioethics, Harvard Medical School

Arika Dwivedi, BS, received a BS in bioengineering and biochemistry from Northeastern University. As an undergraduate, she worked in cancer nanomedicine at the Dana-Farber Cancer Institute and researched genetic editing at Prime Medicine. She has experience in biology studying tissue engineering in Europe and conducting translational materials research in Singapore. Her interest in bioethics stems from these global experiences and is focused on the intersection of medicine and law. She published a surgical case report, graduated as a John Martinson Honors student, and was an inductee to the Huntington 100 Society of Distinction. After completing her MBE, she will attend law school.

Dominick Falo, MPH, BPhil, BA

Building Relationships Through Mutual Interests: A Communication Framework to Strengthen Trust in Academic Medical Centers as Health Information Messengers

Weakening relationships between academic medical centers (AMCs) and the communities they serve impact public trust in health messaging and are a pressing issue in bioethics and public health. To address this challenge, AMCs can develop novel approaches to evolve their health communication strategy and improve public trust. This project presents a novel health messaging framework to strengthen health communication exchange and relationships on a population level. The framework presented offers a methodology to implement key elements and dynamics of an individual physician-patient relationship and recreate that experience into the relationship between health providers and the community on a population level. This strategy originates from evidence, reporting that the public perceives individual nurses and physicians as more trusted sources for delivering health information relative to organizational bodies such as public health institutions, hospitals, and AMCs. A physician addresses the specific demands of a patient based on an interactive, regular dialogue. Over time, this engagement fosters a strong physician-patient relationship built on mutual understanding and shared interest. This capstone designed a framework to guide AMCs in the efforts to enhance effective communication between health providers and community groups through regular dissemination of health information that is highly relevant to that specific demographic. Through the implementation of this framework, communication and relationships between communities and AMCs will improve, increasing public trust in AMCs as sources for delivering health information.

Mentor: Brendan Abel, JD, Healthcare Policy and Advocacy Director, Johnson & Johnson

Dominick Falo, MPH, BPhil, BA, received a BPhil in biological sciences and a BA in philosophy from the University of Pittsburgh Honors College and an MPH from the University of Pittsburgh School of Public Health. He completed a health sciences research fellowship and published a master's thesis examining strategies for effective messaging to improve public trust. His research connects immunology, bioengineering, public health, and ethical disciplines to create novel, vaccine delivery platforms to advance vaccine equity. His bioethical interests focus on building relationships between health providers, health organizations, and the communities. After graduation, he plans to continue strengthening these relationships.

Federico Fernández-Kepka, BA

The Ethical Challenges in Glioblastoma Care

Glioblastoma (GBM) is the most common and aggressive primary brain tumor in the US, with over 10,000 new cases diagnosed annually and a median survival of 12 to 18 months. Standard treatment, which consists of surgery, radiation, and chemotherapy, offers limited survival benefits while imposing significant toxicity. As patients and clinicians navigate this devastating prognosis, ethical and clinical challenges emerge regarding patient autonomy, the communication of limited treatment options, and complexities in accessing experimental therapies. This capstone project examined the dilemmas surrounding the key ethical tensions in GBM care through a narrative literature review and analysis of contemporary bioethics frameworks, including principlism, narrative ethics, and shared decision-making. Findings suggest that alternative therapies alongside standard care provide a more flexible approach to treatment options and help support patient autonomy in the context of terminal illness. Therapeutic misconception remains a critical issue, as patients conflate clinical trial participation with direct treatment rather than experimental research. Additionally, structural and procedural factors in trial design often limit access to novel experimental options, particularly for newly diagnosed patients, raising concerns about justice and equitable treatment opportunities. These challenges are not unique to GBM and likely reflect similar ethical concerns in other severe diseases with poor prognoses. Future work will expand on these issues by incorporating GBM patient perspectives through surveys and interviews to develop more patient-centered support systems and decision-making frameworks.

Mentor: Jonathan M. Marron, MD, MPH, Boston Children's Hospital

Federico Fernández-Kepka, BA, received a BA in biology from Boston College. As an undergraduate, he was a senior member of the Bioethics Society and spent time in a cancer metabolism research lab where he learned the importance of diet and lifestyle as it relates to cancer incidence and progression. His research interests include the ethical dilemmas in cancer care with a focus on the ethics surrounding treatment of glioblastoma and other severe cancers with difficult prognoses. After completing the MBE program, he plans to pursue a doctorate in biology and continue studying the role of diet in cancer treatment.

Meghan Flaherty, BA

The Neuralink Case Study: A Moral Argument for Why Humanity Needs More Federal Oversight of Private Research

When commercial research becomes rushed due to the lack of supervision from the United States Department of Agriculture (USDA), animal welfare declines and researchers experience burnout. Federally funded research is subjected to the USDA's oversight, while privately funded research has fewer checks and balances. Neuralink is a private company that funded research at the University of California, Davis (UC Davis) to test brain-computer interfaces on macaque monkeys. Following their work, Neuralink and UC Davis faced allegations and lawsuits for conducting invasive and harmful experiments on animals. This capstone studied the Neuralink case and conducted a literature review to analyze the correlation between poor animal welfare, moral distress, and burnout. Neuralink demanded an intense work environment, which potentially forced researchers to conduct hurried experiments on the monkeys, leading to the preventable outcomes that harmed the animals. The literature review findings showcase that diminished research on animal welfare negatively affected researchers both in their work and their personal life due to compassion fatigue and burnout. Consequently, the research is compromised from rushed and inattentive behaviors. This capstone recommends that the USDA lower the qualification threshold for animal welfare breaches and expand the legislation to all privately funded research. The heightened regulations will enforce private companies to conduct intentional research, leading to optimal animal welfare, positive impacts to the quality of scientific research, and enhances to medical findings and humanity.

Mentor: Fariba Houman, PhD, Research Compliance Officer, Boston Children's Hospital

Meghan Flaherty, BA, received a BA in philosophy from Virginia Polytechnic Institute and State University. As an undergraduate, she served as president of the school's Ethics Bowl team and worked on the executive board of the Hokie Ambassadors. Her interest in bioethics stems from her desire to improve artificial intelligence regulations used in healthcare. Prior to graduation, she received the Williams Award for best undergraduate philosophy student. After completing the MBE program, she plans to continue exploring the intersection of bioethics and public policy as well as advocating for stricter regulations regarding AI and health insurance.

Thomas Gallup, BSc

A Bioethical Critique of Capitation Payment in the U.S. Healthcare System

The US healthcare system is continuously implementing mechanisms including capitation or lump sum payments to improve care and reduce costs. An emerging critique of this system is that it is more lucrative for providers when patients are simple to treat and less lucrative when patients have complex healthcare needs or a worsening condition. This incentivizes hospitals and clinics to cherry pick healthier patients while passing over those with more intricate needs. This practice is contrary to commonly held principles of distributive justice, which posits that we should prioritize patients with more dire healthcare needs. This project began by presenting three diverse examples of the current practice of capitation payments in US healthcare systems, then presented an analysis of the morally regrettable phenomenon. It then drew comparisons to alternative mechanisms of financial support received by hospitals, such as "disproportionate-share hospitals" to spark conversation about how to rebalance financial incentives with patient care. Outcomes of this project included preparation of a manuscript aimed to initiate a discussion of how to re-align our healthcare system to these prioritarian principles through alternative payment mechanisms.

Mentor: Matthew Baum, MD, PhD, D. PHIL, Brigham and Women's Hospital

Thomas Gallup, BSc, is a respite technician with the Boston Health Care for the Homeless Program. He received his BSc in biology from the California Institute of Technology. He worked at MD Anderson on several nanotechnology-based, novel therapeutics for brain cancer resulting in journal publications in *Nature Nanotechnology* and *Nature Biomedical Engineering.* His bioethics research stems from questions of distributive justice, resource allocation, and priority-setting in healthcare. He is interested in health as a human right and intersectional approaches to medical ethics. After graduation, he will be attending medical school at Washington University School of Medicine in St. Louis.

Mark Hardman, MD, JD

Dual Agency in Military Medicine and the Risk to Clinical Care

Dual agency in military medicine arises from physicians' simultaneous and competing professional obligations to patient care and military command objectives. While uniformed physicians balance these dual loyalties, extreme institutional pressures force them to compromise fundamental ethical principles. In 2022, Navy SEAL candidate Kyle Mullen died from untreated pneumonia after completing "Hell Week" during Basic Underwater Demolition/SEAL (BUD/S) training, illustrating how dual agency can create ethically compromised clinical environments in military medicine. This capstone project examined how institutional pressures, and a medical structure subordinated to command objectives caused physicians to abandon their ethical commitments to patient care. In response to this research, there was a public challenge to these medical failures with an open letter detailing how dual agency compromised medical decision-making and care delivery within Naval Special Warfare (NSW). Advocating for medical reform at NSW through multiple local and national interviews and policy discussions with key decision makers, contributed to increased public awareness and supporting Congressional oversight. Using ethical frameworks such as the doctrine of double effect, it was argued that Seaman Mullen's death was foreseeable, avoidable, and ethically indefensible. Military medicine can simultaneously support warfighting objectives and ethically deliver medical care. Seaman Mullen's tragedy demonstrates why military physicians must appropriately prioritize patient safety amidst institutional pressures and dual agency conflicts. Future work includes developing institutional safeguards to support clinical independence and a culture of moral action among military physicians.

Mentor: Brian Cummings, MD, Pediatric Intensivist, Massachusetts General Hospital, Harvard Medical School

Mark Hardman, MD, JD, is a physician, entrepreneur, and medical-legal consultant with a JD from the University of Virginia, and an MD from the Uniformed Services University. He is a clinical lipid specialist and founded a concierge medical practice dedicated to chronic disease prevention and treatment. At Harvard Business School he is part of a healthcare startup integrating real-time artificial intelligence into clinical decision support to reduce medical errors and improve physician efficiency. His bioethics interests include healthcare transparency, the ethical integration of advanced medical technologies, and physician obligations in malpractice, and after graduation, he will focus on these areas.

Rabya Hasnain, BS

Informed Consent: The Ethics of Patient Disclosure Regarding Medical Student Involvement in Surgical Procedures

During the third year of medical school in the United States, medical students gain direct clinical exposure by rotating through various medical specialties at teaching hospitals and clinics. While most teaching hospitals expect medical students to only observe during their general surgery rotation, attending surgeons often permit and encourage medical students to assist in performing invasive procedures. Active participation in some aspects of surgeries can provide invaluable educational benefits to students, but a detailed account of their involvement is not often communicated to patients preoperatively. This project investigated the dilemma between balancing medical students' academic needs with patient trust and agency. This research explored accounts from stakeholders and relevant ethical paradigms. Narrative literature searches and perspectives from surgeons revealed structural barriers to disclosing students' exact roles to patients, such as establishing a balance between information sharing and preventing patient discomfort as well as the time constraints that prohibit conducting a thorough informed consent process alongside students. This project examined the practical underpinnings of surgeons' outlooks and contrasted them with pertinent moral theories such as virtue ethics and Kantian deontology, clinical ethics principles of patient autonomy, truth-telling, and voluntary decision-making. This analysis demonstrated that ethical frameworks that discourage a patient's perceived lack of consent should be used to resolve this ongoing challenge. Recommendations include taking steps to foster trust and validate patient autonomy, incorporate medical students into the preoperative informed consent process, and optimize surgery clerkships with more organization and emphasis on student surgical training opportunities.

Mentor: Shahla Siddiqui, MBBS, MSc, FCCM, Assistant Professor, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center

Rabya Hasnain, BS, received a BS in biological sciences from the University of Illinois Chicago (UIC). As an undergraduate, she participated in the UIC Medical Scholars program, served as the president and founder of The Film Society, tutored for the UIC Honors College, and researched women's mental health. Her bioethical interests include clinical ethics and feminist bioethics with a focus on emerging issues of technological advancements, patient advocacy, and social justice. After graduating from the MBE program, she will attend medical school while furthering her education and scholarship in bioethics.

Hannah Hayes, BA

Just Images? The Ethical Duty Institutional Art Plays in Promoting Justice

In a world where what we see is often perceived as reality, the visual elements of our environment are crucial to upholding social justice and promoting inclusivity. Art reflects a society's values offering a platform to tell specific stories. It is essential to consider not only the stories included in our visual environments, but also those stories which are excluded. This project established a concrete framework for understanding the value of art as a tool for promoting equity within institutional settings. The project included a literature review, analysis of case studies, and interviews with key contributors within institutional spaces. The project identified the importance of recognition for inequities and biases, the ethical obligations of institutions, and portraitures' undeniable contribution to elicit positive change. The bioethical principle of justice played a central role in this project to expose the need to advocate for the fair inclusion of imagery in institutional settings. As bioethics intersects with cultural values, justice, and health issues, institutional artwork must be recognized as a critical area where institutions can foster inclusive environments. Art is not a passive element but a powerful tool for social change, and by thoughtfully considering the ethical implications of art selection, institutions can contribute to more inclusive, empathetic, and socially just spaces. Art, though often silent, holds a profound responsibility to uphold justice and support a culture of belonging and inclusive leadership. The next steps for this project involve partnering with hospitals in Boston and New York City to quantify the value of their art collections by designing and implementing surveys and establishing partnerships between cultural centers and hospitals.

Mentor: M. William Lensch, PhD; Associate Provost for Research, Harvard University

Hannah Hayes, BA, received a BA in art history from Wheaton College. She has experience working as an art consultant designing art packages for healthcare settings. Her research involves the connection between art and medicine and the ethical concerns surrounding healing within the built environment. Her bioethical research centers on the ethical duty institutional art plays in promoting justice. After the MBE program, she plans to work in life sciences and healthcare consulting.

Molly Hirst, BA

Seeing the Impact: A Visual Survey Model to Inform Ethical NICU Architecture

Research indicates that the physical space of a neonatal intensive care unit (NICU) can support both neonatal health outcomes and the well-being of healthcare professionals (HCP). However, hospital architects remain overly focused on the perspective of the neonate and their family, despite guidance that ethical architecture should prioritize beneficence and justice for everyone in the healthcare facility. This reveals a potential implicit notion that healthcare architecture cannot represent the interests of both parties in tandem. Although researchers recommend collaboration between HCPs and hospital architects, there are few evidence-based suggestions on how to effectively communicate the congruent needs of neonates and HCPs to architects. This capstone project sought to identify a previously underacknowledged overlap in the interests of neonates and HCPs regarding healthcare facility architectural design and to develop a visual survey model that reveals these common interests and communicates them effectively to architects. A literature review identified overlapping interests such as reduced stay, safety, and improved health outcomes, which were then used to develop an accessible and concise visual survey model. This visual survey tool utilized a modified NICU floorplan to elicit information from HCPs about how the physical space supports or inhibits common interests by asking participants to identify supportive elements with green, and inhibiting elements in red. The floorplan survey tool is accompanied by clarificatory questions to help participants understand how the HCPs interests are elicited. This ensures that the visual data is correctly interpreted. The next steps for this project involve analyzing the data within a floorplan heatmap, an informational tool used by architects, which has the potential to inform ethical NICU architecture by integrating the interests of neonates and HCPs simultaneously.

Mentor: Kate Jackson-Meyer, PhD, Postdoctoral Fellow, The Human Flourishing Program, Harvard University

Molly Hirst, BA, received a BA in philosophy from Trinity College Dublin, Ireland, and explored moral philosophy and ethics, completing a dissertation on the responsibility of collectives to act both preventatively and remedially within climate change. Her recent research with Great Ormond Street Hospital Biomedical Research Centre focused on exploring moral injury in a pediatric humanitarian setting. She is interested in the intersection of bioethics and public advocacy, ethical architecture, and the impact of moral injury within healthcare and education. After graduation, she intends to pursue a career working across her interests in bioethics prior to undertaking a doctorate degree.

Gabrielle Hunter, HBSc

Rethinking Bioethics in Pandemic Times: Lessons from the Navajo Nation's Response to COVID-19

Longstanding health inequities exist between Indigenous and non-Indigenous communities in the United States, and these disparities are especially poignant during periods of crisis, such as the COVID-19 pandemic. Morbidity and mortality rates from the virus were particularly high in indigenous communities, including in the Navajo Nation. Despite access to medical care through the federally administered Indian Health Service, many historians and scholars argue that these inequities stem from a history of disenfranchisement and discrimination through government policies that constrained their access to fair equality of opportunity. In response to COVID-19, the Navajo Nation mobilized to address the severity of the pandemic with astonishing efficacy, drawing on the Navajo Nation's ethics of care. This project examined the response mounted by the Navajo Nation and its people, the Diné people. This research drew on insights from experts with direct connections to the Navajo Nation and secondary sources, to investigate how the Diné ethics of care and fundamental values informed and enabled the success of the community in bringing the pandemic under control despite persistent structural and financial barriers to care delivery. The results of his research showed a connection between Diné ethics and some Western bioethical schools of thought, such as care ethics, communitarian ethics, and the view from below, proving the possibility for a more holistic and pluralistic approach to bioethics. This project found that the values and traditions that informed the Diné people's approach are crucial for a bioethical understanding of how to address future health inequities in the Navajo Nation, including reconsidering the nature of government support and how it can better support the Diné people's self-governance in pursuit of health justice.

Mentor: Lindsey Marten Zeve, PhD, Lecturer, Global Health and Social Medicine, Harvard Medical School

Gabrielle Hunter, HBSc, received an Honors BS in mental health studies with a specialization in sociology from the University of Toronto, Canada. As an undergraduate, she co-authored multiple publications on women's health in Africa, Asia, and Indigenous communities. She worked as a teaching assistant for children with disabilities. Her bioethical research interests include addressing healthcare disparities, fair resource allocation, and exploring non-western communitarian and care ethics. After the MBE program, she plans to attend medical school.

Bilal Irfan, BS

Pediatric Medical Evacuations from Areas of Armed Conflict

Humanitarian medical evacuations of children from conflict zones present significant ethical and operational dilemmas exacerbated by their unique vulnerabilities and the complexities of armed conflict. Pediatric evacuees face heightened risks due to physiological fragility, dependence on guardians, and profound psychological trauma from displacement and violence exposure. The aim of this project was to critically examine the ethical tensions inherent in pediatric medical evacuations, using the Gaza conflict as a case study to showcase these tensions. The research explored humanitarian ethical principles (humanity, impartiality, neutrality, and independence), contemporary Western bioethical principles (beneficence, nonmaleficence, autonomy, and justice), and religio-culturally relevant concepts to inform practical operational guidance. Components of this project included: a comprehensive narrative review on medical evacuations and the procedures of operating organizations across areas affected by disaster or war, a case analysis of recent pediatric evacuations from Gaza, and an assessment of the psychosocial and physiological outcomes of evacuated children. Results indicated that current evacuation practices often inadequately address the ethical imperative of minimizing psychosocial harm and ensuring equitable resource allocation, particularly in politically contentious areas. The research examined questions regarding the potential loss of nationality, social structures, and the long-term ramifications of potentially displacing a child. Recommendations to mitigate harms include the implementation of child-centric triage protocols, strengthened mental health support, formalized consent mechanisms, enhanced cross-border coordination, expansion of telehealth solutions, and improved post-evacuation continuity and reunification strategies. The review concluded that aligning evacuation procedures with ethical precepts upholds the dignity, well-being, and long-term psychosocial recovery of pediatric patients in armed conflicts, while recognizing the inherent limitations imposed by political state and non-state actors. There is a need to advocate for protected pediatric evacuation corridors, glocalization in healthcare delivery, and ultimately an end to the conditions that create such displacement scenarios.

Mentor: Basel Tarab, MD, MBE, MHA, Winchester Hospital

Bilal Irfan, BS, is a researcher at Brigham and Women's Hospital and FAJR Scientific. He received a BS in international studies, global health and environment, and Islamic studies from the University of Michigan. His ongoing work spans conflict and health, epidemiology, culturally conscious care, dementia care, infectious disease, orthopedic trauma, and the intersection of policy, innovative technology, and healthcare delivery. He collaborates with Palestinian medical students and physicians in documenting the ongoing healthcare crisis in conflict zones. After graduation, he plans to pursue medical education and expand his collaborations with United Nations agencies in global health governance and health rights.

Flora Jago, BA

The Role of Decision-Making Capacity in Palliative Care Frameworks for Patients with Severe and Enduring Anorexia Nervosa

A vigorous debate has emerged regarding the ethics of offering palliative care to patients with severe and enduring anorexia nervosa (SEAN), rather than further attempts at curative treatment. Alarmingly, 20% of patients with anorexia nervosa remain chronically ill over the course of their lives and meet the clinical definition of SEAN. The proposed frameworks for accessing palliative care require that the patient has decision-making capacity (DMC). This capstone explored a gap in the literature around the DMC of patients with SEAN both to refuse curative treatment and to consent to palliative care. A literature review and informal interviews with professionals highlighted three key issues. First, a state of starvation significantly impacts a patient's cognitive function. Combined with the impact of anorexia nervosa on values and personal identity, it is challenging to identify a truly capacitous decision for a patient in the grips of their disease. Second, the current frameworks often define capacity as the ability to agree with the treatment team's disputable assessment that additional curative treatment is futile. This is instead of considering the patient's DMC to refuse potentially curative treatment, thereby dramatically lowering the DMC threshold. Third, the current frameworks do not allow for a surrogate decision-maker to consent to palliative care for a SEAN patient who lacks DMC, in contrast to any other clinical decision. Overall, the current frameworks are naïve to the clinical realities of patients with SEAN, for whom there is a real possibility of impaired DMC. The next step for this project is to explore ethical alternatives to the current framework of care for those with SEAN to reconcile the needs for the inevitable cases where further curative treatment is intolerable to all involved in a patient's care but the patient themselves shows only partial DMC.

Mentor: Marta Herschkopf, MD, MSt, Attending Physician, Psychiatry, Beth Israel Deaconess Medical Center

Flora Jago, BA, is a healthcare lawyer at Hempsons LLP in London, UK. She received a BA in jurisprudence from the University of Oxford, UK. As a lawyer, she advises clinicians on legal issues arising from the provision of medical treatment, most commonly for children and adults who lack decisional capacity. Since 2022, she has sat on the hospital's clinical ethics committee, often considering cases involving innovative or experimental treatment. She has a particular interest in the ethics of end-of-life decisions. Following graduation, she will resume her legal practice in London.

Aya Jawad, BA

Pain Wars: A New Hope for Post-Operative Pain Management

As of 2023, the United States had the highest number of opioid overdose deaths among developed countries, despite many proposed harm reduction measures like new legislation and non-opioid drug development. While the ongoing opioid crisis in the United States has many causes, this project focused on the moral considerations surrounding post-operative opioid prescriptions. Research included evaluating the ethics of post-operative pain management prescription practices, taking a value-based approach rooted in Beauchamp & Childress's four principles to investigate the issue. This project explored the bioethical tension between maximizing beneficence, through effective pain reduction, and non-maleficence, by reducing side effects, such as addiction for post-operative patients. Conducting a comparative review of post-operative pain management practices among various industrialized countries, and examining identifiable bioethical value tensions to determine why opioid-related deaths in the U.S. remain high compared to other countries informed an analysis of policies, patient satisfaction, and post-operative complication risks. This research indicates that there are non-opioid methods of pain management that offer greater benefit to patients and reduce the risk of further complications and side effects, thereby maximizing both beneficence and non-maleficence. In traditional opioid prescribing, the values of beneficence and non-maleficence often compete with each other. However, this research suggests a more harmonious relationship and that physicians, policy makers, and bioethicists have an ethical duty to reevaluate post-operative pain management prescribing to place greater weight on non-maleficence over beneficence. By doing so, physicians reduce harmful risks, such as addiction, without compromising patient care. The next steps for this project include renewed benefit-risk assessments of non-opioid medications and a stepwise method of pain prescribing.

