

Proposal for Individualized Major

Neurochemical Community Health

Growing up in India for fourteen years and moving to the United States has been a transformative journey, which has shaped my commitment to public health and preventive healthcare reform. This transition exposed me to contrasting healthcare systems and ignited my passion to work toward more equitable access to healthcare guidance, especially in underserved communities. My advocacy work in tobacco prevention—such as collaborating with Kentucky legislators to enforce Tobacco 21 laws to leading youth tobacco control conferences—reinforced this goal. I have witnessed firsthand how public policy can be a powerful tool in advocating for public health policies, especially when it's done by young professionals. My past experiences of working with youth nationally highlighted the urgent need for leaders who understand both the science behind health issues and the policies that can prevent them. However, to achieve my goals, a traditional single-discipline program would not provide the interdisciplinary framework required to understand the complex intersection of science, health policy, and advocacy. Therefore, pursuing an individualized major will allow me to integrate medicine, public health, and advocacy, uniquely preparing me to become a physician dedicated to tackling pressing health challenges like nicotine addiction and mental health through a blend of medical expertise and public policy initiatives in my community and globally. My individualized major will blend biology with chemistry, brain sciences, and public health and activism to support my goal of creating holistic healthcare solutions, empowering me to effectively advocate with evidence for

preventive care and to contribute to scientific research on health issues that have social and political implications.

As a pre-med student, a biology minor will provide me with the essential foundation needed for my future in medicine and for success on the Medical College Admission Test. Biology covers fundamental concepts to understand the processes of life at every level, from cellular functions to complex systems, and this knowledge will be crucial for me in my studies of health and diseases. Biology courses will allow me to study anatomy, physiology, and genetics in-depth, which are critical areas for the MCAT and my intended medical pathway. These subjects will act as a bridge for my better understanding of chemistry and brain sciences, making connections between cellular processes, neurological functions, and the broader impacts on public health. In a career dedicated to preventive healthcare, this knowledge will be especially relevant as I advocate for science-based approaches to addiction prevention and community wellness.

Chemistry will be my second concentration as it is a foundational component of my major, essential for understanding the biochemical and pharmacological mechanisms that impact health, especially regarding the effects of nicotine and other toxic substances that I plan on researching throughout my undergraduate years. My chemistry coursework will allow me to analyze the molecular interactions of substances like nicotine, as well as potential interventions or preventive measures to counteract these effects. Chemistry's relevance extends to my goal of connecting lab-based findings with public health applications; understanding the molecular foundations of

health challenges will allow me to speak confidently on both preventive measures and treatments, translating scientific insights into public policy.

Brain sciences, particularly psychology, is my third critical concentration that will enhance my ability to understand and advocate for public mental health, particularly concerning addiction and stress-related conditions, for youth and the upcoming generations. Courses in neuroscience will provide an understanding of the brain's response to substances like nicotine, highlighting the neural pathways associated with addiction, stress, and behavioral health. This knowledge is crucial for my focus on healthcare advocacy, as mental health challenges are deeply tied to broader public health outcomes, especially within underserved populations. The insights I gain in brain sciences will complement my chemistry studies, enabling me to connect addiction's chemical basis with its psychological and social impacts. This integrated approach will allow me to advocate more effectively for policies that address both the physiological and behavioral dimensions of public health challenges.

Public health & activism is my fourth concentration and a vital component of this major, offering the knowledge and frameworks needed to understand healthcare systems, policy development, and community health initiatives. Courses in public health will deepen my comprehension of the policies and systemic changes required for effective healthcare reform, especially in preventive areas such as tobacco and substance-use control laws. My experiences in youth tobacco advocacy have already provided me with hands-on knowledge of health policy challenges and the importance of legislation, like the Tobacco 21 laws in Kentucky, in shaping community health. By integrating public health with biology, chemistry, and brain sciences, I can approach

health issues from a scientific and policy standpoint. This combination is essential for developing well-rounded solutions to public health challenges that are scientifically sound and socially equitable.

To contribute to the credibility of my proposal and major, my past experiences have already highlighted how these concentrations intersect from my role in Key Club International organization and #iCANendthetrend, where I engaged in community outreach and advocacy, to research opportunities in The Cardinal Edge journal club at the University of Louisville, where I explore topics like nicotine's effects on health. My future goal is to attend medical school, specializing in a field that allows me to advocate for health policies that prioritize preventive care. I am confident that this individualized major in "Neurochemical Public Health" will provide the interdisciplinary skills needed to make meaningful contributions to healthcare reform, combining scientific rigor with policy advocacy. Research and internship opportunities, such as working with undergraduate research labs or interning in a healthcare policy setting, will further support my professional growth, allowing me to apply this integrative knowledge in real-life scenarios.