Mentor: Casey Rojas, JD, MBE, Manager of Federal Relations and Health Equity, Massachusetts Medical Society

Aya Jawad, BA, received a BA with a double major in neuroscience, philosophy, and psychology from Boston University. As an undergraduate, she had the opportunity to submit and present a research abstract on object medicalization at the Society for Social Studies of Science international conference. She is interested in bioethics as it relates to health law and policy, neuroethics, patient care, and novel healthcare technologies. She received the Clinical Associate Award for her exceptional work as an intern at NeuroSync. Upon completing the MBE program, she plans to attend law school.

Shelby Jennett, BS

Bridging the Gap: Promoting Autonomy Through Fertility and Sexual Health Education in Oncology

While oncology treatments have become more effective in increasing survival rates and life expectancy, providers often overlook patients' quality-of-life (QOL) post treatment. Fertility preservation and sexual health are essential to well-being, however, patients are not informed about how treatment affects their childbearing ability and sexual function. Unaddressed infertility and sexual dysfunction lead to distress, relationship strain, and reduced QOL. This project aimed to understand the barriers to initiating fertility preservation and sexual health conversations and to develop ethically informed, accessible patient education for hematologic oncology patients at Massachusetts General Hospital (MGH). A comprehensive literature review, clinical observations at MGH, and expert consultations identified five primary barriers: (1) lack of provider knowledge and training, (2) discomfort discussing sexual health, (3) provider perceptions that fertility and sexual health are low-priority concerns, (4) fear of overwhelming patients with information, and (5) limited time. Male providers were less likely to discuss sexual health, often waiting for patients to initiate. Female patients received less sexual health education compared to male oncology patients, highlighting a gender disparity in oncology care. To improve accessibility across a diverse patient population, the team developed education materials and revised it based on feedback from oncologists, a sexual health nurse practitioner, and the MGH patient education team and translated the material into Portuguese, Vietnamese, and Spanish. Oncology nurses received training on sexual health, and pre- and post-training surveys measured provider comfort with these discussions. Oncology providers have an ethical responsibility to proactively address sexual health and fertility so that patients can make informed decisions about their care. Future directions include evaluating the long-term impact of these education materials on distress levels and QOL, as well as continuing efforts to improve equitable access to this information across patient populations.

Mentor: Kelsey Flynn MBE, BSN, RN, Nursing Director, Massachusetts General Hospital

Shelby Jennett, BS, received a BS in neuroscience with a minor in philosophy from Santa Clara University (SCU). As an undergraduate, she researched the ethics of virtual reality technologies and developed policy recommendations for responsible use to protect against sexual harassment. She did an internship researching ethical challenges in reproductive care, and the barriers minors face in obtaining abortions post-Dobbs. Her bioethical interests include women's reproductive rights, informed consent, and neuroethics. At SCU, she was awarded the Honzel Fellowship in Health Care Ethics through the Markkula Center for Applied Ethics. After completing the MBE program, she will attend medical school.

Suha Quasmi Khan, BS

Accessibility as a Right: Improving Informed Consent and Health Equity in Dentistry for Limited English Proficiency Patients

Between 2023 and 2024, 2.8 million people migrated to the United States, underscoring the growing diversity of patients entering the healthcare system and highlighting the urgent need for dentistry to serve patients beyond English-speaking populations. For patients with limited English proficiency (LEP), communication barriers often make dental care feel inaccessible, undermining patient autonomy and compromising the process of informed consent. Alarmingly, 37.2% of dental students reported receiving no training on working with LEP patients, and 43.7% stated they lacked access to formal interpreter services in their school clinics. Even when interpreters are available, the cost of per-minute professional interpretation deters consistent use. Instead, many providers rely on ad hoc interpreters, often friends or family members of the patient, despite the ethical risks of misinformation, omission, and compromised consent. This capstone aimed to bridge this communication gap and examined how ethical frameworks are applied, or missing, in dental provider conduct with LEP patients. Conducting a literature review to identify the gaps in dental education and to explore communication strategies from general medicine as potential models provided foundational information for this project. Additionally, field observations in inner-city Massachusetts dental clinics serving predominantly LEP patients offered insight into real-world communication practices used with and without interpreters. These observations informed a set of practical recommendations for providers, including incorporating ethics-based training rooted in feminist and care ethics, applying patient-centered frameworks, and integrating community health workers into clinical settings. Improving communication with LEP patients is not only a logistical challenge, but also a moral imperative. Advancing health equity in dentistry begins by recognizing language access as a right, not a privilege.

Mentor: Colleen Farrell, MD, HEC-C, Critical Care Physician, Brigham and Women's Hospital

Suha Quasmi Khan, BS, is an emergency medical technician volunteer. She received a BS in developmental sociology from Cornell University, and served as president of the Africana, Latino, Asian, Native American Intercultural Programming Board and as a project communications assistant for the Empower Communities Charitable Trust NGO dedicated to Uyghur rights advocacy. Her current research focuses on investigating the relationship between masculinity/masculine gender norms and suicide. Within bioethics, she is interested in improving accessibility and autonomy for immigrant patients when it comes to decisions for treatment. After completing the MBE, she will attend dental school and practice community-centered dentistry.

Jack Kloster, BS, BA

Faith, Autonomy, and End-of-Life Conversations: Navigating Catholic Ethical Boundaries in Medical Aid in Dying

Medical Aid in Dying (MAID) is an increasingly prevalent topic in public discourse across the United States. Ten states and the District of Columbia have legalized MAID, and more legislation efforts are underway. Massachusetts recently introduced the End of Life Option Act to allow competent, terminally ill patients to access MAID as a legal, viable end-of-life choice. However, significant opposition persists within religious institutions. The Catholic Church believes in the sanctity of life and opposes most interventions that hasten death. As a result, practices such as MAID are often viewed as incompatible with Catholic doctrine. Religious and ethical boundaries create moral distress for both providers and patients as they navigate end-of-life conversations and consider options that align with religious values. This project aimed to reconcile the use of MAIDs within the framework of religious boundaries, particularly within the Catholic Church, to establish permissible and ethically justifiable end-of-life options for terminally ill patients who are bound by religious views. Research included a review of scholarly literature, a comparative analysis of end-of-life practices sanctioned by the Catholic Church, and an ethical evaluation through the lens of Catholic Social Teaching. The analysis was further informed by engaging in conversations with key stakeholders including Jesuit priests, lobbyists, and clinical ethicists to better understand the theological, ethical, and legal complexities involved in end-of-life decisions. The goal was not to challenge doctrine, but to identify space for nuanced dialogue, explore how Catholic perspectives shape conversations related to MAID, and consider ways to accommodate these views while honoring both faith-based values and patient autonomy. As MAID support gains more traction from a secular perspective, fostering open dialogue and integrating religiously conscious communication tools is essential to upholding dignity in future end-of-life healthcare.

Mentor: Miranda Blodgett, MA Bioethics, HEC-C, Clinical Ethicist, Beth Israel Deaconess Medical Center

Jack Kloster, BS, BA, received a BS in biology and a BA in philosophy from Boston College, and was awarded the Matthew Copithorne Scholarship upon graduation. As an undergraduate, he researched sustainable methods for lab-grown meat as well as stem cell therapeutics for cystic fibrosis. His senior thesis explored personalist bioethics, focusing on the opioid epidemic and healthcare disparities among the homelessness in Boston. He is passionate about improving healthcare accessibility for vulnerable populations, especially in patient-provider relationships, informed consent, and the ethical complexities of end-of-life care. After completing the MBE program, he plans to attend medical school.

Vilmante Kodyte, BA

The Ethics of Probability: Ethical and Practical Considerations for Counseling Patients on Preimplantation Genetic Testing

Infertility treatments, like in vitro fertilization (IVF), empower patients to better control their procreative futures to pursue biologically related parenthood. Advances in genetic testing stand to expand this locus of control. Preimplantation genetic testing for polygenic conditions (PGT-P) assesses embryos based on their likelihood of developing conditions (e.g., schizophrenia) or traits (e.g., athleticism) of diverse genetic etiology. While public support for PGT-P is overwhelming, US regulation of infertility diagnostics is sparse. Medical societies avoid endorsing PGT-P, citing unfounded utility for patients. Nonetheless, companies market PGT-P as a means of transforming "chance" into "choice," positioning it as a tool that enhances reproductive autonomy by enabling informed embryo selection. This capstone aims to showcase the ethical and practical challenges that arise from counseling patients on PGT-P, with special attention to the principles of reproductive autonomy, non-maleficence, and justice. After conducting literature review encompassing over 50 articles, three central concerns for clinicians and patients were identified: (1) the predictive versus diagnostic utility of PGT-P, (2) the reproductive anxiety about conforming to norms of "good parenting," and (3) downstream justice concerns about reproductive stratification and stigmatization. This project exposes the need for recommendations to improve information provision and mitigate the risks of exaggerated or premature clinical applications of PGT-P. These include anticipating and guiding patients through feelings of reproductive anxiety associated with additional testing, instituting clear and effective approaches for communicating chances for disease onset, and establishing a moratorium on clinical applications of PGT for non-medical conditions. Opportunities to collaborate with industry should include expanding diverse participant recruitment for genome-wide association studies and the methodological underpinning of PGT-P development. Future work will empirically investigate how patients' use of PGT-P impacts their reproductive expectations and experiences.

Mentor: Jess Gordon, MBE, Director of Clinical Strategy at Accolade, Inc.

Vilmante Kodyte, BA, received a BA in biochemistry and molecular biology from Reed College. She has a special interest in reproductive medicine and ethics and has published on the potential of assisted reproductive technologies for infertile couples. She is invested in the ethical implications of pre-implantation genetic testing, striving to ensure accessibility while upholding patient autonomy and safety. After graduating, she aims to become a physician's assistant with a specialization in obstetrics and gynecology, while continuing to research and publish in reproductive ethics.

Wyatt Le Penske, BS

Sowing Resistance: An Ethical Exploration of Stakeholder Accountability for Antibiotic Consumption in Animal Feeding Operations

Antibiotics are frequently administered for non-therapeutic purposes in industrial farming and animal husbandry operations. Commonly used for growth promotion and disease prevention, these pharmaceuticals reduce the time needed for animals to reach market weight and enable greater confinement, thereby improving production expediency. However, animals routinely exposed to antibiotics, often via feed and drinking water, serve as breeding grounds for resistant bacteria contributing to the development of antimicrobial resistance (AMR) and the release of pathogens and unmetabolized antibiotics into the environment. These practices pose severe global public health risks as AMR jeopardizes the effectiveness of antibiotics, potentially rendering once-treatable infections unmanageable and contributing to prolonged illness, higher healthcare costs, and increased mortality rates. This capstone project developed a pluralistic bioethical perspective through literature review and evaluated frameworks such as utilitarianism, deontology, and environmental bioethics for their relevance to imprudent antibiotic use within animal feeding operations (AFOs). Building on this foundation, the developed perspective assessed the culpability and responsibility of key stakeholders—including farmers, governments, the pharmaceutical industry, and consumers—based on factors such as direct involvement, motives, duties, and influence over decision-making. The outcomes of this analysis established the degree of liability each stakeholder bears, enabling public health experts and policymakers to craft targeted and impactful policies at these entities. The specific policies remain undetermined, and more applied work beyond ethics—such as implementation and operational planning—is needed to develop actionable plans to regulate antimicrobial use in AFOs. The most effective strategies remain obscured without clarity on stakeholder accountability. As AMR continues to intensify, addressing these challenges through ethically informed and actionable strategies remains essential to achieving meaningful change.

Mentor: Jonah Rubin, MD, Assistant Professor of Medicine, Massachusetts General Hospital

Wyatt Le Penske, BS, received a BS in microbiology from the University of California, Santa Barbara, and was a research assistant on projects monitoring the efficacy of blood glucose monitors and analyzing methodologies for pre-operative prostate volume analysis; and he mentored first- and second-year biology students. His interest in bioethics stems from the growing threat of antimicrobial resistance and the urgency of strengthening regulatory and surveillance frameworks. During his interim year between completing the MBE and starting medical school, he plans to expand his knowledge of infectious disease through hospital clinic volunteering, research, and contributing to policy development in bioethics.

Jonathan McCabe, BS, BA

Brain-Based Visual Prosthetics: Researchers' Perspectives on Non-therapeutic Applications of Brain-Computer Interface Technology

Brain-based visual prostheses (BVPs) aim to restore a functional analogue of sight for people with acquired blindness. These devices integrate visual stimuli into the peripheral and central nervous system using camera-like apparatuses. Despite rapid technology developments in the past decade, there is a deficit of published information on the neuroethical and social implications of BVP research including post-trial access, definitions of success, and treatment versus enhancement. Researchers' perspectives on BVP technology plays an important role in the normative reflection on this emerging technology due to the situated knowledge they supply to ethical analysis. Researchers have provided valuable information for normative reflection on other forms of brain-computer interface, but the gap in the literature for BVPs is only beginning to be filled. This capstone included interviews of current and former BVP researchers on a range of topics, including those listed above. Results of these interviews (n=20) were analyzed using thematic content analysis with a focus on potential non-therapeutic applications of BVPs. Researchers provided input on the awareness of efforts to develop these technologies for non-therapeutic applications, the feasibility of doing so, and the perceived acceptability of such uses. The research encompassed concerns related to agency, cognitive and behavioral control, dual use, fairness, hacking, harmful experiences, identity, mental state decoding, and privacy. Four researchers articulated a normative concept termed "therapeutic priority," emphasizing the importance of focusing on medical applications of BVPs as opposed to non-medical ones. These results provide an important springboard for normative reflection on neurotechnologies as scientific and financial interest in their development and deployment increases rapidly in the AI era.

Mentor: Peter Zuk, PhD, Assistant Professor of Philosophy, University of Texas at Arlington

Jonathan McCabe, BS, BA, received a BS in biomedical sciences and a BA in philosophy from the Frederik Meijer Honors College at Grand Valley State University (GVSU), and was the top graduating senior in the Biomedical Sciences Department and Honors College. At GVSU, he interned with the Office of Research Compliance and Integrity and the Corewell Hospital Ethics Committee. He was advocacy lead for the GVSU Partners in Health Engage team and the director of the Young PI's Summer Scholar Program. His bioethical interests include research ethics and treatment versus enhancement. Following graduation, he will attend the University of Michigan's medical school.

Christian Medina, BS, BA

Beyond Cognition: A New Ethical Framework Addressing Personhood for Individuals with Intellectual and Developmental Disabilities

Cognitive ability and rational autonomy are central to the current cultural understanding of personhood. Contemporary utilitarian philosophers, such as Peter Singer, asserted that these traits are fundamental criteria for defining moral worth. This understanding of personhood often excludes people with intellectual and developmental disabilities (IDD) in medical spaces such as in medical decision-making. In the context of scarce resource allocation, many people with IDD do not fit within utilitarian calculations, such as in the Quality-Adjusted Life Years (QALY) system. The QALY framework assigns a lower value to lives perceived to have lower cognitive function, reinforcing systemic healthcare discrimination against individuals with IDD by presuming they have a poor quality of life. This project analyzed current bioethical principles and frameworks (e.g., autonomy and utilitarianism) through a narrative literature review. It proposed new approaches to examining research on narrative ethics, care ethics, existentialist philosophy, and disability studies with the goal of expanding the parameters of personhood to include individuals with IDD. The findings of the review showed that to create a foundation of inclusivity for individuals with IDD, there needs to be a shift in focus (within bioethics) from cognitive ability to lived experience, interdependence, relationships, and dignity. This shift pushes for supported decision-making to take precedence over competency-based engagement. The literature review proposed an ethical framework for reshaping bioethics discourse and policy that recognizes the moral worth of patients of all figures and abilities, despite neuro and physical divergence. The findings created potential avenues to apply this framework to policy recommendations for guardianship laws, current crisis triage policies, and education in disability-medical ethics. It exemplified the need to rethink bioethical paradigms to align with contemporary understandings of neurodiversity and human dignity.

Mentor: Frank Chessa, PhD, HEC-C, Director of Clinical Ethics, MaineHealth Maine Medical Center, Assistant Professor of Medicine, Tufts University

Christian Medina, BS, BA, is a medical interpreter and medical assistant at Jenks Park Pediatrics. He earned a BS in neuroscience and mathematics from Brown University and a BA in public and community health from Providence College. He advocates at the Rhode Island State House serving on panels to promote multilingual accessibility in the community and to protect the rights of undocumented children in schools. His bioethical interests focus on the ethical implications of parental vaccine refusal for children and the parameters of personhood in relation to individuals with intellectual and developmental disabilities. After obtaining his MBE, he will attend medical school.

Olivia Merckx, LLB, LLM

Evaluating the Quality and Accessibility of Information for Women Considering Elective Egg Freezing

Elective egg freezing has gained increasing popularity among women seeking to delay motherhood due to various personal, professional, and societal pressures. However, many remain unaware of the procedure's uncertainties. Given the sensitive nature of reproductive decisions, it is crucial to inform patients who are interested in elective egg freezing adequately. This capstone project evaluated the quality and accessibility of the current information available to women considering elective egg freezing, specifically the accuracy and comprehensiveness of the information regarding the risks and benefits. The research included a review of existing literature, including studies on the medical, emotional, financial, and societal implications of the procedure. Key findings revealed that fertility clinics and informational events often downplay the procedure's risks, leading to a false sense of security and misconceptions about egg freezing as fertility insurance, which can result in misguided decision-making. In addition to the gaps in informed consent practices, findings indicated a broader societal phenomenon centered around a discrepancy in partners. Many women expressed feeling personally inadequate due to being unable to create or sustain a meaningful relationship with a man, feeling responsible and internalizing blame, and proceeding with this procedure as a result. Despite some progress in the availability of information, research findings underscored the persistent misconception that egg freezing serves as a form of fertility insurance, oversimplifying the procedure. This project advocates for enhanced transparency in both medical counseling and public messaging to empower women to make well-informed reproductive choices. The outcome of the work suggests that more transparent communication, improved informed consent, and enhanced patient education are necessary to develop more standardized, patient-centered guidelines for counseling and information dissemination. Future work will focus on the underlying motivational forces of why women want to freeze their eggs.

Mentor: Anne Galvin, BSc, PGD Law, PGD Legal Practice, Fellow in Bioethics

Olivia Merckx, LLB, LLM, is an MBE student at Harvard Medical School. She received both her LLB and LLM from the Vrije Universiteit in Amsterdam (VU Amsterdam). Her previous work has focused on legal developments within the field of technology and artificial intelligence. Her bioethics research is centered around reproductive rights, specifically the ethical implications of elective egg freezing and using CRISPR-CAS9 to create designer babies. She graduated with honors from VU Amsterdam. Following graduation, she plans to explore new professional opportunities within the healthcare industry that integrate her legal, technical, and bioethical expertise.

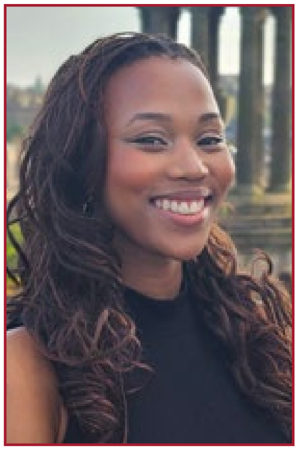
Tsholofelo Motswagole, BSc

Dr. WhatsApp: Bioethical Implications of Health Misinformation in the Global South

The rise of accessible online health information once promised to empower individuals with knowledge, promoting informed decision-making and a shift away from clinician-dominated care. For many, it opened a more equitable pathway to exercising the "right to health." Yet, with over 212 million DVDs worth of data produced globally each day, distinguishing credible counsel from misleading content has become increasingly difficult. This capstone explored the ethical implications of health misinformation on vulnerable populations in South Asia and Sub-Saharan Africa—communities with limited access to medical professionals and low media literacy. The project examined the moral responsibilities of social media platforms and public regulatory agencies in mitigating the spread of misinformation. Through a comprehensive literature review and consultation with a global health misinformation expert, the project identified key trends in how misinformation circulates on WhatsApp, a widely used platform in these regions. Early findings revealed that users who share false information often do so unintentionally, but the resulting exposure leads to measurable negative behavioral outcomes. There is a strong correlation between mistrust in public health institutions and increased belief in conspiracy theories, highlighting the need for accountability among media conglomerates and tech platforms. A significant gap in the literature exists regarding these high-risk populations, despite comprising the largest base of WhatsApp users globally. Next steps for this project include interviews with medical professionals and digital health advocates to further inform the development of a pilot intervention tool tailored to WhatsApp users. In addition, future directions involve exploring the psychological toll of navigating health information online, individual autonomy within social networks, and the need for "truth literacy" campaigns. This work calls on media stakeholders to prioritize transparency and urges platforms to build safeguards that protect public health through ethical information sharing.

Mentor: J. Gakii Masunga, MBE, MS, Research Fellow at Harvard Medical School, Department of Global Health and Social Medicine

Tsholofelo Motswagole, BSc, is a former data-analyst at Public Health Scotland. She received a BSc in biomedical science from the University of Edinburgh. She investigated potential pathologies in the development of Huntington's positive neurons, and provided analytical support to the Scottish National Audit Programme team. Her bioethical interests include the use of advances in genetic research, information and data governance, intersectionality in global health, health care access, and health law and policy. She is a recipient of Botswana's Top Achiever Award which recognizes outstanding academic performance country wide. After graduation, will incorporate bioethics into her research.



Habeebah Muhammad-Kamal

Decoding the Human Experience: Feasibility and Ethical Considerations of Using Artificial Intelligence to Augment Qualitative Research

Qualitative research in medicine is essential for understanding patient experiences that quantitative data alone cannot capture. Analyzing qualitative data, especially large data sets, can be complex and time-consuming. Artificial intelligence (AI), specifically large language models (LLMs) like ChatGPT, are helpful in augmenting qualitative analysis. However, studies of their feasibility remain limited, particularly in coding for critical human elements, such as empathy. This capstone explored whether ChatGPT can inform future research and clinical ethics by addressing the nuanced aspects of qualitative research, including the interpretation of human sentiment, values, and the underlying tones of parents' perspectives. In doing so, it offers valuable recommendations to healthcare professionals on how best to navigate sensitive conversations. A literature review alongside an empirical analysis using refined prompts within Boston Children's Hospital's secure, compliant LLM was conducted. A previously published qualitative dataset on counseling patients at extreme prematurity used qualitative methods to generate codes and themes. Six researchers independently compared codes and themes generated through traditional thematic analysis versus ChatGPT to determine agreement. ChatGPT-generated codes and themes largely aligned with traditional thematic analysis, though some differences were noted. ChatGPT was adept at reproducing descriptive themes but missed subtle interpretive nuances that human analyses identified. This study highlighted the researchers' responsibility as the primary agents of interpretation. In gathering empirical evidence, LLMs raised ethical concerns related to researcher conduct, potential human and AI bias, loss of analytical skills, and overreliance on models that lack transparency. As a result, researchers should exercise caution when using LLMs to replace human analysis. Instead, LLM-driven qualitative analysis requires researchers to have a critical perspective, with AI serving as a supplementary research team member.

Mentor: Christy L. Cummings, MD, HEC-C, Neonatologist, Boston Children's Hospital, Dept. of Pediatrics, Division of Newborn Medicine, Associate Professor of Pediatrics, HMS

Habeebah Muhammad-Kamal is a medical student (MBBS) at Hull York Medical School, UK. Currently she is exploring ethical considerations of artificial intelligence in qualitative research, clinical decision-making, and counselling focusing on informed consent, data protection, transparency, and equity in the clinical application of machine-learning algorithms. As a lay partner at London' Imperial College Healthcare NHS Trust, she advocates for patient-centered initiatives and is committed to improving healthcare for underserved communities. Her interests include pediatrics ethics, reproductive ethics, and the integration of virtue ethics into medical education. After graduation, she will pursue a career in medical education, healthcare innovation, and policy.

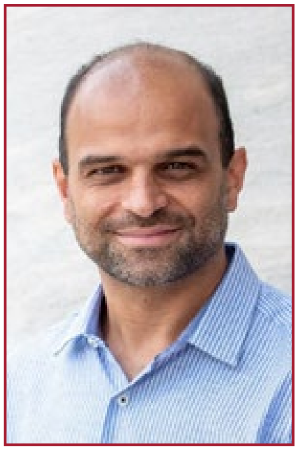
Eduardo Seraidarian Najjar, MD

Ethical Considerations and the Conflict between Autonomy and Beneficence in the Treatment of Substance Use Disorders

Substance use disorders (SUD) remain a substantial public health concern in many countries. It is a complex, chronic, and relapsing syndrome with significant effects on individuals and society. The neurobiological outcomes caused by severe SUD are well established. However, the psychosocial consequences are the ones that stand out most including increased risk of family disintegration, marginalization, urban violence, crime, and transmission of infectious diseases. The aim of this project, via literature review and informational interviews with specialists, examined the ethical considerations regarding the possible approaches to treat severe SUD, the tensions that arise between respect for autonomy and beneficence, and the possible ways forward. From a bioethical perspective, the treatment of SUD has changed over the last decades from an approach based on beneficence to an approach grounded in respect for autonomy, shifting the locus of decision-making from physicians to patients. The understanding has shifted from a law and crime perspective to a healthcare perspective. Framing effective treatments and public policies is a challenging task, especially for acute situations with potential conflicts between respecting the patient's self-determination and acting in their best interest. Most effective treatments seem to require a balance of the two principles. Cultural, political, and historical differences dictate variable understandings of autonomy and beneficence across countries. It is important to consider alternative bioethical approaches as possible frameworks to conciliate the respect for autonomy and beneficence-driven care, such as care ethics, feminist ethics, and relational autonomy. These multiple bioethical lenses offer important insights into this complex phenomenon, as well as additional perspectives to help design new strategies for treatment and public health recommendations.

Mentor: Tony V Pham, MD, MScGH, Massachusetts General Hospital, Harvard Medical School

Eduardo Seraidarian Najjar, MD, is a psychiatrist at Albert Einstein Hospital in São Paulo, Brazil. He received an MD from the Federal University of Sao Paulo, completed a psychiatry residency, and received an MBA in healthcare management from Albert Einstein University. He is an assistant professor of psychiatry, and his clinical work is focused on personality and mood disorders. His interest in bioethics comes from reflections about clinical decisions, the intersection between medicine and philosophy, narrative ethics, and public health policy. After graduation, he plans to combine psychiatry and bioethics to improve education, medical decisions, and public healthcare.



Avani Nooka, BA

The Ethics of Seeing and Not Seeing: Justice, Epistemic Asymmetry, and Diagnostic Risk in Rural Telepsychiatry

Policymakers and clinicians increasingly promote telepsychiatry as a solution to the severe shortage of mental health services in rural areas. These proposals reflect well-intentioned efforts to reduce geographic barriers to care, which is a major contributor to mental health disparities and injustice in the United States. However, this capstone argues that telepsychiatry risks overlooking two ethical challenges that limit its capacity to advance health justice effectively. First, structural inequalities in broadband and digital access threaten to exclude the most underserved communities from the essential benefits of telepsychiatry, reinforcing the disparities these policies aim to reduce. Second, the digitally mediated nature of telepsychiatry disrupts the epistemic foundations of psychiatric diagnosis, which depends on in-person observations of effect, posture, and other nonverbal cues. This structural information gap is termed epistemic asymmetry, and it raises the risk of misdiagnosis in high-stakes encounters, such as suicide risk assessments and evaluations for involuntary commitment. The project involved a narrative review of empirical studies and bioethical literature, analyzing how epistemic asymmetry and digital exclusion interact to create a two-tiered system of psychiatric care. This capstone identified the need for key policy and clinical reforms to prevent the institutionalization of lower-quality care for rural populations by drawing on Norman Daniels' theory of health justice and his non-ideal theory of institutional design. Future recommendations include a hybrid standard of care for high-risk evaluations, procedural justice protocols, equity-focused workforce investments, and disaggregated data transparency requirements. The aim of this project is not to oppose the expansion of telepsychiatry, but to warn policymakers against mistaking access for equity and further embedding injustice into the architecture of care. The actual test of telepsychiatry is whether it can see and serve those most often unseen.

Mentor: Kelsey N. Berry, PhD, Lecturer, Department of Global Health and Social Medicine, Center for Bioethics, Harvard Medical School

Avani Nooka, BA, received a BA in molecular biology, global health, and health policy from Princeton University, and served as the co-editor-in-chief of the Princeton Public Health Review, directed the Mental and Emotional Health Committee, and was a nationally ranked debater. Her senior thesis focused on characterizing Apolipoprotein E as a therapeutic target for traumatic brain injuries. Currently, her research focuses on the neuroethical considerations of telehealth policies to improve cognitive and mental healthcare access in rural communities. Following graduation, she will pursue a medical degree and continue advocating for mental health equity in underserved areas of the United States.

Cinderella Temitope Ochu, PhD, MA, BA

Where Hope Meets Science: Reproductive Medicine, Bioethics, and the Journey of In Vitro Fertilization (IVF) in Nigeria

Infertility is a significant yet overlooked reproductive health issue in Nigeria, where cultural and societal norms equate womanhood with motherhood. Despite its profound psychosocial and economic impact on individuals and society, infertility treatment, including in-vitro fertilization (IVF), remains largely inaccessible due to high costs, lack of government prioritization, and inadequate health insurance coverage. This capstone examined the systemic inequities in IVF accessibility and affordability in Nigeria through a reproductive and distributive justice lens, advocating for equitable allocation of healthcare resources and the recognition of parenthood as a fundamental human right. Literature review and informational interviews with stakeholders in Nigeria – physicians, bioethicists, policymakers, and public health consultants — identified key barriers: (1) a utilitarian approach that allocates available funding to reproductive health issues affecting the majority including contraception and the management of sexually transmitted diseases (STDs), (2) the absence of insurance coverage for infertility treatments, (3) the concentration of IVF clinics in urban, privately owned facilities, and (4) the cultural framing of infertility as a woman's burden rather than a societal concern. These findings raised ethical concerns about the moral justification of policies that focus on certain healthcare issues over others, the impact of restricting access to ART, and the reinforcement of gendered inequalities through the cultural positioning of infertility. Next, by explicitly situating infertility within the bioethics discourse, this capstone outlined ethical interventions that address the identified issues of infertility as a public health and human rights concern. This capstone project seeks to inform policy changes that prioritize infertility treatments within reproductive health programs, budget planning, and resource allocation.

Mentor: Barbara Wilkinson, MD, Division of General Obstetrics and Gynecology Specialists, Brigham and Women's Hospital

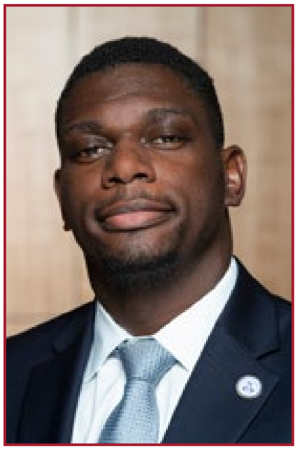
Cinderella Temitope Ochu, PhD, MA, BA, is the founder of Eureka Health Advocacy Network, an NGO focused on advancing reproductive health through research, education, and advocacy. She received a BA in international studies and diplomacy, an MA in history from the University of Benin, Nigeria, and a PhD in history from the University of Johannesburg (UJ), South Africa. Her doctoral research (and publications) focused on reproductive technologies. She is interested in exploring the ethical issues in reproductive medicine and the connection between bioethics and history. After completing the MBE program, she plans to pursue a career in academia and research.

Marc-Kendy Paul, BS

The Ethical Implications and Variations in Catatonia Treatment: A Survey of Practicing Physicians

Catatonia is a severe neuropsychiatric syndrome with an evolving nosology, officially categorized as distinct in 2022. Despite its prevalence, especially among Afro-Caribbean men, treatment remains inconsistent and under-examined. Current standards rely on benzodiazepines and, when those fail, electroconvulsive therapy (ECT). Both treatments raise ethical concerns. Benzodiazepines can cause dependency and worsen symptoms, while ECT remains stigmatized and is often inaccessible outside of major urban centers. This capstone investigated the clinical variations and ethical challenges in Catatonia care, a survey was conducted among physicians who currently treat or have treated Catatonia. The survey examined treatment approaches across levels of medical training and explored access to ECT, practitioner comfort, informed consent, autonomy, and perceived ethical tensions. Analysis revealed significant differences in clinical decision-making and limited consensus on best practices. These findings highlight a broader need for targeted research, clinician education, and health policy reform. By centering physician experience, this capstone sheds light on the ethical and practical gaps in Catatonia care and supports advocacy for more consistent, informed, and equitable treatment standards.

Mentor: Margarett Budd, PhD, MPH, ABPP, HEC-C, Assistant Professor in Psychiatry, Harvard Medical School



Marc-Kendy Paul, BS, is a community engagement director for a health advocacy non-profit program, We Got Us. He earned a BS in liberal science studies and a minor in Spanish from Worcester State University. Since completing his undergraduate studies, he has immersed himself in diverse research endeavors spanning from infectious diseases to radiology. His bioethical interest lies in serving underserved populations through community engagement and research. His capstone project is dedicated to assessing the treatment ethics of physicians caring for Catatonia patients by performing survey analysis. After graduation, he plans to attend medical school.

Dilmi Ranpatabendi, MS, BS

Language Barriers and Equity in Heart and Lung Transplant Outcomes: A Retrospective Cohort Study at Massachusetts General Hospital

Language barriers in healthcare are well-documented contributors to disparities in patient outcomes, yet their impact on heart and lung transplant recipients remains insufficiently explored. Patients with limited English proficiency (LEP) face significant challenges in accessing, understanding, and navigating transplant care, potentially affecting clinical outcomes. A preliminary literature review revealed a notable gap in research examining the influence of language barriers on transplant success, particularly in high-resource settings with established language access services. This retrospective cohort study evaluated whether transplant outcomes differed between LEP and English-proficient patients at Massachusetts General Hospital, a major academic transplant center with comprehensive interpreter services. The project included chart reviews for all heart transplant recipients from 2015–2024 and bilateral lung transplant recipients from 2016–2023, totaling 743 patients. Of these, 60 patients were identified as having LEP, with 46 requiring interpreter support. A preliminary review revealed that 8% of transplant recipients were LEP, despite serving a linguistically diverse population. Notably, 80% of heart transplant recipients were white, raising essential questions about broader systemic inequities in access to transplant services for LEP individuals. Statistical analyses assessed key clinical outcomes including mortality, readmission rates, post-transplant survival, and graft function to determine if disparities existed between LEP and non-LEP patients. Findings from this study evaluated the effectiveness of existing language access services and informed future institutional strategies to improve equity in transplant care. Additionally, the results provided a guide for improvements in communication, post-transplant care coordination, and interpreter utilization. The goal of future research is to expand this inquiry to other organ transplant populations, such as kidney and liver recipients, where language barriers may further impact post-operative adherence and long-term outcomes.

Mentor: Rachel Glick, MD, MBE, Clinical Professor Emerita at the Department of Psychiatry, University of Michigan Medical School

Dilmi Ranpatabendi, MS, BS, earned a BS in biology from Baylor University, and an MS in bioscience and health policy from Rice University. She is involved at the Department of Cardiothoracic Surgery at Massachusetts General Hospital examining how language barriers impact patient outcomes, particularly in heart and lung transplants. She is working on a case report at Beth Israel Deaconess Medical Center, where she helps educate surgeons on bioethical dilemmas. Her research interests include bioethics, health policy, and surgery with a focus on language-based health equity for marginalized communities. After completing her MBE, she plans to attend medical school.

Jaya Sadda, BS

The Ethical Considerations of Implementing Automated Machine Learning Models for Suicide Risk Prediction in Clinical Psychiatry

Current standards of practice in psychiatry for assessing suicide risk rely on a combination of screening questionnaires and unstructured clinical interviews. Providers have indicated that existing methods are limited in that assessments rely entirely on patient honesty and accurate reporting, suicidal thoughts fluctuate quickly, and clinical judgment is often limited in predicting suicide attempts. Such concerns have prompted the research and development of automated machine learning models that use electronic health record (EHR) data, and potentially external non-health data, to predict a patient's risk of suicidal behavior. The integration of predictive tools in clinical psychiatry raises numerous ethical concerns. This project aimed to characterize the ethical challenges associated with using AI-based tools for suicide prediction and identify the dangers in the current regulatory landscape. The first step included a literature review of psychiatry and ethics journals to determine established practices for suicide risk prediction, patient privacy and confidentiality laws, and provider reception to future predictive tools. Additional ethical challenges were identified by interviewing experts in the psychology, philosophy, and health law fields. The research revealed that the use of AI in suicide risk assessment is not a straightforward question of moral permissibility with a simple yes-or-no answer. While advanced predictive models are needed, the current regulatory landscape poses risks, including weak oversight of AI training, inadequate privacy protections, and unclear legal accountability. A sound methodological approach is needed and must recognize AI's impact on clinical practices while remaining vigilant of emerging risks. Given the speculative nature of AI in suicide risk assessment, an iterative framework, along with robust oversight mechanisms, is necessary to identify emerging challenges.

Mentor: Anthony Weiss, MD, MBA, MSc, Associate Professor of Psychiatry, Chief Medical Officer at Beth Israel Deaconess Medical Center

Jaya Sadda, BS, received a BS in neuroscience and history from the University of Michigan. As an undergraduate, she was a researcher at the Kellogg Eye Center, Michigan Medicine focusing on retinal diseases. She received honors in neuroscience for her senior thesis, *Mechanisms of Cell Recovery: Anastasis in Retinal Photoreceptors.* She served as a tutor for Detroit elementary school students and as a volunteer at the University of Michigan hospitals. Her bioethics areas of interest include reproductive health, advocacy, and global health ethics. After completing the MBE program, she plans to attend medical school.

Nada Salem, BSc

Consent for Biological Computers: Are Stem Cell Donors Informed About Emerging Biotechnology?

As stem cell research converges with computer engineering, it is time to re-evaluate traditional biomedical models of consent and ensure that they continue to respect the autonomy of stem cell donors. Computer hardware for artificial intelligence (AI) faces major limitations of energy, data processing, and storage. Alternatively, the human brain is capable of efficiently combining data storage and processing to perform computational tasks at a fraction of the energy cost. Using brain organoids—three-dimensional models of human brain tissue derived from stem cells—researchers can tap into the brain's computational power to inspire new models for AI hardware. However, stem cells from tissue banks are not usually accessed for non-biomedical research, and cases like biological computing are far beyond what a donor could reasonably expect when they initially provided open-ended consent. This project examined research ethics in bioengineering to understand how researchers fulfilled consent requirements when procuring human specimens as materials for computer hardware. The research explored current practices and gaps in the consent process, proposed recommendations for the future, and developed a decision aid to facilitate informed consent for future donors. A literature review was conducted to identify gaps in consent, donor values and perceptions of organoid-based technology, and ethical scientific guidance for communicating about cutting-edge technology. These insights shed light on what information researchers are ethically responsible for sharing to fully inform donors about the unique circumstance of brain organoid computing. The findings informed the development of a decision aid which explained the science behind brain organoid computing, its potential applications, and common questions regarding the moral status of brain organoids. Future steps include implementing better consent models in tissue banks for research cases that go beyond what a donor can reasonably anticipate.

Mentor: Insoo Hyun, PhD, Director of the Center for Life Sciences and Public Learning, Museum of Science, Boston

Nada Salem, BSc, is a science policy advocate and multimedia science communicator. She earned a BSc in biology from the University of Calgary. She has organized national advocacy campaigns at the intersection of science, society, and policy, and was the campaign manager at the Canadian non-profit Evidence for Democracy. She served on the board of directors at the Science Writers and Communicators of Canada association until 2024. Her bioethics research explores rights, accountability, and informed consent practices in emerging biotechnology, including medical AI and brain organoids. She plans to continue tackling social justice issues in technology and embedding ethics into innovation.

Julian Sandbrink, MSc

Are Data Protection Frameworks Ready for Implantable Brain-Computer Interfaces?

Implantable brain-computer interfaces (iBCIs) will soon enter clinical practice for a variety of neurorestorative purposes, including the restoration of movement and communication abilities. They offer unprecedented benefits for patients with severe neurological impairments. However, iBCIs also generate uniquely sensitive neural data, creating a distinctive privacy risk. With the help of Artificial Intelligence in decoding algorithms, the data can reveal deeply personal aspects of cognition, such as thoughts, emotions, and intentions. This project aimed to critically evaluate current data governance frameworks and their effectiveness in protecting iBCI-derived neural data. Through a review of the scientific, legal, and policy literature, the project identified critical regulatory gaps in existing frameworks such as the Health Insurance Portability and Accountability Act in the United States and the General Data Protection Regulation in the European Union. These frameworks do not explicitly classify neural data as sensitive, rely heavily on outdated de-identification practices, provide insufficient patient rights for data control, lack explicit protections against harmful inferences and misuses, fail to ensure adequate and non-coercive consent, and lack clarity regarding iBCI data ownership. To improve the framework issues, iBCI data must be explicitly recognized as a distinctly sensitive category of medical data and afforded special protections, including reduced reliance on de-identification for data protection, strong individual neural data rights, clear guidelines for a separate informed consent process regarding iBCI data use, regulations for data monetization, and restrictions on particularly sensitive inferences and data misuse. Regulations should remain adaptable and regularly revised as the technology develops. There is a need for future study to investigate underexplored dimensions of this topic, such as patient expectations and technical alternatives to current de-identification practices. Policymakers must implement thorough neural data protections before iBCIs enter clinical practice.

Mentor: Michael J. Young, MD, MPhil, Director of Neuroethics, Massachusetts General Hospital Center for Neurotechnology and Neurorecovery

Julian Sandbrink, MSc, is a fifth-year MD-PhD student at Charité Universitätsmedizin Berlin and the Max Planck Institute for Human Development. He received an MSc in neuroscience from the University of Oxford, UK. He is passionate about research and has experience spanning clinical trials, neuropathology, molecular neuroscience, cognitive computational neuroscience, and neuroethics. His doctoral work employs neuroimaging to investigate human working memory. Currently, he explores ethical and policy aspects of brain-computer interfaces and artificial intelligence, and after graduation, he will complete his MD-PhD while continuing his work in technology ethics and policy.

Mary Shin, MPhil, BS

Who Gets Treated? Hospital Decision-Making for Sickle Cell Gene Therapy Allocation

The recent FDA approval of CASGEVY and LYFGENIA, the first cell-based gene therapies for sickle cell disease (SCD), is an important therapeutic advancement. However, it raises questions of distributive justice and patient prioritization. SCD is an inherited disorder of abnormally shaped, rigid red blood cells that cause vessel blockage, debilitating pain crises, anemia, and potential organ damage, affecting everyday activities and long-term quality of life. Gene therapies are expensive (two to three million dollars per patient), resulting in insurance coverage restrictions, a demand-supply imbalance, and capacity limitations in authorized facilities, meaning that only 85 to 105 are treated annually out of approximately 100,000 patients. The access challenges for SCD treatment compound justice concerns for patients in dire need of help, most of whom are Black Americans. This capstone identified tensions and principles shaping hospital priority-setting policies for therapies; examined how hospitals function within the broader ecosystem of regulation, private industry, and the public; and analyzed institutional policies for ethics framework development. A literature review of SCD treatments, resource allocation principles, distributive justice theories, and adjacent areas (e.g., chemotherapy drug shortages) found that priority-setting framework considerations include disease severity, alternative treatment options, lottery systems, and a rejection of ability-to-pay. Research on extant policies included inquiries with local Boston area hospitals and experts at SCD centers, which revealed that there are two reported approaches to determining access to SCD treatments and involve the preparation of internal ethics frameworks for patient waitlists or individual physician responsibility for referrals and treatment decisions. Most emphasized patient-centered approaches through accessible educational resources and collaboration with community-based organizations. This capstone will continue to synthesize a wider network of institutions and SCD treatment prioritization approaches, provide ethics framework recommendations, and broaden conversations to engage the public audience.

Mentor: Leah Rand, DPhil, Research Scientist, PORTAL at Brigham and Women’s Hospital

Mary Shin, MPhil, BS, received a BS in electrical engineering and psychology from Johns Hopkins University and an MPhil in technology policy from the University of Cambridge, UK. As an undergraduate, she conducted behavioral research in computational audio perception and served as the co-president of the JHU chapter of the Society of Women Engineers. Her graduate studies focused on the ethical challenges of generative audio AI regulation. Her interest in bioethics primarily concerns the intersection of health-related technology, policy, and public engagement. After completing the MBE program, she plans to continue research regarding technological innovation and regulation in healthcare.

Natalie Sinjaradze, BS

Ethical Healthcare Leadership for Language Interpretation Strategies

Healthcare providers frequently care for patients with limited English proficiency (LEP) creating ethical dilemmas when communication barriers compromise comprehension, trust, patient autonomy, and the quality of care. These challenges arise from inadequate interpreter access, cultural miscommunication, and the absence of one-to-one equivalents for certain medical terms. This capstone project investigated leadership approaches to improving interpretation services and reducing communication barriers for LEP patients. This research included a narrative literature review analyzing ethical leadership practices in hospital-based translation services. Research results indicated that effective leadership in this domain is not top-down but instead requires engagement with the patient population and the interpreter services embedded within these communities. Leaders who prioritize collaboration with interpreters and community representatives improve translation accuracy, mitigate medical misunderstandings, and enhance patient trust. In turn, this approach increases patient satisfaction and improves healthcare outcomes. Future efforts for this project will focus on embedding leadership principles into healthcare administration training and policy development. Establishing standardized guidelines for the treatment of LEP patients is crucial. These guidelines must be informed by those directly impacted, the patients and the interpreters, to drive meaningful improvements in ethical, culturally competent care for diverse patient populations.

Mentor: Lindsay R. Semler, DNP, RN, CCRN, HEC-C, Executive Director of Clinical Ethics, Brigham and Women's Hospital

Natalie Sinjaradze, BS, received a BS in integrative biology from the University of Illinois Urbana-Champaign. As an undergraduate, she founded an organization dedicated to bridging language barriers in healthcare, held an education and justice chair position on the Student Sustainability Committee, and worked as a medical teaching and research assistant. She participated in the James Scholar Honors program and was awarded a certificate in integrative health. After graduation, she will continue to focus on her bioethics interests and explore how equitable global health leadership shapes the implementation of preventative care systems.

Christopher Siuzdak, ThM, MTS, MS, JCL, BA

Ethical Guidelines for the Use of fMRI-Based Lie Detection in Clinical Contexts

The potential future use of functional magnetic resonance imaging (fMRI)-based lie detection sits at the intersection of neuroscience, neuroethics, and clinical ethics in helping to resolve real-world clinical ethics dilemmas, especially where the veracity of stakeholders is central to moral analysis. One example is the multimodal assessment of malingering. Malingering is the not-uncommon phenomenon of feigning or grossly exaggerating symptoms of illness to gain external benefits such as paid leave from work, avoidance of legal proceedings, evasion of military service, or absence from school. Malingering imposes significant financial burdens on healthcare systems in the United States. It cost $1.96 billion in hospitalization charges in 2019, involving some 45,645 patients. While existing methods of detecting malingering have improved, they remain imperfect, and the literature recognizes the need for additional tools to incorporate advancements in neuroscience-based approaches. The potential introduction of fMRI-based lie detection in clinical settings, however, raises complex ethical questions. This capstone project involved a review of existing literature, which indicated that key ethical concerns include issues of justice, particularly the potential for disparities in access or the misuse of the technology against vulnerable populations. Moreover, it is important to preserve patient autonomy and ensure robust safeguards against coercion, establish clear thresholds for informed consent to address patient comprehension of the technology's capabilities and limitations, and invoke the principle of beneficence (especially when a patient explicitly requests brain-based lie detection). In short, fMRI-based lie detection has the potential to be implemented in clinical contexts without undermining the patient-physician relationship, when it is guided by carefully crafted specifications of principlism. Next steps include expanding the field of moral vision and specifying additional criteria for applying ethical frameworks beyond the principlism paradigm.

Mentor: Francis X. Shen, JD, PhD, Professor of Law, University of Minnesota Law School

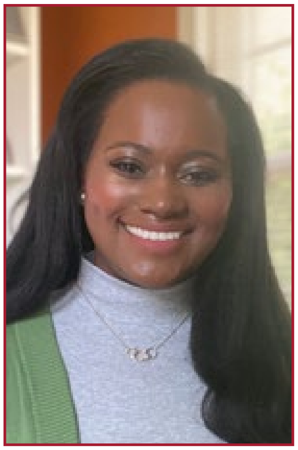
Christopher Siuzdak, ThM, MTS, MS, JCL, BA, received a BA in psychology and history from the Catholic University of America, an MTS at Boston College's School of Theology and Ministry, and a JCL from Catholic University's School of Canon Law. He then received an MS in Church Management from Villanova University's School of Business and a ThM from Harvard Divinity School. Previously, he spent six years in the ecclesiastical sector as a canonist at a Catholic diocese. His research in bioethics involves the intersection of law and neuroscience. After the MBE program, he plans to pursue a JD at Saint Louis University School of Law.

Allison Smith Newsome, JD

Teaching IT to Fish: Ethical AI Coding Accounting for Immaterial Racial and Ethnic Sperm Variations in Assisted Reproduction

Documented variations in sperm characteristics across races exist, yet the criteria for sperm selection in assisted reproduction fails to account for this diversity. This capstone explored the ethical implications of mistaking racial and ethnic variations in sperm characteristics as disqualifying features when training artificial intelligence (AI) models to select normal-quality sperm for use in assisted reproduction. AI tools boast uniformity and precision, but that tunnel vision raises issues in situations of acceptable diversity. As the popularity of assisted reproductive technology (ART) and its AI use swells, so too does the harm of the arbitrary discarding of diverse males' functionally fit but phenotypically nonconforming sperm. The AI tools used for ART are trained on a non-diverse "standard" model producing an injustice for diverse families' where reported fertility and chance of biological children are reduced improperly. This inadvertent eugenics increases their emotional suffering while decreasing their populations. Aiming to avoid such harm, this capstone proposed ethical guidelines and considerations to train AI use for ART to promote the viability of diverse groups' reproductive opportunity. A literature review produced confirmation that nonconforming sperm had resulted in healthy embryos and births, examined the rate of AI use and adoption in embryology, and reviewed the prevailing global criteria for sperm selection in ART. Additionally, the author conducted informational interviews with in vitro fertilization (IVF) researchers, clinicians, a clinic administrator, an attorney, an AI bioethicist, and ART-AI designers and engineers. The project highlighted issue-blindness in both medical and industry stakeholders and identified opportunities for sperm quality reassessment. Future steps include supporting the implementation of the proposed ethical guidelines within the growing industry and medical practice of ART-AI and advocating for updates to the global sperm evaluation criteria.

Mentor: Hadley Stevens Smith, PhD, MPSA, Assistant Professor of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute



Allison Smith Newsome, JD, is a corporate healthcare attorney. She received a JD from Case Western Reserve University School of Law and a BA in medicine, health, and society from Vanderbilt University. Her work has focused on advising providers on healthcare regulations, healthcare entity formation and governance, and quality patient care. She is interested in assisted reproductive technology, artificial intelligence in healthcare, and bioethics-based policy. She was named a Notable Woman in Law, a Rising Star Attorney, and the Best Lawyers in America. After the MBE program, she will practice law and collaborate in policymaking.

Russell Tam

Ethical Issues on Placing AI Accountability on Physicians in Clinical Decision Support Systems (CDSS)

As hospitals integrate artificial intelligence (AI) technology to improve efficiency and quality of care, national regulatory bodies preferentially place the onus of explaining AI-driven decisions to patients and mitigating potential AI-driven errors on physicians. Clinical Decision Support Systems (CDSS) are AI applications that analyze the electronic health records (EHR) documentation of symptoms, medical history, and test results to generate risk assessments, differential diagnoses, and treatment options. This capstone aims to evaluate the ethical concerns of holding physicians solely accountable for the performance and outcomes of CDSS. The research included a literature review and a collection of expert opinions to examine the potential risks that CDSS poses to patient safety, physician relationships with CDSS, and the proposed frameworks for regulation. Both programmers and medical researchers have documented well-known issues of accuracy, bias, hallucination, and the unexplainable black box, which predisposes CDSS to mistakes that are potentially harmful to patients. Holding physicians accountable for these errors raises ethical concerns, including placing an undue burden on clinicians, diverting responsibility away from developers and healthcare institutions, and discouraging the adoption of AI-driven systems. This project identifies a need for physician flexibility in leveraging the benefits and recommendations of CDSS, alongside broader stakeholder participation in managing AI risks. AI accountability requires greater algorithmic transparency from developers, third-party auditing, validation by hospitals, and informed consent. In order to move forward with integrating AI technology into healthcare, it is imperative to establish mechanisms that enable physicians to mitigate unnecessary patient risks.

Mentor: Vrushali Dhongade, MBBS, MS, MBE, Clinical Research Project Manager, Dhand Lab, Brigham and Women’s Hospital

Russell Tam is a third-year medical student at The University of Hong Kong (HKU). Before attending HKU, he was affiliated with Stan-X Research Lab conducting genetic engineering research in Drosophila melanogaster to advance the understanding of genetic control systems. He has collaborated with HKU’s Orthopedic Department to train artificial intelligence (AI) systems for spinal radiograph analysis for scoliosis. His research interests include the ethical considerations surrounding implementation of AI in clinical settings, particularly its role as decision support systems. Upon completing the MBE, he plans to return to HKU to complete his medical training, integrating bioethics into his future practice.

Reeana Tazreean, BHSc

The Role of Telemedicine, Innovation, and Ethics in Advancing Global Reproductive Health Equity for Youth: A Design Thinking Approach

Telehealth has emerged as a critical tool in expanding access to reproductive healthcare, especially for economically disadvantaged youth in rural and underserved areas. However, its implementation raises significant ethical concerns related to autonomy, consent, and equitable access. This capstone project explored how telehealth platforms enable and restrict access to services, such as medical abortion, with a focus on how these challenges affect marginalized youth. A review of the literature and analysis of real-world case studies of telehealth implementation allowed for a nuanced exploration of legal constraints, technological barriers, and disparities in digital literacy and infrastructure that impede ethical and equitable care. Case studies demonstrated that telehealth enhances privacy and reduces stigma, but only when supported by inclusive design and targeted policy interventions. The research concluded that while telehealth holds transformative potential, without intentional efforts to address systemic barriers, it risks reinforcing existing inequities. The next steps will include holding semi-structured interviews with experts and users of reproductive health and digital care delivery. The interviews will provide insight into how leaders and users of health technology view ethical decision-making frameworks and how clinical guidelines can be balanced with youth-centered considerations to address consent and access issues. The project resulted in a set of policy recommendations emphasizing the need for digital literacy training, youth engagement in platform design, and legal reforms to safeguard reproductive rights in virtual settings, which was summarized into an op-ed format. The resulting insights aim to inform both policymakers and healthcare innovators with next steps including the development of a toolkit for ethically informed telehealth implementation and collaboration with advocacy groups to amplify youth voices in the digital health landscape.

Mentor: Rachel Conrad, MD, Previous Fellow at the Harvard Medical School, Center for Bioethics

Reeana Tazreean, BHSc, is a children's rights and health policy specialist, design researcher, and humanitarian. She received a BHSc from the University of Calgary in Canada, at which time she was a senator and medicine faculty representative. She worked at UNICEF on the Policy and Public Relations/Communications team and as a health innovation architect consultant. Her research focuses on advancing postoperative mobilization within an Enhanced Recovery After Surgery framework and examining health disparities. Her bioethical interest includes investigating ethical implications of global healthcare innovation and youth. After graduation, she will continue to work in health policy, humanitarianism, and innovation.

Alexia Torres-Negrón, BS

Rhode Island’s HPV Vaccination Success: An Equitable Implementation Framework for States with Low HPV Vaccination Rates

Human Papilloma Virus (HPV) is responsible for over 90% of cervical and 70% of Oropharyngeal cancers in the United States. Despite the vaccine’s proven effectiveness in preventing HPV-related cancers, stark disparities in adolescent vaccination rates persist across the United States, raising significant ethical concerns about equitable healthcare access and health education. The CDC recommends a three-dose schedule starting as early as 9 years old and advises that all adolescents begin the series before their 15th birthday. Approximately only 61% of adolescents nationwide are vaccinated, with Rhode Island having the highest rate at 82.5% and Mississippi having the lowest rate at 38.5%. It used the Equitable Implementation Framework (EIF) to evaluate Rhode Island’s Vaccinate Before You Graduate (VBYG) program and focused on its successful strategies of school-based immunization clinics, community engagement, and resource allocation. The project focused on adapting the effective strategies used in Rhode Island’s VBYG program for states with lower vaccination rates, especially in demographics with limited healthcare access, culturally driven resistance, and inconsistent vaccination policies. Findings suggest that targeted strategies produce positive results in states with low HPV vaccination rates such as drafting state-specific policies, policy mandates, launching school public health campaigns, restructuring the state’s Department of Health and Human Services (HHS) website, expanding clinic networks, and prioritizing federally funded community education programs. The next step is to guide policy changes in states with low vaccination rates by advocating for incorporating the HPV vaccine into the school-mandated vaccine schedule.

Mentor: Ausubel Pichardo, MBE, Global Health & Medical Ethics Faculty at Simmons University and Teaching Assistant at Harvard Medical School Center for Bioethics

Alexia Torres-Negrón, BS, is an educational equity scholar. She received a BS in biobehavioral health from Pennsylvania State University, and served as a teaching intern, emergency department volunteer, mentor at Iroquois middle school, and research assistant in a sleep laboratory. She studied medical humanities at Oxford University and published a paper on telehealth for insomnia in older adults. Her bioethical interests include advancing access to primary interventions and improving health outcomes. She collaborates with Puerto Rico’s Comprehensive Cancer Center on assessing health equity, psychological well-being in cancer patients, and women’s health. After the MBE program, she will attend medical school.

Mari Van Court, MSN-FNP

"If I Can't Feed the Chickens, Then Life Isn't Worth Living" – HJ Buck 1914-1990

Autonomous choice of healthcare decisions at the end-of-life is a highly regarded and legally upheld ethical principle of American life. Following landmark legal cases, the Patient Self Determination Act (PSDA) of 1991 gave individuals the legal right to identify a trusted healthcare agent (HCA) to make healthcare decisions for them should they become incapacitated, and the right to create an Advance Directive (AD) document defining preferences and value choices surrounding end-of-life medical care. Since inception of the PSDA, the rate of identifying an HCA and completion of an AD remains steady at 30% to 37% of the population. This capstone investigated the role and the need for HCAs, and why, 34 years after the PSDA, 60% of the population do not engage with the HCA and AD process to convey their preferences. The research included informational interviews with prior HCAs and business stakeholders in clinical, legal, and end-of-life care; along with an extensive literature review and integrated personal lived experiences. Two distinct populations exist: those that engage with HCAs and ADs and those that do not. The HCA and AD process has four distinct phases: (1) designation of an HCA, (2) values elicitation and completion of an AD, (3) preparation and support of an HCA, and (4) post-HCA experience integration. There is a strong correlation between the choice of an HCA and the actualization of end-of-life preferences. Additional work is needed to promote effective models of support for HCAs; and to uncover why certain populations do not engage with the HCA and AD process to close the demographic and qualitative information gaps, while also understanding what their refusal is telling us about how they engage with end-of-life preferences.

Mentor: Leanne Homan, RN, BSN, MBE, HEC-C, Associate Director of Clinical Ethics, Center for Bioethics, Harvard Medical School

Mari Van Court, MSN-FNP, owns Health Resource Navigators. She received a BA in comparative international studies from the University of Washington and an MSN-FNP from Seattle University. She has worked in clinical, administrative, educational, and county leadership roles. Her interests in bioethics focus on aging and the intersection of artificial intelligence and healthcare delivery. She received the Washington State Council on Aging Dennis Mahar Excellence in Action award, the State of Washington Governors Volunteer Service Award (Honorable Mention), and Seattle University's Clinical Preceptor of the Year award. Following graduation, she will continue community-based work on aging issues.

Kaden Venugopal, BHSc

An Argument Against Approving Medical Assistance in Dying for Patients in Canada with Substance Use Disorder

Canada plans to expand medical assistance in dying (MAiD) to persons suffering exclusively from mental illness in March 2027. While emerging Canadian MAiD policies identify several mental illnesses eligible under these provisions (e.g., depression, anxiety, and personality disorders), no consensus exists on whether substance use disorders (SUD) or psychiatric patients with comorbid SUD are MAiD eligible, eliciting concern on the ethical permissibility of such access. To explore this emerging legislation and its implications we conducted an extensive literature review on psychiatric MAiD in Canadian and international contexts and analyzed the strengths and limitations of the various frameworks. We performed unstructured interviews with stakeholders and multidisciplinary professionals including psychiatrists, MAiD physicians, lawyers, policymakers, end-of-life ethicists, and mental health scholars. This investigation involved shadowing clinical ethicists to gain a real-world understanding of capacity decisions, end-of-life decision making, and the interaction between SUD and the treatment of mental health conditions. Ethical concerns include treatment complexity, synergistic symptom exacerbation of SUD and other mental illnesses, and diminished decision-making capacity. The broader societal impacts involve religious interdictions, the legal difficulties of establishing competence, apprehension from family and loved ones, and the moral distress of caregivers. We recommend excluding SUD as the only mental illness eligible for MAiD, and urge the Canadian government to develop a comprehensive and judicious framework for addressing MAiD requests from treatment-refractory psychiatric patients with concurrent SUD. Before Canada expands MAiD for mental illness, it is important to conduct multidisciplinary policy research on the use of MAiD for patients with SUD and should involve clinicians, lawyers, patients, religious communities, and family and community members. In approaching the grievous suffering created by mental illness, compassion and care must thrive within the bounds of cautious public policy.

Mentor: Mariah Tanious, MD, MPH, FAAP, Assistant Professor, Department of Anesthesia and Perioperative Medicine, Medical University of South Carolina, Charleston, SC

Kaden Venugopal, BHSc, is a Knox Memorial Fellow at Harvard University researching medical assistance in dying (MAiD) and psychiatric illnesses. He holds a BHSc from the University of Ottawa, Canada. He has experience in pharmaceutical and clinical settings, in government relations with the Parliament of Canada, and in volunteering with high-risk communities. His research focuses on reproductive health justice, nutrition, and mental health. His work in bioethics includes analysis of autonomy, decision-making capacity, and caregiver roles in psychiatric MAiD. He received the Dean's Award of Excellence. Following the MBE, he will attend the University of Alberta's medical school.

Loren Walker, BS

Beyond Informed Consent: A Scoping Review of Alternative Consent Models in Adult Clinical Practice

Informed consent is fundamental to clinical medicine, serving as a key mechanism for respecting patient autonomy. However, the use of informed consent faces criticism for various ethical reasons, exposing the need for new models for decision making and consent. The objective of this capstone project was to investigate the ethical reasons motivating non-informed consent models and identify the key features of proposed alternatives. The research team conducted a scoping literature review to identify and analyze alternative consent models proposed or utilized in adult clinical practice. Our search yielded 38 articles suggesting 15 alternative models to informed consent. The models responded to three main groups of ethical issues with informed consent including a lack of patient autonomy, a lack of beneficence, and logistical constraints. The main issues prompting the need for change include insufficient time to thoroughly complete the informed consent process, patients misunderstanding the information provided, and patients feeling overwhelmed with the amount of information. Four main features of models were identified involving more time to elicit patient values, greater emphasis on physician views, improvement to the clarity of informed consent, and alteration of the choice architecture. The most common specific feature that aids consent is providing more time to elicit values. The research found that alternative models were defined based on key features including a patient's refusal of consent, not all information is disclosed to patients, consent is collaborative and includes the patient's individual context, and patients are not required to make detailed choices about treatment. Many proposed alternatives to informed consent respond to ethical challenges and are relevant in certain circumstances. This project synthesized the research literature on informed consent and provided a framework for those implementing a consent process in clinical settings.

Mentor: Anna Lewis, PhD, Research Scientist, Brigham and Women's Hospital

Loren Walker, BS, received a BS in multidisciplinary science from the University of Oregon. As an undergraduate, she assisted in juvenile justice improvement and incorrigibility policy research, postpartum depression research, and volunteered as a hospice companion to terminal patients. Her bioethics research interests include consent practice policies in clinical medicine and how various models alter care and psychological outcomes. She received the Apex Scholarship for academic achievement and the Gold and Bronze Presidential Service Awards for volunteering. Following graduation, she will continue legal policy work before preparing for law school.

Anakin Chi Hong Wan

Unfair But Unavoidable? Assessing the Role of Social Support in Liver Transplant Allocation

Transplant clinicians across the country widely acknowledge that the level of social support for a patient is a significant factor influencing their evaluation for liver transplant eligibility. However, research has shown that the application of social support criteria is inconsistent across transplant centers. It lacks reproducible evidence base and presents an ethical concern when it becomes the sole barrier preventing otherwise qualified patients from receiving a transplant. As it stands, citing a lack of social support as an exclusionary criterion selectively disadvantages certain populations from accessing liver transplants. This capstone aimed to interrogate the historical and contemporary evidence that led to the use of social support as a transplant criterion and examine how this requirement disproportionately impacts specific patient populations. A literature review identified conflicting evidence regarding the usefulness of social support as a criterion. While several studies from the early 2000s linked pre-transplant psychosocial status to downstream transplant success, a more recent meta-analysis demonstrated that social support was not predictive of post-transplant outcomes. Newer studies continued to affirm that social support as a criterion lacks clarity, leading to high inter-physician variability and, ultimately, exacerbating healthcare disparities. Thus, this capstone focused on presenting an alternative conceptualization of social support as a transplant criterion. This capstone proposed an enhancement for this criterion by incorporating evidence-based psychosocial elements into a standardized assessment tool that minimizes user variability to mitigate subjectivity and improve transparency. The most pressing avenue for further research is to conduct a deeper ethical analysis on obligations towards patients deemed to have insufficient support, ensuring that access to life-saving treatment is not contingent on demonstrating social resources.

Co-Mentors: J. Wesley Boyd, MD, PhD, Director of Education, Center for Bioethics, Harvard Medical School; Joni R. Beshansky, MPH, LP.D., Senior Associate Director of Education, Center for Bioethics, Harvard Medical School

Anakin Chi Hong Wan is a third-year medical student at The University of Hong Kong (HKU). His primary research focuses on applying predictive genomics to cardiovascular diseases at the Broad Institute of MIT and Harvard. His interests in bioethics center around resource allocation in clinical medicine and the equitable distribution of scarce medical materials. He is an HKU President's Scholar, a Martin Scholar at St. John's College (HKU), and a recipient of the BL Wong Prize for Clinical Skills. Following graduation, he plans to return to Hong Kong to complete his medical degree and aid in developing HKU's bioethics curriculum.

Kai Wing “Karin” Wang

Ethical Considerations for AI Suicide Risk Prediction in Primary Care

Primary care physicians (PCPs) frequently encounter patients at risk of suicide, but accurate identification remains challenging due to complex patient presentations, time constraints, and limited training. Research demonstrated that Artificial Intelligence (AI), specifically machine learning algorithms, can outperform physicians in predicting suicide risk offering a promising solution to these challenges. This capstone project evaluated the ethical considerations arising from integrating AI-based suicide prediction tools into primary care, incorporating cross-cultural perspectives from Eastern and Western contexts. The research involved a narrative literature review, combined with exploratory discussions involving psychiatrists and primary care physicians from Hong Kong and the United States. The identifiable ethical concerns included physician autonomy, patient-physician trust, liability, consent, bias, stigma, and the risk of harm due to misclassification. Research indicated the need to examine in greater detail the ethical concerns particularly relevant to the physician-patient relationship. Analysis highlighted significant ethical tensions arising when AI recommendations conflict with clinician judgment, potentially eroding physician autonomy. Furthermore, ambiguity exists around consent procedures such as whether routine implicit screening practices suffice, or whether the sensitivity of suicide prediction warrants explicit consent. Final analysis concluded that the successful integration of AI tools into primary care requires clear ethical guidelines that preserve clinician autonomy, safeguard patient trust, and promote transparent communication. Physicians should view AI-based suicide prediction as a form of decision support, with physicians remaining the final decision-makers who interpret AI outputs as one data point among many. Rather than dictating care, these outputs should serve as entry points for deeper patient engagement and human connection. Moving forward, this project will culminate in an ethical analysis manuscript aimed specifically at PCPs, providing practical recommendations for responsibly incorporating AI into clinical practice while preserving the integrity of the physician-patient relationship.

Mentor: Lisa Moses, VMD, Faculty Member, Center for Bioethics, Harvard Medical School, Lecturer, Department of Global Health and Social Medicine, Harvard Medical School

Kai Wing “Karin” Wang is a third-year medical student at The University of Hong Kong (HKU). During her preclinical years, she conducted research on genetic mutations in rare hematological malignancies, health disparities among Asian Americans, and systemic factors influencing physician misconduct. Her bioethical interests lie at the intersection of psychiatry, genomics, and artificial intelligence. She is a recipient of the HKU Presidential Scholarship, Medical Dean’s Scholarship, and the Hong Kong Genomic Institute Genomic Science and Medicine Prize. Upon graduation, she plans to complete her medical degree and advance bioethics conversations back in Hong Kong.

Zhuo Yin “Jamie” Wu

Building Trust and Health Equity: The Impact of Clarksdale Baby University on Healthcare Access for Black Mothers

The Mississippi Delta region faces some of the worst health disparities in the United States, particularly among Black communities, due to structural racism, rural hospital closures, and the absence of Medicaid expansion. Mississippi has one of the highest rates of preeclampsia, cervical cancer, and maternal mortality in the country. In 2018, the United Health Foundation ranked Mississippi 47th or lower in key health indicators, including outcomes, behaviors, clinical care, community, and environmental factors. This project examined the health-seeking experiences of Black mothers participating in Clarksdale Baby University (Baby U), a free eight-week parenting program that provides education on baby care, child development, nutrition, financial management, mental wellbeing, self-care, and other essential topics. Specifically, the capstone aimed to document participants’ healthcare challenges prior to program enrollment, assess perceived changes in healthcare access and health literacy after participation, and analyze how systemic barriers affect health equity in the region. This mixed-method research study employed semi-structured interviews and surveys to collect firsthand accounts from Baby U participants. Although community-based organizations help bridge gaps in health access, racialized stigma often deters participation. Baby U was founded by a White activist and initially struggled with community engagement due to skepticism toward outsider-led initiatives. However, its transition to Black leadership fostered trust and improved accessibility. Analyzing qualitative data using thematic content analysis to evaluate the program’s impact and identify barriers to engagement will be done. The project’s final steps will be the development of a medical leaflet to enhance participant health agency, share the findings with local stakeholders, and publish the findings in a peer-reviewed journal to inform future grassroots initiatives. This research highlights the need to address systemic inequities and support community-driven solutions for advancing health equity.

Mentor: Elizabeth J. Levey, MD, Assistant Professor of Psychiatry, Massachusetts General Hospital

Zhuo Yin “Jamie” Wu is a third-year medical student at The University of Hong Kong (HKU). Her research interests include enhancing the technological platforms for ophthalmology education and addressing healthcare access disparities among racial minorities in Hong Kong. She volunteers with non-profit organizations such as Orbis and the Hong Kong Society for the Blind. She was awarded the Josephine Clarke Prize and is a recipient of the Martin Prize at St. John’s College, HKU. Her bioethics interests focus on health equity and clinical decision-making in end-of-life care. Following graduation, she will complete her medical studies while contributing to the development of HKU’s bioethics curriculum.

Ren Yagawara, BA

Examining Physician Obligation to Provide Nonclinical Care: Incorporating Positive Psychology Interventions to Facilitate Recovery

A complete medical recovery requires focus beyond clinical operations and pharmaceutical treatment such as patients taking prescribed medications, attending to physical rehabilitation, or enacting lifestyle changes to account for underlying influences of one's diagnosis. Failing to address nonclinical components of recovery can lead to increased medical complications, creating additional burdens for both patients and clinicians. For example, 20% of patients fail to take their medication as prescribed, and 70% of patients do not complete their full course of physical therapy. Physicians have an ethical obligation to provide individualized, integrative care that considers the person beyond the patient. Positive psychology, or the science behind human well-being and flourishing, can supplement conventional medicine by recognizing psychological and social variability across patients to provide a more humanistic approach to health care. For instance, practicing optimism can illuminate a patient's motivating factors to push through adversity. Deliberate goal setting can facilitate patient recovery, and even simple activities such as viewing art can provide massive benefits to one's well-being. This project examined the effectiveness of positive psychology interventions in clinical populations, assessed the feasibility of successful implementation, and identified potential areas of improvement. conducted a literature review on positive interventions with patient populations. His research indicated that positive interventions are a consistent and reliable means of improving nonclinical well-being. These interventions offer a variety of benefits, including decreased pain perception, and alleviation of symptoms of anxiety and depression. Furthermore, positive interventions heighten positive affect and increase feelings of life satisfaction, which is especially pertinent for the challenging circumstances faced by many patients.

Mentor: Tim Janchar, MD, MBE, Assistant Professor of Emergency Medicine, Oregon Health & Science University

Ren Yagawara, BA, is a dual-master's student studying applied positive psychology at the University of Pennsylvania. He received a BA in psychology from the University of Pennsylvania with Benjamin Franklin Scholars honors. His research focuses on cancer immunology and positive psychology, currently studying the relationship between music engagement and social well-being with the Humanities and Human Flourishing Project. His bioethics' interest stems from his desire to create a more individualized, integrative form of healthcare through the application of positive psychology, particularly with disability rehabilitation and accounting for sociopolitical determinants of health. Upon completing his MBE, he will begin medical school.

Ka Wai “Ernest” Yip

The Use of Artificial Intelligence in Dementia Care: Engaging Caregiver Perspectives to Develop an Ethics Framework

As the global population ages, healthcare systems face a critical shortage of geriatric and dementia care professionals. Recent trends show that large language models (LLM) and Artificial Intelligence (AI)-powered tools offer promising solutions to address this shortage. These solutions can extend the reach of professionals, facilitate caregiving, and assist with medication tracking and behavioral management. However, the integration of AI-powered tools in dementia care raises complex ethical, legal, and practical challenges, particularly around informed consent, data stewardship, and decision-making authority. This qualitative research study empirically explored these topics by conducting scenario-based interviews and surveying caregivers for persons with dementia. The study focused on salient topics including informed consent, caregiver preferences, and surrogate decision-making. Caregivers were asked to consider the use of AI tools in real-world settings, highlighting the ethical and practical questions that arise. Data analysis is currently underway, but preliminary findings indicated that participants widely recognize AI’s potential complementary role in dementia care, particularly in behavioral management. Acceptance was context-dependent and influenced by institutional endorsement and peer reviews. Overarching concerns about corporate involvement and data privacy were prominent, with some calls for greater transparency from developers and public entity ownership as potential safeguards. Some caregivers preferred human oversight of AI responses and were willing to accept delays in responses to allow for human involvement, viewing them as comparable to standard healthcare wait times and prioritizing accuracy and reliability over speed. The results from these interviews will inform the development of a novel ethics framework prioritizing informed consent, accountability, and data stewardship to ensure that AI deployment aligns with the realities of dementia caregiving and enhances patient-centered care.

Mentor: Benjamin C. Silverman, MD, Senior IRB Chair, Human Research Affairs, Mass General Brigham; Assistant Professor of Psychiatry at Harvard Medical School

Ka Wai “Ernest” Yip is a third-year medical student at The University of Hong Kong. He serves as a teaching fellow at Harvard College, a selection committee member of Harvard’s Global Health Institute and a master’s Program Representative at Harvard Medical School. He is a Board Member of the Laidlaw Foundation, and Council Member of Hong Kong’s Outstanding Students’ Association. His bioethics interests include surgery, digital health, global health equity, and his work with The Lancet Global Health Commission on universal coverage. Upon completing the MBE, Ernest will continue medical training while creating bioethics consortia within the local community.

Michael Yue, CiL, BScH, BS

Bridging Capacity and Competency: Ethics Paradigms on Paediatric Minds

One of the primary ethical questions in paediatric medicine concerns the role of the child, a minor, in the healthcare decision-making process. A minor is an individual considered below the age of majority, which is the legally defined age at which a person is considered an autonomous adult. Notably, formal laws defining the age at which minors can make healthcare decisions for themselves without parental consent lack uniformity across the United States. This creates cross-state discrepancies regarding the age at which a minor can exercise full autonomy over their healthcare decisions and in which healthcare contexts specifically they may do so. This capstone project aimed to tackle this competency-capacity issue by applying various ethical frameworks relevant to paediatric medicine and healthcare policy, as well as proposing an ethics-informed means of bridging this competency-capacity gap. Research efforts included analysis of literature pertaining to paediatric ethics on healthcare decision-making and practical shadowing rotations at Boston Children's Hospital, most notably in their Adolescent and Young Adult Medicine Clinic. The conclusions from this capstone experience prove that while the ethics of paediatric healthcare decision-making is a well-researched topic, there is a deficit in the practical integration of this research into realized public policy. Advances in both paediatrics and healthcare policy should approach competency-capacity disparities as an issue related to the ethics of justice. This prescribes an ethical obligation to policymakers to strive for greater uniformity in paediatric healthcare decision-making policy across the United States in order to promote greater equity in access to autonomous healthcare.

Mentor: Jennifer McGuirl, DO, MBE, Harvard Medical School

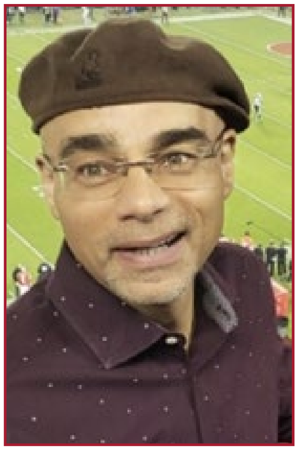
Michael Yue, CiL, BScH, BS, serves on the Board of Directors at the non-profit Trellis HIV and Community Care, whose operations include HIV care and harm reduction initiatives. He received a BS in life sciences with a minor in philosophy, a BScH and a Certificate in Law from Queen's University in Ontario, CA. His past research projects focused on social and clinical psychology, human sexuality, and anatomical imaging. His bioethical research interests include pediatrics and reproductive sexual health, especially cases involving competing cross-cultural and cross-generational interests. After completing the MBE program, he plans to attend medical school to become a pediatric oncologist.

Nauphyll Zuberi, MBBS

Mothers who Kill their Babies: Seeking Consilience Before the Storm

Postpartum psychosis (PP) is a rare condition, but its consequences can be devastating. If PP goes unrecognized and untreated, it poses a real risk for infanticide, and the illness stays hidden until it makes national headlines. Surprisingly, it is not regarded as a separate diagnosis in psychiatry's diagnostic and statistical manual (DSM). The condition lies at the intersection of OBGYN, pediatrics, psychiatry, and law. The ethical dilemmas range from a mother's involuntary hospitalization, mother-infant separation, forced treatment, implications for mother-baby bonding, breast-feeding while on meds, custody issues, and concerns about future pregnancies. This capstone focused on developing a template to discuss the bioethical issues inherent in this tense situation, where oftentimes no consensus exists between the stakeholders from different specialties. While the obstetrician is focused on the mother's condition, neonatal intensive care unit nurses are worried about the baby's safety and needs. The psychiatrist wants to admit the patient to the psychiatric ward, and the attorneys concentrate on the involuntary hospitalization and custody issues. An extensive literature search pertaining to PP, was done in different spheres but revealed little to no discussion of the ethical concerns related to the treatment of PP. Additionally, interviews were conducted with thought leaders and support groups which revealed a need for prospective consideration of ethical challenges inherent in the PP situation. The project used a preventive ethics lens to develop consilience between stakeholders since disagreements between staff can synergistically exacerbate an invariably ethically fraught situation. Next steps for this capstone include establishing guidelines for discussion of PP treatments among different specialties, advocacy for the recognition of this disorder in the DSM, and the reduction of stigmatization for mothers who have this condition.

Mentor: Douglas Knittel, MD, MBE, Retired, formerly at the Naval Medical Center in Portsmouth, Virginia



Nauphyll Zuberi, MBBS, is a psychiatrist, academic psychoanalyst, and faculty at Oregon Health and Sciences University. He received an MBBS from King Edward Medical College in Pakistan, completed psychiatric training at UT Southwestern Medical Center, and a fellowship in Geriatric Psychiatry at the University of Florida. He did psychoanalytic training at the Oregon Psychoanalytic Institute and Grex group relations training. For 15 years, he ran a military program that treated active-duty soldiers suffering from trauma. His bioethical focus is on justice for the mentally disabled. After graduation, he hopes to serve on hospital ethics committees and teach bioethics to psychiatric residents.

Akwi Asombang, MD, MPH

Exploring Perceptions of Medical Tourism in Zambia through Focus Group Discussions

Medical tourism (MT) involves traveling outside one's country of residence to obtain clinical care. MT is a multi-billion-dollar business with a projected annual growth rate of 33% by 2030. However, the financial benefits accrue disproportionately in some countries while having detrimental effects on others. The ethical concerns include global health equity, patient follow-up, and the local capacity to treat the patient in their country of origin. An example of this differential impact is the effect of MT on the country of Zambia, a landlocked country in Southern Africa with a population of 22 million and less than 20 gastroenterologists. This Capstone explored the perception of MT on the healthcare system in Zambia and the reasons why patients are referred outside of Zambia for gastrointestinal clinical care. The capstone developed a priori focus group discussion (FGD) guide, paying close attention to cultural context and applicability to understand ethical concerns, policy related factors, and its ability to identify gaps in healthcare. Further research involved conducting, recording, and transcribing two FGDs between February and March of 2025 with Institutional Review Board approval from Harvard Medical School, the University of Lusaka Zambia, and the University of Zambia Biomedical Ethics Research committee. It used a non-probability convenience sampling approach and identified participants from the healthcare system, broadly categorized into three groups including medical doctors providing direct gastrointestinal disease related patient care, hospital administrators, and policy makers within the Ministry of Health. Preliminary results revealed both advantages of MT in Zambia, such as patient access to specialized care, diagnostic tools, and medical interventions, and disadvantages, such as, hindrance of in-country skill development, adverse governmental financial implications, corruption due to lack of process selection transparency, and cultural differences for patients.

Mentor: Edward Hundert MD, Senior Lecturer, Global Health and Social Medicine; Associate Director, Center for Bioethics, Harvard Medical School

Akwi Asombang, MD, MPH, is an interventional gastroenterologist and director of global health programs at Massachusetts General Hospital. She received an MD from Kasturba Medical College, India. She completed an advanced endoscopy fellowship at Beth Israel Deaconess Medical Center, a gastroenterology fellowship at Washington University School of Medicine, and an NIH Fogarty International Clinical Research fellowship. In addition, she completed a combined Internal Medicine/Pediatrics residency at St. Louis University School of Medicine. She co-founded the Pan-African Organization for Health, Education, and Research, a non-governmental-organization mobilizing healthcare resources in Africa. Upon graduation, she plans to continue exploring ethical challenges in global health.

Rodel Ventura Capule, MD, JD

Unilateral Do-Not-Resuscitate Orders in Pandemics: Ethical Dilemmas, Resource Allocation, and Patient Rights

The use of unilateral do-not-resuscitate (UDNR) orders during the COVID-19 pandemic sparked intense debate and raised concerns about surrogate consent, equitable resource allocation, and the balance between individual rights and public health priorities. These decisions were often justified by principles of medical futility and the need to optimize limited resources. This review examined the practice and implications of UDNR orders in pandemics, highlighting a shift from deontological to utilitarian decision-making. While UDNR measures aimed to ensure efficient resource distribution, they contributed to physician moral distress and raised concerns about implicit biases and the potential erosion of patient rights. During the pandemic, these concerns became even more pronounced as medical decisions were sometimes influenced by subjective value judgments rather than purely clinical considerations. Studies in the United States indicate that UDNR orders were disproportionately applied to non-white and non-English-speaking patients, revealing systemic disparities exacerbated by communication barriers. In addition, the high transmission risk of SARS-CoV-2 complicated resuscitation decisions as protecting healthcare workers became a crucial factor in determining treatment approaches, particularly during aerosol-generating procedures like cardiopulmonary resuscitation. Historical parallels in infectious disease outbreaks, such as Ebola and rabies, offer some context but do not fully justify UDNR policies during COVID-19. Legal precedents, such as Bragdon v. Abbott (1998), established that fear of infection alone does not justify withholding treatment, rather, the risk to others must first be mitigated through reasonable modifications in policies, practices, or procedures. This review emphasizes the need for transparent, equitable, and ethically sound protocols in future pandemic preparedness. While utilitarian considerations contribute to crisis decision-making, patient rights and autonomy must remain central to ensure that ethical safeguards prevent unjust disparities in care.

Mentor: Dr. Erwin J. Khoo, MBBS, FRCPCH, Affiliate, Center for Bioethics, Harvard Medical School

Rodel Ventura Capule, MD, JD, is an emergency physician at Adventist Medical Center Manila (AMCM) and a legal medicine practitioner at Makati Medical Center (MMC) in the Philippines. He received an MD from Manila Central University School of Medicine, and a JD from Arellano University School of Law in the Philippines. Presently, he chairs the Bioethics Committee at the AMCM and is a member of the Bioethics Educational Committee at MMC. His interest in bioethics is focused on the rationing of scarce medical resources and end-of-life dilemmas. After graduation, he plans to engage in bioethics research and teaching.

Mark F. Carroll, MD

Interdependence: A Bioethical First Principle

Procedural approaches to bioethical decision-making involve the balancing of ethical principles. While clinically useful, formulaic issue framing can reinforce rather than resolve tensions between individual autonomy and the common good, amplifying differences instead of promoting consensus for social justice and other complex bioethical considerations. Focusing too rigidly on the decision-making process, can overshadow the fundamental reasons why decisions are important. This capstone project investigated the concept of interdependence as an integrating first principle for bioethics, exploring options for its morally imaginative use. Guided by conversations with interdisciplinary thought leaders, an extensive literature review revealed a widespread inclusion of interdependence in bioethical deliberation, as both an orienting metaphor and a unifying construct. Two main types of interdependence were evident, including transactional interdependence as reciprocal reliance based on mutual benefit, and transformational interdependence as mutual reliance shaped by shared identity. Assumptions about the metaphysical nature of the self-inform adoption of transactional or transformational perspectives across a range of bioethical dilemmas. Usually unrecognized, these diverging beliefs on human-human and human-ecosystem inter-reliance lead to polarizing debate about autonomy and justice and, in turn, differing prioritization of ethically permissible versus ethically preferable action. To enhance understanding of interdependence in clinical, research, or policy settings, an examination of the bioethical whole self was proposed. An example of engaging the whole self is asking oneself, “For this situation, what is the opportunity to serve, to learn, and to love?” Situationally grounded responses to such relationally reflective inquiry activate interdependence as a first principle, intentionality, affording bioethicists insight into alternatives for issue framing and discernment that vary based on the use of a transactional or transformational lens. Future work will further elucidate this whole self-examination model and the foundational interaction of interdependence with other motivating bioethical principles and concepts.

Mentor: Lainie Ross, MD, PhD, Dean’s Professor and Chair, Department of Health Humanities and Bioethics, University of Rochester School of Medicine and Dentistry

Mark F. Carroll, MD, has served in diverse care delivery and program development roles across the health ecosystem. After receiving an MD from Dartmouth Medical School, he did a surgical internship, pediatric residency, and a health services and policy fellowship. He has held leadership positions in federal and Tribal public health systems, regional healthcare and philanthropic organizations, and a state Medicaid payor and nonprofit managed care plan. He is dedicated to improving health and wellbeing for underserved populations through ethical and equitable access to evidence-based care and innovation. After graduation, his focus will be to reduce suffering and promote health justice.

Kaitlin Cassidy, BSN

Shaping the Future: Rethinking How NICU Providers Communicate Neurodevelopmental Outcomes

Neonatal Intensive Care Unit (NICU) providers play a critical role in discussing neurodevelopmental disorders with parents, but prognostic conversations often emphasize deficits, which negatively influence parental perceptions of a child's future. This approach reinforces ableist perspectives and oversimplifies the complexity of quality-of-life assessments. This capstone aimed to examine how neonatologists discuss neurodevelopmental prognoses with parents and explored how unconscious biases influence these conversations. Through a narrative literature review and qualitative analysis of provider perspectives, this project identified common themes in clinician-parent communication, including an emphasis on deficits over adaptive potential, the framing of impairments in terms of burden, and the challenge of balancing honesty with hope. Additional research involved analyzing published accounts and articles detailing parental perspectives to understand how language and framing impact parental expectations and decision-making. Analysis of the literature suggests that current communication practices reinforce a deficit-based model of disability, potentially influencing parental perceptions in unintended ways. This project proposed the use of an educational tool to guide clinicians to foster more nuanced, patient-centered discussions about long-term neurodevelopmental outcomes. Future work will focus on refining this tool, integrating perspectives from disability studies, narrative ethics, and communication research to support providers in engaging in more balanced and inclusive prognostic conversations.

Mentor: Carolyn Baker Ringel, JD, MBE, Affiliate, Center for Bioethics, Harvard Medical School

Kaitlin Cassidy, BSN, works in the neonatal intensive care unit (NICU) at New York-Presbyterian Alexandra Cohen Hospital for Women and Newborns. She received a BS in nursing from New York University. Her work focuses on supporting families and care teams as they navigate complex ethical dilemmas in the NICU setting. Her bioethical interests include disability ethics, narrative decision-making, and the impact of implicit bias on discussions of quality of life. She was nominated for the DAISY Award for Extraordinary Nurses. She plans to further expand her work in bioethics by pursuing her interest in clinical ethics consultation and health policy development.

Wei Meng “Vincent” Chia, MB, BCh, BAO

Development of an Axiologically-Enhanced Principlist Framework for Clinical and Intercultural Bioethics with Applications in Confucian Familial Autonomy

The principlist framework by Beauchamp and Childress (BC) is the dominant, bioethical framework used in clinical ethics and focuses on four mid-level principles for diverse cultures including autonomy, beneficence, non-maleficence, and justice. However, the BC framework omits axiology, which is a value theory that is necessary for the specification and balancing of principles as well as justified moral judgment via wide reflective equilibrium. This need for an axiology is implied throughout BC’s seminal work Principles of Biomedical Ethics. The aim of this capstone project was to demonstrate definitively the requirement of an axiology for BC’s principlism, to propose an axiology compatible with principlism by grounding it in the common morality, and to utilize an axiological-enhanced framework to demonstrate that Confucian familial autonomy is consistent with the principle of respect for autonomy (PRA) thereby bridging intercultural understanding. This research involved a systematic literature review and philosophical analysis, establishing that a value theory is crucial for principlism, and that it is possible to incorporate the theory of axiology into the principlist framework by grounding it in the basic goods of common morality, such as life and sociability. As a result, this capstone developed an axiologically-enhanced framework useful for promoting intercultural understanding in clinical ethics. This framework was applied to Confucian familial autonomy to illustrate its consistency with the PRA, thereby dispelling suspicions that the PRA is not applicable in East Asian cultures. As a next step, this capstone aspires to apply the axiologically-enhanced framework to various clinical cases and bioethical dilemmas with a view to demolish intercultural barriers and promote cross-cultural understanding and consensus.

Mentor: Jason T. Eberl, PhD, Hubert Mäder Chair in Health Care Ethics, Saint Louis University

Wei Meng “Vincent” Chia, MB, BCh, BAO, is the founding director and senior family physician of Elyon Family Clinic and Surgery in Singapore. He received an MB BCh BAO from University College Dublin in Ireland and a graduate diploma in family medicine from the National University of Singapore. He completed a family medicine residency in Singapore’s public hospitals. He is interested in the metaethical underpinnings of bioethics including moral status and personal identity, beginning and end-of-life dilemmas, and primary care ethics. After graduation, he plans to advance primary care ethics research and education in Singapore and continue bioethics advocacy research.

Roger Y. Chung, PhD, MHS

The Ethical Permissibility of Euthanasia in Hong Kong: The Empirical Evidence and Normative Arguments

The Medical Council of Hong Kong's Code of Professional Conduct (the Code) states that euthanasia, in the form of active euthanasia or physician-assisted dying, is "neither legal nor medically ethical," and is "not practiced in vast majority of countries" claiming that Hong Kong (HK) society and its government reject euthanasia. However, there is concern in HK over the need for its legalization for "similar extreme desperate situations." This project reviewed the recent judicial case of HKSAR vs Kwok Wai-yin [2022], where the defendant ended the life of his terminally ill wife by charcoal burning. While no countries in Asia have legalized euthanasia, an increasing number of developed jurisdictions have embraced some form of it. To examine the ethical permissibility of euthanasia in HK, this project included conducting a literature review on the empirical evidence of the attitudes towards euthanasia among different groups in HK since 2000, alongside the normative arguments supporting euthanasia from both Western and Chinese perspectives. Findings indicated that, despite its illegal status and the Code's position, a considerable proportion of the public accepts euthanasia as an option for terminally ill patients. Chinese Confucian ethics are still a strong influence on Chinese culture today, which values the sanctity of life and filial piety. However, Confucius beliefs on the value of life support the ethical permissibility of euthanasia by acknowledging that certain cases justify prioritizing the value of life over biological survival. The findings of this project revealed a change in public attitudes towards euthanasia in HK society, especially following the recent passing of the Advance Medical Directive bill in HK. The HK government owes its citizens a serious discussion on the potential legalization of the practice of euthanasia and the potential barriers and challenges involved.

Mentor: Vardit Ravitsky, PhD, President and CEO, The Hastings Center

Roger Y. Chung, PhD, MHS, is an associate professor at the School of Public Health and Primary Care at The Chinese University of Hong Kong (CUHK). He is co-director of the CUHK Centre for Bioethics and associate director of the CUHK Institute of Health Equity. He received a PhD in social epidemiology from The University of Hong Kong, an MHS from Johns Hopkins Bloomberg School of Public Health, and a BA in public health from Johns Hopkins University. He uses the lens of biomedical ethics to examine the social determinants of health and health inequalities. He has more than 120 peer-reviewed journal publications.

Michelle Anne Cohen, MS, RN

Oppression As Violence

Oppression is commonly understood and experienced as violence by many marginalized persons, however, the idea of "oppression as violence" is still not embraced or prioritized in the field of bioethics, a field that claims to be centrally concerned with issues of justice. The motivation for this capstone follows the dissonance between the intuitive knowledge of lived experience and the limited scope of theoretical academic exercises. This capstone project explored what it means to consider oppression as a form of violence and its relevance for the field of bioethics. Since the capstone cannot cover the totality of "oppression as violence," it focused on the manifestations of this issue in two distinct areas—healthcare and media, both of which significantly impact human flourishing and public narratives. The project incorporated an investigation of the relevant literature and media, and then synthesized the findings into a body of written work. The writing emphasized definitional work and created "thick" definitions of oppression, violence, bioethics, and other related terms. It additionally offered a preliminary investigation into what justice requires for the work of bioethics and beyond. As part of the capstone project, educational materials, such as infographics and primers to promote and aid the teaching of oppression as violence were developed. A key takeaway from this work is that bioethics' strong commitment to justice necessitates a holistic, intersectional, and actionable attentiveness to oppression. Future directions for this capstone include furthering research and narrative work on the topic of oppression as violence, as well as disseminating this topic into the work of bioethics and broader education. As a companion piece to this capstone project, a narrative, multimedia work that includes individuals' lived experiences with oppression will be showcased for a limited time during the month of the capstone presentations.

Mentor: Charlene A. Galarneau, PhD, MAR, Senior Lecturer, Department of Global Health and Social Medicine, Harvard Medical School

Michelle Anne Cohen, MS, RN, is a nurse consultant and case management associate with a background in pediatrics. They earned an MSN at Columbia University's Irving Medical Center and a BS in biology at Boston University. Their research interests in the bioethics community includes the harmful effects of workplace violence on healthcare providers. They are a co-founder of the Harvard Medical School Bioethics Creative Symposium, and their passions include creative approaches to education, bioethics advocacy, and health justice. After graduation, Michelle plans to expand upon her work in bioethics education and activism, healthcare, and creative pursuits.

Nicole “Nikki” Corso, BSN, BS

Should Dispositional Capacity be Considered in the Medically Complex Patient for Discharge?

Dispositional capacity is the capacity in which a patient can take care of themselves competently once they are discharged from the hospital, specifically to their home and not a long-term care facility. This capstone project explored the responsibility of healthcare providers to evaluate the independent capacity of medically complex patients and ensure that the patient is able to self-manage safely once they are no longer in the care of hospital staff. What are the boundaries of the relationship between the in-hospital provider and the patient after hospital discharge? Currently, much of the literature on this subject focuses on mental health patients due to their lapses in decisional capacity. What about the patients who do not lack decisional capacity? As more of the United States population enters their 70s and older, this generation faces the reality that most family members, i.e. caretakers, do not live in the immediate vicinity of each other. Therefore, it is prohibitive to discharge a patient to the comfort of their home if they cannot properly care for themselves. Ensuring a patient’s success once they are discharged means making sure they are properly equipped to care for themselves and capable of using the tools they are given, including activities of daily living and education on the safe management of medication timelines. This Capstone project investigated the existing literature on dispositional capacity and revealed the gaps in the research. One day the gaps this capstone highlighted will create means to better determine dispositional capacity for medically complex patients.

Mentor: David Alfandre MD, MSPH, Associate Professor, Department of Population Health, NYU School of Medicine

Nicole “Nikki” Corso, BSN, BS, is a pediatric cardiovascular intensive care nurse and paramedic. She received a BS in nursing from the University of Texas Health Science Center and a BS in microbiology from Texas A&M University. Her clinical interests include patients with complex congenital heart defects in the neonatal intensive care unit. She thrives in the organized chaos of the intensive care unit and in the back of an ambulance. After graduation, she plans to pursue a career in clinical ethics specializing in medically complex pediatric ethics and neonatal end-of-life patient care.

Dong Dong, PhD

Pediatric Assent and Parental Consent in Early-Phase AAV-Based Gene Therapy Trials: China and US Regulations and Relational Ethics Strategies

This capstone project drew on a select review of literature to examine ethical tensions in early-phase pediatric AAV-based gene therapy trials, which often involve significant risks including immune responses that hinder future treatments. These trials occupy a grey area between research and therapy, especially when they represent the only potential option for children with rare genetic conditions. A key ethical concern is the potential conflict between parental desires and the child's unwillingness to assent, mirroring dilemmas seen in other high-risk, high-uncertainty interventions. Regulatory approaches to managing such conflicts between parent and child, illustrate notable cultural differences between the United States and China. US regulations prioritize pediatric dissent, except when an Institutional Review Board (IRB) determines that direct therapeutic benefits are exclusively available through trial participation. Conversely, Chinese guidelines explicitly permit parents to override a child's dissent in therapeutic trials involving immediately life-threatening conditions. To address these complexities, a relational bioethics approach is proposed to mitigate the conflicts between child and parent in both contexts. This capstone project proposed a three-level strategy emphasizing connections and interactions, interdependence, and reciprocal responsibilities. First, it is important to center the child's voice by ethically prioritizing their perspective in decisions about trial participation and advocating the use of systematic, iterative, child-centered, age-appropriate, and culturally sensitive communication strategies. Second, encourage structured, family-oriented dialogues among researchers, parents, and the child facilitated by techniques such as the "Teach-Back" method making the assent process more dynamic, personalized, and well-documented. Third, highlight the importance of nurturing relational interactions grounded in trust, empathy, and mutual understanding among all stakeholders. Together, these strategies foster collaboration supporting ethical decisions that honor both child and parent in AAV-based gene therapy trials.

Mentor: Lynn Wein Bush, PhD, MS, MA, Instructor of Pediatrics, HMS; PI Scientist, Department of Pediatrics; Faculty, Division of Genetics and Genomics, Boston Children's Hospital

Dong Dong, PhD, is an assistant professor for the JC School of Public Health and Primary Care and a Research Fellow by courtesy for the Centre for Bioethics at The Chinese University of Hong Kong. She holds a PhD in mass communication with a minor in epidemiology from the University of Minnesota, Twin Cities. Her work is grounded in community-academic partnerships focusing on underprivileged and underserved populations, including migrant communities and people affected by rare diseases. She examines reproductive health and reprogenetics through a bioethics' lens, and remains committed to research and engagement for social justice in health.

Lachelle Dufresne, BS

Exploring the Relationship between Surrogate Decision Makers and Physicians in the Pediatric Setting

Pediatrics presents numerous ethical challenges, particularly regarding shared decision-making (SDM) between surrogate decision-makers and physicians. Despite various approaches aimed at addressing these dilemmas, identifying a single framework that effectively addresses every pediatric case remains challenging. This project aimed to compare the outcomes of utilizing both pediatric-specific ethical approaches and a general clinical ethics approach in two pediatric cases. The research involved a literature review comparing the different pediatric approaches, such as the Best Interest Standard (BIS), Harm Principle (HP), Not Unreasonable Standard (NUS), and Constrained Parental Autonomy (CPA). In addition, this project analyzed the general physician-patient relationship using Ezekiel Emanuel's four-model approach, which includes the Paternalistic Model, the Informative Model, the Interpretive Model, and the Deliberative Model. The analysis involved applying these frameworks to two adolescent cases: one in which racial bias potentially impacted patient care, and the other involving concerns of medical abuse. The literature review and case analysis revealed that the CPA approach provided a balanced framework for addressing the physician's fiduciary responsibility to protect the child's welfare while respecting parental rights. Furthermore, Emanual's four-model approach is adaptable to many pediatric situations as the context of decision-making varies. Emanuel's interpretive model was an effective framework in both case analyses. Although ethics literature suggests the general superiority of a particular pediatric approach, the findings of this analysis indicate the importance of assessing each approach's applicability individually. Therefore, the various approaches for dealing with SDM require more than a one-size-fits-all response. To continually optimize shared decision frameworks in the future, ongoing assessments of biases and value judgments provide better guidance for ethical resolutions.

Mentor: Brian M. Cummings, MD, Mass General Brigham

Lachelle Dufresne, BS, is an oncology unit coordinator at Brigham and Women's Hospital. She received a BS in biochemistry and philosophy from Seton Hall University. Her current research focuses on the relationship between physicians and surrogate-decision makers in the pediatric setting. Her most recent publication explores the ethical and constitutional implications of using restraints on pregnant women in prison She is passionate about utilizing both bioethical and anthropological approaches in her ongoing work in healthcare. After completing the MBE program, she intends to pursue an MD-PhD in medical anthropology.

Rami Elzayat, MD

Artificial Nutrition and Hydration at the End-of-Life in Islamic Bioethics

The decision to withhold or withdraw artificial nutrition and hydration (ANH) at the end-of-life is emotionally and ethically fraught. Challenging tensions arise around the proximity to the perceived cause of death, the notion of starvation, and the alleviation of suffering. Western medicine often emphasizes the harmful effects of ANH on dying patients, and various guidelines support its cessation during end-of-life care. Cultural and religious values heavily influence end-of-life decision making. This capstone sought to elucidate Islamic bioethical perspectives on ANH by surveying academic Islamic bioethics literature and exploring Islamic scholarly legal opinions issued via publicly available fatwas (non-binding legal rulings based on Islamic law). This research examined secular academic bioethical literature and medical guidelines to identify important themes and compare them to those in Islamic bioethical literature. The project identified significant gaps in Islamic bioethical literature. Three papers directly addressed the use of ANH for end-of-life care, while four others briefly discussed the topic in the context of end-of-life care. Furthermore, there were three publicly accessible fatwas that specifically addressed ANH. The dominant opinion in Islamic literature is that withdrawing or withholding ANH is generally prohibited, although some scholars acknowledge the need for further research. Much of the literature did not engage with contemporary medical evidence or bioethical themes. The next step of this project is to write a paper that integrates contemporary medical evidence into important bioethical themes of ANH in Islamic bioethics in order to advance discourse within Islamic bioethics and provide more nuanced guidance around ANH withholding and withdrawal for Muslim patients.

Mentor: Aasim Padela, MD, MSc, Professor and Vice Chair of Research and Scholarship, Medical College of Wisconsin

Rami Elzayat, MD, is a critical care physician at the University of Manitoba, Canada (UM). He received a BSc and MD from UM, completed an internal medicine residency at the University of British Columbia, a critical care medicine residency at UM, and a fellowship training in extracorporeal membrane oxygenation at St. Thomas' Hospital in London. He has written and presented on the topics of end-of-life care and Islamic bioethics. His other bioethical interest includes the ethics of advanced life-sustaining technologies. He has received several research and achievement awards throughout his training. After graduation, he will continue writing and researching in the field.

Sarah Lynn Farahani, MS

An Ethics Consult Program for the Vulnerable and Growing Patient Populations in Skilled Nursing Facilities and Extended Care

The primary concerns for ethics programs across acute hospitals in the United States (US) include decision-making for patients without capacity and end-of-life care issues, such as whether to withhold or withdraw life-sustaining treatments. Dementia is the seventh leading cause of death in the US, and advanced stages of dementia disable both decision-making capacity and the ability to tolerate nutrition orally. Currently, many patients with advanced dementia find themselves in skilled nursing facilities (SNFs) or extended care facilities (SNFs), where the presence of an ethics program or specialist is estimated at four percent. This capstone project aimed to develop an ethics program tailored to the specific needs of the residents and staff in SNF healthcare settings. Research efforts included an extensive literature review of the ethics programs from acute hospitals, ICUs, and international SNF and extended care facilities. Interviews were conducted with two teams of SNF leadership in the Los Angeles (LA) area, as well as with leaders of California's Office of the Long-Term Care Patient Representative program, identifying key ethical concerns and needs specific to the SNF setting. Based on these findings and mentor guidance, four Ethics Consult Program (ECP) components were developed including an ECP presentation, an ECP screening form, an ECP flowchart, and an ECP policy and procedure form. Future work for this project involves presenting these components to SNF executives in the LA region, after which one pilot regional program will be initiated, adapted, expanded, and scaled. The implementation of this program aims to increase ethical justice and produce systemic ethical considerations for the healthcare staff as well as the vulnerable and growing population of patients who reside in SNF care settings.

Mentor: Lindsay Semler, DNP, RN, CCRN, HEC-C, Executive Director of Clinical Ethics, Brigham and Women's Hospital

Sarah Lynn Farahani, MS, is a speech and language pathologist at The Californian Rehabilitation Center in Pasadena, California. She received a BA from California State University and a MS in speech language pathology from Loma Linda University. She specializes in geriatric care, including direct dementia and dysphagia therapy with specific interests in end-of-life care and cognitive rehabilitation. She has served as the director of rehabilitation at Alamitos Belmont Rehabilitation Hospital, Courtyard Care Center, and Vertigo Valley Skilled Nursing. After graduation, she will continue developing a model for a bioethical program designed for post-acute rehab and skilled nursing care facilities.

Douglas Ford, BS

In the Era of Quantum Ethics: A Bioethical Framework for Emerging Quantum Technologies

As the dawn of quantum computing approaches, it is no longer a distant possibility, but an imminent reality poised to transform biomedical research and global governance of encryption and artificial intelligence (AI). Quantum technologies bypass encryption protocols, enhance AI, and accelerate biomedical discoveries by solving problems that take classical computers millions of years to resolve. In healthcare, quantum computing promises to revolutionize drug discovery through precise molecular simulations and enable personalized medicine through complex genomic analysis. However, the unprecedented speed and scale of this transformation introduce profound ethical challenges that existing paradigms in bioethics are ill-equipped to address. Without immediate and proactive governance, unchecked quantum technologies exacerbate healthcare inequalities, entrench algorithmic biases, undermine patient privacy, and destabilize global cybersecurity. This project developed a quantum ethics framework to guide these powerful technologies with ethical principles before their societal impact becomes irreversible. A comprehensive narrative literature review drawing from bioethics, AI ethics, and global governance models identified six core principles for responsible quantum development including beneficence, non-maleficence, justice and equity, transparency and explainability, privacy and security, and governance and responsibility. These principles formed the foundation for analyzing ethical dilemmas in biomedical research, quantum cryptography, quantum-enhanced AI, military applications, and emerging fields like quantum cognition. The resulting framework generated actionable recommendations, including the creation of a Quantum Ethics Oversight Board (QEO), the implementation of Quantum Technology Impact Assessments (Q-TIAs), and the negotiation of a Quantum Non-Proliferation Treaty (QNT) to prevent monopolization of quantum power. With quantum technologies nearing real-world deployment, there is an urgent need for ethical foresight. In the era of quantum ethics, this framework emerges as a critical bridge between technological innovation and ethical responsibility, safeguarding human dignity and welfare against the revolutionary tide of quantum potential.

Mentor: J. Wesley Boyd, MD, PhD, Director of Education, Center for Bioethics, HMS

Douglas Ford, BS, is the co-founder and CEO of Chromie Health, a technology startup leveraging artificial intelligence to address the nursing labor shortage crisis. He received a BS from Cornell University. His research explores the role of emerging technologies, including artificial intelligence and quantum computing, in healthcare. His bioethical interests include global health ethics, neuroethics, and human rights. In 2025 he was recognized in the Forbes 30 Under 30 Healthcare category. After graduation, he will scale Chromie Health, drive innovation at the intersection of AI and healthcare, and advance quantum computing research to shape the future of medical technology.

Ursula Francis, JD, PhD, AB

Eugenic Palingenesis: The Compulsory Sterilization of the Disabled from the Progressive Era to the Present

"Three generations of imbeciles are enough." This is the closing line of Buck v. Bell, the infamous Supreme Court case that sanctioned sterilization laws throughout the country and energized the movement to curb the reproduction of the so-called "feebleminded." Far from being a relic of the past, involuntary sterilization of persons with disabilities is still routinely practiced, and legally-sanctioned, in the United States. The aim of this capstone was to interrogate this practice from a cultural, legal, and bioethical vantage by conducting a review of salient literature. This research lays the foundation for a paper arguing that forced sterilization is consonant with a history of intersectional prejudice and dissonant with cherished bioethical principles. To the first point, involuntary sterilization instantiates the "eugenic logic" expressed in Buck v. Bell, albeit shrouded in circumspect rhetoric, making it palatable to a modern sensibility while advancing a similar agenda. This stealth coding is accomplished by shifting the emphasis from societal to individual best interests. To the second, careful analysis shows that forced sterilization contravenes Beauchamp and Childress' four foundational principles of biomedical ethics. It is an infringement on self-governance that conforms to a historical paternalism toward persons with disabilities, especially when it comes to founding a family. Its justification also makes a specious appeal to best interests while in fact enabling their compromise by inflicting dignitary and material harms that outweigh putative benefits. Finally, it is an unjust approach to patient care from the perspective of disability justice and epistemic justice. The paper concludes by proposing reforms of the current medico-legal regime and the cultural coding of disability to align them with the complexity of disabled persons' lived realities and disavow the eugenic mythos of civilizational decline.

Mentor: Charlene A. Galarneau, PhD, MAR, Senior Lecturer, Department of Global Health and Social Medicine, Harvard Medical School

Ursula Francis, JD, PhD, AB, received an AB and JD from The University of Chicago and a PhD in classics from Columbia University. Her work in law and literature focused on advocacy for disadvantaged demographics, including women and persons with disabilities, and the sociology and literary representation of marginalization. Her current research interests in bioethics fall under the carapace of shared decision-making and the ethics of clinical encounters with vulnerable patient populations, to which she takes an interdisciplinary approach. After graduation, she will complete The MacLean Center Full-Time Clinical Ethics Fellowship at the University of Chicago.

Erin Gannon, JD, BA

When Choice Is Not Really a Choice: Autonomy Challenges in Orphan Drug Trials

The prioritization of autonomy as a cornerstone of Western bioethics allows individuals in the healthcare system to feel more empowered in their decision-making. Many individuals with rare diseases, however, face compromised autonomy during the informed consent process because they have limited choices. In the United States, some treatment options come with exorbitant costs and are available exclusively through an Orphan Drug trial, raising concerns regarding the voluntary nature of patient participation. The purpose of this capstone was to guide policy development toward enhancing decision-making autonomy in the informed consent process for participants who face pressures that affect their voluntariness to consider Orphan Drug trials. A literature review exploring the economic incentives driving Orphan Drug trials in pharmaceutical research was followed by an investigation of existing best practices across institutions and regulatory inconsistencies, financial burdens placed on patients with rare diseases, and their potential vulnerability in entering clinical trials. While the project did not demonstrate a direct causal link between pharmaceutical industry financial incentives and diminished participant autonomy, it identified key potential targets for bolstering voluntariness within informed consent processes. Specifically, informed consent policies lack standardization across institutions and studies, which creates inconsistencies with readability, risk disclosure, and participant comprehension. Solutions for addressing these inconsistencies include stronger regulatory oversight of Orphan Drug trials that balances continued research exploration and patient advocacy. Specifically, it is crucial that the Food and Drug Administration and the World Health Organization align with researchers to provide compensation for trial participants. Next steps for this research include conducting patient interviews, extending the data collection period, and examining a global viewpoint. This project offers a timely contribution to the ongoing conversation about ethics and autonomy in clinical research.

Mentor: Missy Heidelberg, MS, Director of Bioethics and Technology Ethics Lead, Chief of Staff, Digital Ethics & Compliance, Takeda Pharmaceuticals

Erin Gannon, JD, BA, is a medical malpractice attorney at Morrison Mahoney, LLP. She received a JD from Northeastern University School of Law with a concentration in health law and intellectual property and her BA in neuroscience and philosophy from Boston University. Her research focuses on the role of health law and intellectual property on autonomy and personhood. She is particularly interested in increasing the understanding of bioethics in law and practically applying ethics to policy changes. After graduation, she will continue to practice law and hopes to begin teaching bioethics and health law to further expand bioethical knowledge.

Mifrah Hayath, MS, BS, BA

Regulating Artificial Intelligence Through the Lens of Idolatry: A Religious Bioethics Perspective

The rapid advancement of Artificial Intelligence (AI) has led to its widespread integration across healthcare, politics, and various other important sectors. While this technological progress implements success, society's growing reliance on AI systems raises critical concerns rooted in religious bioethics. The dynamics of AI advancements mirror religious notions of idolatry, such as the elevation of human-made entities beyond their intended moral and functional boundaries. When algorithms replace authoritative decision-makers, human agency and moral discernment risk displacement. This project draws on religious bioethics, grounded in Islamic, Christian, Jewish, and other faith traditions, to address these challenges and develop a framework for responsible AI policy and governance. Religious critiques of idolatry caution against overreliance on human creations and reaffirm the importance of humility, accountability, and moral responsibility in public decision-making. The research for this project employed a qualitative theoretical analysis of religious texts, theological ethics, and contemporary AI literature. Using comparative thematic analysis, research results identified similar concerns across religious traditions regarding delegated authority and moral boundaries, then synthesized these themes into a normative ethical framework that incorporates religious and moral reasoning with current debates on AI oversight. This interdisciplinary inquiry revealed specific policy mechanisms such as mandated human oversight in automated decision systems, legally enforceable algorithmic transparency standards, institutionalized ethical impact assessments, and the formal inclusion of interfaith ethics boards within national and global regulatory bodies. These proposals reflect a governance model rooted in religious bioethical pluralism, combining procedural accountability with moral and spiritual guidance. Centering religious bioethics in AI regulation fosters a more inclusive, ethically grounded discourse that addresses systemic harms, particularly to vulnerable individuals and marginalized communities disproportionately affected by algorithmic bias, surveillance, and exclusion. This approach underscores the need to balance innovation with responsibility, ensuring AI serves humanity without becoming an object of misplaced trust.

Mentor: Roberto Sirvent, JD, PhD, Center for Bioethics, Harvard Medical School

Mifrah Hayath, MS, BS, BA, is a teaching fellow and research assistant at Harvard University. She received an MS in biotechnology from Johns Hopkins University, a BS in molecular toxicology, and a BA in bioethics from the University of California, Berkeley. Her research spans AI ethics, organ trade policy, and health equity. She is involved in projects related to deep learning applications for Alzheimer's diagnosis and the ethical implications of emerging technologies. She has published on AI in healthcare and cultural relativity and acceptance of embryonic stem cell research. Upon completing the MBE, she will pursue doctoral studies.

Rachel Ingraham, BA

Implementing the Armstrong Clinical Ethics Coding System: A Multi-Institution Collaboration to Standardize Ethics Consultation Data Capture

The scope and nature of clinical ethics consultation is historically difficult to capture and, subsequently, it is nearly impossible to share and compare this important data among clinical ethicists across various institutions. From the perspective of reproducible research, identifying patterns and clinically specific themes within the effective practice of clinical ethics consultation helps increase the field's capacity to demonstrate its value to clinical leaders and colleagues alike. To address this challenge, clinical ethicist Kelly Armstrong created the Armstrong Clinical Ethics Coding System (ACECS). ACECS enables ethicists to characterize consults with a code-book that features common clinical ethical issues, identifies the locus of conflict, and designates a form of intervention. This capstone explored the benefits of ACECS and its implementation across multiple institutions. The accompanying research included a literature review to explore the benefits and drawbacks of coding systems, the standard mechanisms used to capture and transmit consultation data, and the current state of clinical ethics consultation in the US. Additional work involved establishing a collaborative effort among clinical ethics leaders at seven Boston-area hospitals, which resulted in five monthly meetings between December 2024 and April 2025. During these meetings, members coded cases using the ACECS system and discussed questions regarding both ACECS itself and the real-time challenges that emerged while using the system. Furthermore, this capstone yielded meta observations of conversations that occurred during collaboration and process implementation, thereby serving as a case study on the social dynamics present during the process of translating normative ethical theory into the applied practice of bioethics.

Mentor: Michael Ieong, MD, Assistant Professor of Medicine, Boston University Chobanian & Avedisian School of Medicine

Rachel Ingraham, BA, is an MD/MBA candidate at Boston University's School of Medicine and Questrom School of Business. She received a BA in molecular biology from Hampshire College. She worked as a patient advocate at Boston Medical Center and served on the Ethics Committee, Ethics Consult Team, and the Ethics Structural Racism Subcommittee. Her interests include end-of-life communication, ethics consultation, epistemic injustice, and surgical ethics. She was awarded best oral presentation at the National Student Bioethics Association, an American Medical Association Physicians of Tomorrow Award nominee, and Gold Humanism Honor Society inductee. Upon graduation, she will start her surgical residency.

Risa M. Jampel, MD

Artificial Intelligence Assisted Mammography: Is it Ethical to Charge an Out-of-Pocket Fee?

Artificial intelligence- (AI) powered devices are becoming commonplace in clinical care, including assisting radiologists to read mammograms. The ethical implementation of AI is necessary to ensure equity, adequate AI oversight, and patient agency. This capstone project explored the possible ethical gaps of for-profit radiology groups using AI-assisted devices at annual mammogram screenings for an out-of-pocket (OOP) fee. These devices are authorized by the Food and Drug Administration (FDA), but are not proven to decrease morbidity or mortality in women. As AI-assisted care becomes available to patients, it is ethically relevant to consider the out-of-pocket (OOP) fees. The research included a review of literature on two sets of AI ethical guidelines, a physician-based and a patient-based advocacy group, and journalistic style conversations with three radiologists, a breast cancer survivor, and two industry scientists with ethics training who work in device development. Several consistent ethical gaps were present, such as lack of transparency, no clear benefit to patients, lack of equity and fairness, and lack of accountability. Patients did not have access to informational materials regarding AI-assisted care and did not have opportunities to speak with educated staff about possible risks, benefits, or information on the use of their data. If AI-assisted mammography is better for patients, then limiting its use to those who pay the OOP fee is not equitable. The FDA does not require continued validation of AI algorithms, nor does it have a proactive post-marketing review program thereby reducing accountability. To address the ethical gaps in AI use in clinical settings, providers need to give patients accurate and easily understandable information. If AI-assisted mammography proves to be superior to the standard of care, it should be available to all women without additional cost to prevent furthering health inequities.

Mentor: Rebecca Li, PhD, CEO, Vivli

Risa M. Jampel, MD, is a board-certified dermatologist. She received a BA in chemistry from Queens College, City University of New York, and an MD from Yale University. She completed a residency in dermatology at the Johns Hopkins University School of Medicine. She has practiced dermatology at two major academic medical centers in Baltimore, in a private practice setting, and with a private equity group. Recently, she initiated the quality program for the University of Maryland Department of Dermatology. After completing the MBE program, she plans to explore the impact of artificial intelligence devices on the everyday clinical encounters of practicing medicine.

Zain Khalid, MBBS

Coercion in Psychiatry: A Plan for Ethical Reform

Civil commitment is the legal and clinical practice of involuntary psychiatric hospitalization, which disproportionately impacts economically disadvantaged and racially minoritized individuals with mental illness. Civil commitment rates continue to rise across the United States, with several recent high profile policy initiatives expanding its use. The inequities associated with the application of this coercive practice remain poorly investigated, which is particularly concerning given the potential risks for lasting iatrogenic harm to patients and the moral distress to providers. Using a narrative review of biomedical and adjacent literatures, this capstone aimed to understand the over-representation of disempowered populations among the civilly committed as a result of implicit clinical biases in diagnosis, risk assessment, and decision-making. The capstone proposed an alternate, ethically restorative approach to civil commitment rooted in a virtue-ethics, communitarian, feminist, and structuralist critique of liberal notions of autonomy. These theoretical frameworks advance actionable solutions in clinician training to recognize implicit bias, the use of actuarial risk assessment instruments to mitigate against unstructured, bias-prone approaches, and a novel, structured educational tool for clinicians to aid ethically consistent and structurally informed decision-making in civil commitment procedures. Furthermore, the capstone identified a dearth of data exploring the problem of disparities in civil commitment application, and the need for more evidence-informed policy approaches for reform. Beyond clinician level strategies, the capstone concludes with policy recommendations for a national and state-level shift away from purely dangerousness-based justificatory criteria for civil commitment to accommodate more context-sensitive models that are inclusive of patients' lived experiences, social flourishing, the treatability of underlying illnesses, structural positionality, and clinician autonomy.

Mentor: John R. Peteet, MD, Associate Professor of Psychiatry, Harvard Medical School

Zain Khalid, MBBS, is an assistant professor at Brown University's Department of Psychiatry and Human Behavior. He received an MBBS from Aga Khan University, completed a psychiatric residency at Rutgers New Jersey Medical School where he was chief resident, and completed a forensic psychiatry fellowship at Brown. His recent work focused on underserved and justice-involved individuals with serious mental illness; and was recognized by the American Psychiatric Association and the Association for Academic Psychiatry. His bioethics interests include psychiatric ethics and structural competency in healthcare. Following graduation, he will complement his clinical roles with consultative, pedagogic, and policy work in medical ethics.

Deborah Kozik, DO, FACS

Insights from a Qualitative Inquiry: The Role of Hospital Ethics Committees in Pediatric Surgical Practice

Surgical ethics possesses several distinct characteristics that differentiate it from general medical ethics, particularly regarding the surgeon-patient relationship. These include the inherent harm caused by surgical interventions and the surgeon's unique role as a potential "rescuer" in critical situations. Surgical practice relies not only on technical expertise and knowledge, but also on nuanced ethical judgment. When combined with the complexities of pediatric ethics, such as issues of consent, parental involvement, and evolving autonomy, these challenges become even more pronounced for pediatric surgeons. This project had two primary aims: to explore the relationship between pediatric surgeons and hospital ethics committees, and to gain experience in qualitative research methodology. A mixed-methods approach was employed, beginning with a focus group to inform the development of interview questions. These questions were used in semi-structured interviews with pediatric surgeons. Preliminary analysis revealed three key themes: a limited understanding of the role hospital ethics committees plays in the care of pediatric surgical patients, a perceived value in regular interdisciplinary discussions around ethically complex surgical cases, and a frequent reliance on individual ethical judgment during urgent or high-stakes situations. Participants expressed interest in developing ethics guidelines tailored to recurring, complex scenarios encountered in pediatric surgery. The next phase of this project involves designing and distributing a national survey to a larger cohort of pediatric surgeons. The goal of this survey is to refine and expand upon the identified themes, and clarifying how hospital ethics committees can best support pediatric surgeons, identifying case types where ethical guidance is most needed, and fostering improved interdisciplinary communication.

Mentor: Piroska Cornell Kopar, MD, MBA, FACS, Associate Professor of Acute & Critical Care Surgery, Washington University Saint Louis School of Medicine

Deborah Kozik, DO, FACS, is a congenital heart surgeon at Norton Children's Hospital and the University of Louisville as well as a Fellow of the American College of Surgeons (FACS). She received a DO from the New York College of Osteopathic Medicine and a BS from Ohio University. She completed a general surgery residency at Brookdale University Hospital in Brooklyn, a cardiothoracic surgery residency at the Medical College of Wisconsin, and a fellowship in congenital heart surgery at Children's Hospital of Colorado. Her clinical work focuses on neonatal and pediatric heart surgery and transplant. After graduation, she plans to continue researching the intersection of empirical ethics and surgical ethics.

Brenda Zanele Kubheka, MD, MBA

Ethical Considerations for Digitizing Medical Records for National Health Insurance in South Africa

The digitization of medical records is critical for implementing South Africa's National Health Insurance Scheme (NHIS) and pursuing Universal Health Coverage. However, ethical considerations remain underexplored. Electronic Medical Records (EMRs) are essential for managing users and healthcare service providers and facilitating access to benefits, data storage, record portability, and enhancing efficiencies in low-resourced health systems. The adoption of EMRs in low-to-medium-income countries like South Africa (SA) is slower due to a lack of coordinated digitization efforts, costs, policy gaps, infrastructures, and human resource challenges. SA's two-tiered healthcare system consists of a well-resourced private health sector serving nearly 20% of the population while accounting for more than 50% of the nation's health expenditure. Without an ethical framework to guide the transition to digital records across sectors, equity-driven data practices, such as the standardization of demographics and interoperability, remain unenforced perpetuating disparities in a country with the world's highest income inequality. Through a narrative literature review and thematic analysis, this capstone project examined the ethical considerations surrounding EMR digitization, and how it aligns with SA's constitutional values of dignity, equality, human rights, non-racialism, and non-sexism. The recurring themes of this project included EMRs as a public good, a catalyst for justice, an enabler for human rights protection, an administrative tool, and a clinical tool enhancing research. The study critiqued high-income countries' EMR models that prioritize autonomy over solidarity and promote an equity-centered and human rights-based design, implementation, and monitoring system, including stratified data collection on social determinants of health to address disparities. In conclusion, embedding equity-driven demographic data standards into SA's EMR framework will avoid institutionalizing disparities and systematically undermining NHIS's equity and social solidarity values.

Mentor: Marietjie Botes, B Proc, LLB, LLM, PhD, Postdoctoral Research Fellow, University of Stellenbosch, South Africa

Brenda Zanele Kubheka, MD, MBA, is the managing director of Health IQ Consulting and a part-time senior lecturer at Sefako Makgatho Health Sciences University (SMU). She holds an MD from SMU, an MBA from the University of Pretoria, and a certificate in media and medicine from Harvard Medical School. She specializes in clinical risk management, ethics advisory, and leadership development. She has published peer-reviewed articles on patient safety, diversity, inclusion, and the intersection of social media and healthcare. Her bioethical interests encompass social justice, digital ethics, and clinical ethics. She plans to pursue a PhD in digital ethics, and advance bioethics advocacy in South Africa.

Eva Lechleitner-Reinelt, MD

The Vulnerability Perspective: A Chance for Physicians to Reimagine Themselves, Their Patients and Their Shared Therapeutic Relationship

Health care, like society in general, is pervaded by power imbalances and structural inequities, even in social market economies like Austria. Vulnerability as a context-sensitive concept simultaneously allows for a panoramic view of disparities in care, including an individualized, dynamic assessment of who is vulnerable and under what circumstances. This capstone project aimed to consider the potential benefits for physicians to adopt a "vulnerability lens" to mitigate bias and increase awareness for health inequity, structural barriers to care, and the embedded, interconnected social nature of individuals. To explore these ideas in practice, ten Austrian family medicine residents enrolled in full-day immersive experiences in community settings outside the hospital. Participants engaged with potentially vulnerable patients in an unfamiliar, yet supportive setting such as joining an employment project for people with disabilities or a harm reduction center for individuals with substance use disorder. Residents' perspectives were recorded through on-site journaling and qualitative individual, in-depth, semi-structured interviews. Preliminary analysis of the transcripts yielded reoccurring themes across interviews. Specifically, participants reported an emerging vulnerability lens when looking at patients, greater humanization of vulnerable individuals, appreciation of the importance of trust and adequate communication in patient-provider relationships, enhanced reflective capacity of physicians' own professional roles, and deepened deliberation on the place of individuals within the health care system. This last aspect pertained both to the role of professionals as members of the healthcare system and the difficulties in fulfilling the needs of patients who experience limitations in access to standard care services. Further analysis will generate insights on how this experiential education shaped participants' perception of their own, and their patients', vulnerability and aim to connect these perspectives to other meaningful aspects of their profession.

Mentor: Marta Fadda, PhD, MBE, Senior Researcher and Lecturer, Institute of Family Medicine, Faculty of Biomedical Sciences, Università della Svizzera Italiana

Eva Lechleitner-Reinelt, MD, practices family medicine in Innsbruck, Austria. She received her MD from Innsbruck Medical University. She supports the palliative care team at Innsbruck University Hospital, works at a local family medicine practice, and serves as a clinical consultant at a low-threshold, harm reduction healthcare facility. Her goal is to strengthen interdisciplinary, multi-professional ethical decision-making and to further implement bioethics in primary care and residency. In 2019 she was awarded the Lore Antoine Prize on *Gender Medicine* for her thesis. After graduation, she plans to bring a bioethical lens to clinical practice and engage in ethics education.

Jonlyn Miller, RN-BSN, BS

Distributive Justice: An Examination of Moral Distress in School Nurses

Moral distress is a central focus of bioethics, specifically in how it affects individuals in the clinical environment. However, moral distress is also a feature in healthcare settings outside of hospitals such as home healthcare, clinics, and schools where nurses, physicians, and other healthcare providers strive to help people. For example, school nurses often experience moral distress due to inadequate time, lack of resources, and conflict among multiple stakeholders including parents and administration. The purpose of this project was to further characterize the experience of moral distress in school nurses. This research entailed a scoping literature review of papers relating to moral distress and school nursing, both independently and combined. The review found that the overlapping literature was sparse with only three studies directly related to the ethical inquiry into the school nurse population, and one review published in 2017 that focused on moral distress. The papers suggest that the factors inducing moral distress in nurses vary significantly and impact school districts' ability to staff nurses, students' ability to receive prompt and appropriate care, and school nurses' ability to perform their work at the highest level. Given the drastic changes in both the healthcare and education sectors since the COVID-19 pandemic, there is a pressing need for updated research to understand the current causes and impacts of moral distress in school nurses. The observations from this research and personal experiences constructed a narrative for a manuscript that has been accepted for publication in the Narrative Inquiry in Bioethics journal.

Mentor: Melissa Uveges, PhD, MAR, RN, HEC-C, Assistant Professor, Connell School of Nursing, Boston College

Jonlyn Miller, RN-BSN, BS, is the nursing practice and policy specialist for National Nurses United, the largest nursing union in the United States. Previously, she served as an in-patient nurse for medically complex children and as a school nurse for Chicago Public Schools. She received a BS in health administration from the University of Illinois and a BSN from the University of Tennessee Health Science Center. Her bioethical work uses a narrative approach to explore structural factors that induce moral distress in clinicians, particularly those working in non-clinical environments. Upon graduating, she plans to fight for better working conditions for nurses everywhere.

Patrick Mott, MA, BA

Medico-Legal Distress: Exploring the Intersection of Moral Injury, Medico-Legal Interactions, and Physician Wellness

Medico-legal interactions, such as regulatory complaints and civil actions, often provoke significant distress among physicians. While physician wellness receives increasing attention, the moral injury they experience in the context of medico-legal interactions remains underexplored. The goal of this project was to explore the intersection between adversarial medico-legal interactions and moral injury, as well as to identify possible strategies to mitigate moral injury when physicians navigate medico-legal encounters. A literature review included relevant peer-reviews and grey publications from both the United States and Canada. The review found that the adversarial nature of medico-legal interactions often disrupts physicians' sense of professional integrity and ethical identity, leading to experiences of moral distress that, when unaddressed, can develop into moral injury. The review also identified a need for systemic changes that lessen the current adversarial nature of physician regulation. The findings suggest that moral injury in the context of medico-legal interactions is not a matter of individual vulnerability, but rather a systemic ethical issue that requires institutional attention. Addressing this challenge requires regulatory bodies, healthcare institutions, and physician wellness initiatives to recognize the ethical impact of adversarial regulation. Future efforts include prioritizing structural reforms that promote a people-centered model of compassionate regulation, and contributing to the development of restorative accountability models of physician regulation. By reframing medico-legal distress as both a wellness and ethical concern, this project contributes to an emerging conversation on how to support physicians in delivering high-quality care while maintaining moral integrity when faced with adverse medico-legal circumstances.

Mentor: J. Wesley Boyd, MD, PhD, Director of Education, Center for Bioethics, Harvard Medical School

Patrick Mott, MA, BA, is a professional conduct investigator at Extendicare Canada and leads its corporate whistleblower program. He received a BA in criminology and law from Ryerson University in Toronto, Canada and an MA in criminology from the University of Ottawa. His master's thesis focused on the intersection of criminal law and physician negligence. His interest in bioethics focuses on physicians' experiences of medico-legal issues, particularly in relation to moral distress and burnout. He has published research on charting practices in the context of HIV criminalization in the state of Georgia. After graduation, he plans to pursue law school.

Grace Wankiiri Orsatti, JD

Addressing the Medicolegal Needs of Unrepresented Patients through Healthcare Agent Matching Programs

Medically complex patients experience detrimental health consequences when unable to make their own medical decisions and have no surrogate to make decisions on their behalf (i.e., unrepresented individuals). The aim of this capstone was to identify the harms that such unrepresented individuals experience when they lose decision-making capacity regarding their healthcare needs, and to propose interventions to mitigate such harm, with a particular focus on developing a healthcare agent (HCA) matching program. A narrative literature review revealed that individuals who lack a surrogate decisionmaker face both bioethical and legal disadvantages due to their lack of a healthcare proxy. For example, unrepresented individuals experience delayed discharge, inconsistent and variable care, and an increased likelihood of receiving treatment not in accordance with their preferences, which is an affront to their autonomy. Additionally, the lack of a surrogate decision-maker results in longer hospital stays and poorer health outcomes. This capstone identified potential solutions, including assessing incapacitated individuals' previously stated preferences for medical care, increasing living will preparation by unrepresented individuals, and improving the education and preparation of court appointed guardians. The establishment of an HCA matching program is expected to circumvent the need for these potential alternative solutions by matching unrepresented individuals with trained volunteer healthcare agents who understand their care wishes. The research results recommended that community groups and healthcare institutions collaborate to develop or support HCA matching programs as a valuable tool to decrease the harm suffered by unrepresented individuals. This capstone included presentations to the Pennsylvania Advisory Council on Elder Justice in the Courts, and leadership of a community health organization, Jewish Healthcare Foundation, to propose development of HCA matching programs, with additional presentations scheduled this year.

Mentor: David Sontag, JD, MBE, HEC-C, Senior Associate General Counsel and Director of Ethics, Beth Israel Lahey Health

Grace Wankiiri Orsatti, JD, is director of the Wills and Healthcare Directives Clinic and Pro Bono Program and assistant clinical professor at Duquesne Kline School of Law. She received her JD from Duquesne Kline School of Law. Her work is centered on aging, the law, and advancing justice through pro bono, interdisciplinary, and experiential learning initiatives. Her scholarship examines the legal and bioethical aspects of end-of-life planning, aging, and health. She will next transition to an associate professor position at Syracuse University College of Law where she will focus on bioethics, health and estate law, as well as incapacity and end-of-life planning.

Geoffrey T. Pack, MALD, MSc

Bioethics and Religion in the Public Square: Progressive Theology on the Road Less Taken

Progressive leaders and members of the US Episcopal Church (TEC) continue to contribute to public discussions on the role of religion in addressing controversial views in bioethics. These progressive Episcopalian views are often contrary to better-known but more conservative faith-based positions, which are generally not shared by most Americans. Unlike their conservative counterparts, TEC endorses pro-choice positions on abortion and other controversial health-care policies, such as medical aid in dying and selected reproductive technologies. This distinction between progressive and conservative faith-based positions, especially when both groups claim common Christian origins, presents a challenge to TEC. This project examined this challenge, which continues to steer Episcopalians onto a road less taken in the public square. TEC fails to leverage their more popular, although progressive, religious views and needs to develop better bioethics advocacy and public engagement tools. The project included a literature review and interviews with Episcopalian leaders and members. These revealed that Episcopalians favor contemporary social justice theories, evidence-based thinkers, and positions which often stem from secular and scientific sources. However, these views often fail to resonate as sufficiently faith-based or religiously informed when they inform our public debate or gain media exposure. TEC needs a better approach to effectively contribute to a robust moral discourse that would enhance their bioethics advocacy efforts and support broader religious appeal. Episcopalian leaders generally agreed with this, but claimed an inability to address the greater numbers, strident voices, populist support, and widespread cultural exposure their conservative counterparts enjoy. Proposals for addressing this challenge included a targeted approach to advance their progressive messages, use of enhanced language, and reorienting their internal audience satisfaction to communicate their positions with visible and faith-based external partners.

Mentor: John D. Halporn, MD, Associate Physician, Hospitalist Service, Brigham and Women's Hospital

Geoffrey T. Pack, MALD, MSc, is a retired naval officer, former city government official, and currently serves on the University of California (UC) Board of Regents. He received an MALD in foreign affairs from the Fletcher School of Law and Diplomacy at Tufts University, and an MSc in medical anthropology from Durham University in the UK. He received an honorary knighthood from Queen Margrethe of Denmark for his contributions to Danish and American security cooperation. After graduation he will continue to focus on the intersection bioethics and enhanced delivery of community health and social services.

Mario J. Padron, DO, JD, MPH, MHL

An Ethical Argument for Psychiatric Deinstitutionalization Using the Concept of Contextualized Autonomy

Individuals with severe mental illnesses face socioeconomic disadvantages, unemployment, and existential struggles. Psychiatric deinstitutionalization, a practice established in the 1950s, aimed to reintegrate these individuals into communities. However, the implementation of this practice encountered significant challenges due to under-prepared community services. Deinstitutionalization, coupled with appropriate community-based mental health care, improves daily functioning, quality of life, and social inclusion. There is a lack in published literature regarding a comprehensive ethical argument supporting deinstitutionalization. This project developed an ethical argument in favor of deinstitutionalization using the concept of contextualized autonomy, which is an ethical framework that prioritizes autonomy while recognizing the need for contextual determination. Contextualized autonomy emphasizes the abilities of self-control, information, and authenticity. To achieve this aim, the project conducted a scoping literature review using the Arksey and O'Malley framework. It identified relevant studies through PubMed searches, combining medical subject headings and keywords related to psychiatric deinstitutionalization and ethics. Study selection focused on articles published from 2009 to the present, discussing autonomy among individuals with mental illnesses. The project structured data extraction around the links between deinstitutionalization, contextualized autonomy, and well-being. Deinstitutionalization and contextualized autonomy both recognize the primacy of autonomy and allow for holistic recovery. Deinstitutionalization promotes self-control through goal management programs and meaningful daily activities, information via shared decision-making processes, and authenticity by encouraging meaningful life trajectories aligned with personal aspirations. These contributions foster the well-being of individuals with severe mental illnesses. The project concludes that deinstitutionalization, coupled with appropriate community-based mental health care, is ethically desirable as it promotes contextualized autonomy and thereby enhances well-being.

Mentor: Ingrid A. Holm, MD, MPH, Endowed Chair in Genetics and Genomics, BCH

Mario J. Padron, DO, JD, MPH, MHL, is a physician specializing in the field psychiatry. He earned a BA in physics and economics and a JD from the University of Florida, a DO from Des Moines University, an MPH from the George Washington University, and an MHL from Brown University. He served as a commissioned officer in the United States Marine Corps, where he earned the rank of Captain. His clinical interests include neurodevelopmental and addiction psychiatry. Upon graduation, he plans to further contribute to the field of bioethics with a particular focus on issues related to involuntary treatments in psychiatry.

Lucy Chaya Panko, HBA

Voluntarily Stopping Eating and Drinking (VSED) and Mental Illness: Rethinking Access, Ethics, and the Weight of Stigma

Voluntarily Stopping Eating and Drinking (VSED) is an increasingly prevalent pathway to hastening death. VSED involves the deliberate, self-initiated stopping of eating and drinking in response to intolerable suffering. In most jurisdictions, VSED is considered a legal and ethically sound end-of-life option, distinct from other methods of hastening death, such as medical assistance in dying (MAiD) or euthanasia. As with the MAiD discourse in Canada, special considerations arise when a person with mental health concerns seeks to hasten their own death. These concerns are also relevant in the case of VSED. This project explored many of the prevailing attitudes regarding the implications of mental health concerns on access to VSED. Following a preliminary literature search, research efforts included ten interviews (90 to 120 minutes each) with a range of interested stakeholders such as palliative care providers, lawyers, philosophers, psychiatrists, death doulas, and family members. These interviews were part of a larger effort to create a short educational documentary. During the editing process, several prevailing themes emerged including relational autonomy, burdensomeness, medicalization, and paternalism. Following transcription, further work involved selecting key quotations for inclusion into a "parent document" to establish a narrative for the film, which will contain audio recordings overlaid with videos and photographs. In addition to disseminating the short documentary, future work will consider other ways to engage with the topic of VSED, including generating scholarship from the completed interviews and publishing a literature review.

Mentor: Hope Wechkin, MD, Medical Director, EvergreenHealth Home Health and Hospice Care; Clinical Faculty, University of Washington School of Medicine

Lucy Chaya Panko, HBA, received a BA with a specialization in public health from the University of Toronto. Her work is centered on psychiatric ethics and end-of-life ethics, both separately and where they intersect. This has included work on terminal anorexia, palliative psychiatry, and the implications of mental health concerns on hastening one's death. She is invested in leveraging the patient voice through narrative methods and creative approaches to knowledge translation. Following graduation, she plans to continue her work in clinical ethics and medicine by investing her time to serve equity-seeking populations.

Emily Pellegrini Olson, BS, MEng

Freak Show: How Monsterization, Isolation, and the Lure of Neurotypicalism Perpetuate Systemic Neglect of Disabled Adults with Cerebral Palsy

A growing number of children with cerebral palsy (CP) survive into adulthood. However, the transition of care between pediatrics and adult medicine is fragmented, and the care model does not match the multi-faceted needs of patients with CP as they age. Currently, there is limited normative-theoretical work focused on the social model of disability, particularly as it applies to individuals with CP who require a transition in care. Additional care gaps for patients with CP include the ways in which treatment of disability is informed by historical representations of dehumanization. The objective of this capstone was to clarify the primary challenges faced by young adults with CP transitioning from pediatric to adult care. The research methods included a literature review, a policy review of transitional disability care paradigms, and qualitative interviews with physicians. The results revealed that the present method of transitioning care from pediatric patients with CP into adult services are ineffective. Three major factors that contribute to the transitional care gap include: physician reluctance to address the needs of adult patients with disabilities, limited funding of disability research, and lack of a gold standard for transitioning patients into adult programs. This research pinpointed potential solutions for improving care for adult patients with CP, which involves increasing physician exposure to patients with disabilities during medical training, increasing federal grant funding, and creating a standardized process for transitional care programs. The next steps include advocating for patients with CP to access dedicated care throughout their lifetime by developing tools specific to transitioning pediatric patients into adult care, incorporating a disability ethics framework into practice, and encouraging federal research funding.

Mentor: Thos Cochrane, MD, MBA, Director of the Online Fellowship Certificate Program and Co-Director of the Fellowship in Bioethics, Center for Bioethics, Harvard Medical School

Emily Pellegrini Olson, BS, MEng, is a senior clinical research specialist at Medtronic. She received a BS in neuroscience from Tulane University and an MEng in healthcare systems engineering from Lehigh University. At Medtronic she concentrates on the development of neurosurgical technologies. Her bioethics interest focuses on neuroethics and robotics. She has authored 20 peer-reviewed publications on machine learning and received a Star Research Achievement Award for excellence from the Society for Critical Care Medicine. After graduation, she will present her Capstone research at the International Conference on Clinical Ethics and Consultation in Switzerland and continue clinical research at Medtronic.

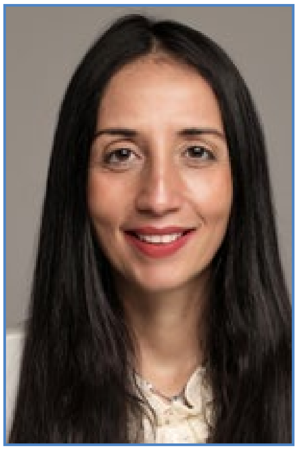
Caroline Petit, MSc, MPhil, MBA, LLM

Leveraging Patient Data in Pharmaceutical Projects Involving AI Features: An Ethical Perspective Navigating EU and US Legal Frameworks

Clinical patient studies are widely leveraged in the pharmaceutical industry. The widespread use of artificial intelligence (AI) necessitates that organizations improve their solutions to protect privacy while sharing data on AI initiatives involving patients' data monitoring. The goal of this project is to expose the significant gaps that exist in current data privacy laws in both the United States (US) and Europe, which risks the confidentiality of patients' medical records leveraged in scientific projects. The research process involved a review of the literature regarding "trustworthy" AI as defined in the legal frameworks of the US and Europe, including an inventory of gaps in the Health Insurance Portability and Accountability Act (HIPAA) and General Data Protection Regulation (GDPR) legislation. This legislation informed the analysis of a case involving patients using an AI-featured device, referred to as a tool, to monitor their hyperactivity disorder (ADHD) treatment. As a basis of the ethical comparisons, the project explored the implementation of the Altai principles of respect for autonomy, non-maleficence, beneficence, and justice, followed by Floridi models. More specifically, GDPR 89 highlights the gaps in interpreting GDPR and HIPPA when using patients' health data with an AI tool across European jurisdictions. The outcome of this project proposes several avenues to improve the ethical fundamentals of similar scientific AI-related initiatives and reinforces the legal governance, guaranteeing better protection of patients' information in both regions.

Mentor: Lisa Lehmann, MSc, MD, PhD, Medical Director of Research, Verily

Caroline Petit, MSc, MPhil, MBA, LLM, received an MSc and MPhil from the University of Grenoble in France, an MBA from HEC Geneva Switzerland, and a law degree from Singapore's Assas International School. She has a long history in the pharmaceutical industry improving patient quality of life through research, strategic marketing, patient support and services, and regulatory roles. She is a member of the Forbes Business Council, named 2024 CIOLook Magazine's 10 most Visionary Pharmaceutical People, and one of 200 most powerful global female leaders in 2025. After graduation, she will focus on bioethics and artificial intelligence, law, and ethics.



Kristin Reische, MSN-Ed, BSN, NPD-BC, HEC-C

The Moral Imperative of Moral Distress: Improving Outcomes Through a Moral Distress Workshop

Moral distress is a phenomenon common amongst healthcare workers, especially nurses. First defined in 1984, it occurs when an external constraint places limits on an individual's ability to respond according to their personal values, resulting in psychological distress. Research surrounding moral distress, such as its impact on healthcare and interventions to mitigate negative outcomes, has significantly increased since the COVID-19 pandemic. Moral distress is linked to increased mental health issues including depression and burnout as well as decreased healthcare worker retention and poor patient outcomes. Interventions primarily focus on education and improved access to mental health services, with much of the literature available supporting the implementation of a multimodal approach to combating moral distress in health care workers. The aim of this project was to determine the effectiveness of a four-hour workshop in reducing reported moral distress symptoms, improving resiliency, and increasing ethical decision-making confidence in health care workers who participated. The workshop included a total of 99 healthcare workers, comprising registered nurses, chaplains, and a respiratory therapist, who participated in an educational session about moral distress. The program included information about the psychophysiological causes of moral distress, ethical decision-making, resilience, and tools and resources available to support them. Participants completed a pre-assessment and were sent reflective follow up assessments at one, three, and six months. Seventeen individuals completed the one- and three-month assessments. Cumulative results of all completed assessments demonstrated an increased ability to navigate moral decision-making and a decrease in reported intent to leave. However, these results were not replicated when narrowing analysis to only those who completed the first three assessments. Implications for future study include further analysis of returned assessments, larger sample sizes, and the exploration of shorter, accessible, and more frequent interventions.

Mentor: Lindsay Semler, DNP, RN, CCRN, HEC-C, Executive Director, Ethics Service, Brigham and Women's Hospital

Kristin Reische, MSN-Ed, BSN, NPD-BC, HEC-C, is a nurse educator and the chief health care ethics consultant at South Texas Veterans Health Care System. She received a BSN from Bradley University and an MSN in nursing education from Texas A&M Corpus Christi. As an educator, she is responsible for the orientation and continuous professional development for nurses and paraprofessionals. In her role as chief consultant, she leads a multidisciplinary team in responding to ethical concerns. She is interested in healthcare ethics and nurse involvement in ethical decision making. After graduation, she hopes to further research into moral distress interventions.

Amy Rogers, BSN

Dispositional Capacity: Navigating the Complexities of Challenging Discharges

Healthcare practitioners increasingly face complex and difficult discharge situations while dealing with pressures from Medicare to reduce the length of hospital stays. American hospitals use an informed consent framework to determine a patient's capacity to participate in discharge planning. Generally, physicians consider patients capable of consenting to discharge plans, including patients with mild cognitive impairment who wish to participate and maintain a maximum level of autonomy. Questions arise regarding whether patients with mild cognitive impairment can fully understand and weigh the benefits and risks of returning home. This capstone identified the gaps in available guidance and regulations regarding difficult discharge situations, and examined the utilization of the current informed consent framework for purposes of determining dispositional capacity. Physicians typically conduct dispositional capacity assessments; however, the ambiguity surrounding the concepts of safe discharge, informed consent, and dispositional capacity contribute to the challenges of complex discharges. This often leads to discharging patients to their home environment despite uncertainties regarding safety and available resources. Research efforts included a scoping literature review to identify current legal, regulatory, and ethical frameworks related to dispositional capacity and discharge planning. Subsequent research examined systematic literature reviews to determine how regulatory bodies define discharge planning and the assessment of dispositional capacity, with the conclusion that little guidance was available. Future directions for this project involve reevaluating the current practice of complex discharges by regulatory bodies and professional societies, optimizing community and institutional supports, and providing viable alternatives to long-term care that uphold respect for patient autonomy and ensure safety.

Mentor: Anca Dinescu, MD, HEC-C, Ethics Consult Service Coordinator, Washington DC Veterans Administration Medical Center, Assistant Professor Geriatrics and Palliative Medicine, George Washington University

Amy Rogers, BSN, is a consumer safety officer and senior advisor for the Food and Drug Administration (FDA) in the Center for Devices and Radiological Health managing post-market safety for surgical devices. She received a BSN from Chamberlain University College of Nursing in Downers Grove, Illinois. Her research interests in bioethics include health law, policy, research ethics, clinical ethics, and reproductive justice. She received the United States Army Commander's Award for Civilian Service for her meritorious service throughout Operation Iraqi Freedom and Operation Enduring Freedom. After graduation, she plans to continue working at FDA and focus on reproductive justice activism.

Samuel Scriven, MDiv

Organizational Ethics in Healthcare

In an effort to discover economic stability, hospital systems are expanding their geographic footprint as well as their portfolio of services, making hospital and system decision-making increasingly complex. As the complexity grows, it is easy for hospitals to abandon explicit ethical analyses of the decision making process. This capstone project investigated the use of an organizational ethics committee in healthcare (OECH) to address complex decision-making. A literature review revealed not only the inherent value in collaborative decision-making, but also a discrepancy in an effective and collaborative decision-making process within healthcare. The goals of this capstone were to create a process that is inclusive of many perspectives ensuring an ethical analysis of the healthcare decision-making process, and to develop a support system for decision-makers to tolerate making ethical choices without minimizing the gravity of the dilemma. Specifically, the capstone examined ways to adequately define terms, develop training for organizational stakeholders interacting with the OECH, support leaders in high stakes ethical decisions, and create an OECH committee pilot at Beth Israel Lahey Health (having just begun the pilot, there are no measurable outcomes). Challenges identified during the pilot include finding the right members, prioritizing which ethical issues to review, and developing a curriculum to train committee members. The capstone concluded that an OECH helps an organization address injustices, inequities, and other ethical concerns that arise in the ever expanding complexities in healthcare. An OECH ensures that the voices of myriad organizational stakeholders are heard and considered, supports the decision-maker to reduce moral residue, and assists with a transparent communication plan.

Mentor: David Sontag, JD, MBE, HEC-C, Senior Associate General Counsel and Director of Ethics, Beth Israel Lahey Health

Samuel Scriven, MDiv, is the SoCal Market Director of Mission Integration at Dignity Health California Hospital Medical Center in Los Angeles. He received an undergraduate degree from Whitworth University, an MDiv from Fuller Theological Seminary, and is a board-certified chaplain through the Association of Professional Chaplains. He contributes to the bioethical conversations and policy developments that influence the process through which ethical decisions are made in a healthcare setting. After graduation, he will serve as the on-site ethicist as well as ethics educator for local Dignity hospitals, and will continue contributing to the bioethics conversation locally, nationally, and globally.

Kristin Strawhun, MD

Designing for Virtue: Exploring the Impact of the Hospital Environment on Clinicians' Ethical Behavior

The architectural design of hospitals increasingly focuses on enhancing patient experiences and improving health outcomes. Research suggests that spatial design influences both patient and clinician behavior. However, its impact on clinicians' moral and ethical decision-making remains insufficiently explored. Professional expectations require clinicians to not only embody specific clinical expertise and behave according to codes of conduct, but also to act as responsible and trustworthy agents. The discourse on medical professionalism emphasizes virtues such as empathy, compassion, and care as essential components of a morally sound clinical practice. This capstone aimed to investigate the extent to which hospital architecture and environmental modifications shape physician virtues, particularly compassion and resilience. This project included a literature review encompassing architecture, nudge design, choice architecture, and key clinician virtues to establish a foundation for further discourse on optimal healthcare workspace design. This review revealed that existing literature is fragmented and largely theoretical, with emerging data indicating that virtuous behavior results from moral bioenhancement, nudge-designed environments, and ambient persuasive technologies, such as sound and light modification. These interventions potentially align clinicians' behavior with their moral convictions, enhance their recognition of ethical dimensions in clinical practice, and mitigate cognitive or emotional barriers to moral decision-making. Exploratory focus groups identified specific environmental factors that clinicians perceive as facilitating or hindering their ability to provide high-quality care. By examining the intersection of hospital architecture, behavioral nudges, and professional virtues, this project advanced the conceptual understanding of how to intentionally design healthcare environments that support clinicians in maintaining ethical medical practice. Future research will explore empirical methodologies to assess the impact of these interventions, ensuring that workplace design fosters both optimal patient care and clinician well-being.

Mentor: Evie Marcolini, MD, MBE, Associate Prof. of Emergency Medicine and Neurology, Vice Chair of Faculty Affairs, Dept. of Emergency Medicine, Geisel School of Medicine at Dartmouth

Kristin Strawhun, MD, is a pulmonary and critical care physician at Atrium Health in Charlotte, North Carolina. She earned a BS in biology from Butler University and her MD from Indiana University School of Medicine. She completed her post-graduate training at Indiana University, along with a clinical fellowship in medical ethics. Her work focuses on the management of complex, critically ill patients and scarce resource management policy. Her interests include narrative ethics, justice, and equity issues. After graduation, she will continue to lead hospital ethics initiatives, improve clinical care at the bedside, and initiate state and federal health policies.

Meesha Vullikanti, BA

A Social Media Analysis of Abortion Funds: The Differences in Abortion Messaging in English Versus Spanish

In the United States (US), lawmakers impose strict restrictions on abortion care making it financially inaccessible, especially for non-English-speaking patients. Abortion funds are non-profit philanthropic organizations that provide funding and practical support for those seeking abortion services. These funds often provide the only source of timely information about abortion access. This capstone project examined whether there are language-based differences in the information provided by these abortion funds. English and Spanish-language social media posts published by abortion funds on Twitter, Facebook, and Instagram between June 24, 2022, and January 1, 2025 were analyzed. A collection of posts from the 95 abortion funds affiliated with the National Network of Abortion Funds were used for large-scale linguistic analysis. A selection of random samples from ten percent of the collected posts were used for qualitative thematic analysis. A total of 10,118 posts included 10,051 in English, 66 in Spanish, and 1 in Portuguese. The creation of a codebook using conceptual frameworks of abortion access, had additional codes added inductively. Two team members completed qualitative coding for this research. The results showed that most abortion funds published posts in English, and 16 abortion funds (17%) published posts in more than one language. Linguistic analysis revealed that 55% of English-language posts referenced sexual health and well-being compared to 13% of Spanish-language posts. Thematic analysis revealed that information presented to the public by abortion funds varied significantly based on language. English-language posts addressed sociopolitical issues and fundraising efforts, while Spanish-language posts discussed accessibility of services at specific abortion funds. This study suggests that social media posts by non-profit abortion funds exacerbate the marginalization of non-English speaking abortion seekers. Future research is needed to better understand how to promote language accessibility for those seeking abortion services.

Mentor: Rose L. Molina, MD, MPH, Department of Obstetrics and Gynecology, Beth Israel Deaconess Medical Center, Boston

Meesha Vullikanti, BA, is a clinical research coordinator at Massachusetts General Hospital in the Department of Obstetrics and Gynecology and the Corrigan Women's Heart Health Program. She received a BA in human biology from the University of Virginia. Her current research interests involve access to abortion care, structural mitigation of obstetric violence, and medical decision-making during pregnancy. Following graduation, she plans to attend medical school.

Linda Zhong, BS

Analyzing the Ethical Dimensions of Pay-to-Participate Clinical Trials

In traditional clinical trials, individuals typically participate without being charged and are often reimbursed for trial-related expenses, such as travel and lodging. However, in some cases, participants are required to give a payment to enroll in a trial. These financial contributions cover all or part of trial-related costs such as investigational treatments, data collection, or administrative expenses. These trials are commonly referred to as "pay-to-participate" clinical trials. This model raises important questions about whether it is ethically permissible to charge participants for trial participation. The purpose of this capstone was to analyze the ethical dimensions of pay-to-participate trials, examining the arguments both in favor and against this model. A literature review identified several recurring themes including justice, equity, scientific validity, and informed consent. Proponents argue that such trials foster innovation, enhance patient engagement, promote autonomy, and expand access to investigational drugs, drawing upon ethical frameworks such as libertarianism and Rawlsian principles of justice to support these claims. In contrast, critics raise concerns that allowing payment for participation in clinical trials leads to the potential for exploitation, compromised scientific validity, financial conflicts of interest, and increased inequality in access to research. This capstone highlighted the importance of transparency, disclosing conflicts of interest, and strengthening oversight and accountability in clinical research. As funding for biomedical research continues to face challenges, investigators are increasingly exploring alternative mechanisms to sustain their work. Pay-to-participate clinical trials offer a potential pathway of support, but this model must be approached with caution. This ethical analysis underscored the need for robust guidelines that balance scientific innovation with equitable access and participant protection for any trial design that involves financial contributions from participants.

Mentor: Barbara Bierer, MD, Faculty Director, Multi-Regional Clinical Trials Center, Brigham and Women's Hospital, Harvard Medical School

Linda Zhong, BS, received a BS in biology from the University of Texas. Previously, she worked as a clinical study coordinator at MD Anderson Cancer Center where she managed Phase I/II trials focused on immunotherapy and targeted therapy in oncology. Her work involved supporting the development of personalized therapies and novel therapeutics in early-phase cancer research. She is interested in exploring the complexities of ethical issues that arise in clinical trials, therapeutic innovations, and emerging technologies. After graduation, she plans to apply her training in bioethics to clinical research and drug development, ensuring ethical integrity and a patient-centered approach.

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