1. **Title**: Example Pre-Proposal
2. **Leadership**: PI: Professor Zachary Smith
3. **Partners**: Northwest Community College (Pipeline); Mississippi Valley State University (Pipeline); UMMC (Research Partner); University of Tennessee (Medical Partner);
4. Institutional/Student Development Approaches:
   1. Biomedical Research 200 *(166 words)*  
      **We will develop a new undergraduate course on Biomedical Research to increase biomedical literacy and entice students into biomedical-research-related undergraduate programs of study.**  
      The 3-hour course will be developed by a cross-disciplinary team of science, engineering, and education professors (Kirk, Spock, and McCoy), with input from public and private research professionals from non-UM institutions, and will count towards meeting the science requirement for non-science majors. A novel aspect will be its pairing of the cognitive learning models of Carl Rogers with the medical fiction of Michael Crichton. In addition to lower division UM students who have not (yet) declared a STEM major, the course will be co-taught at pipeline partner institutions by UM and partner faculty, and targeted to high school students through UM’s Summer College and Dual Credit Programs, and so will target the hallmark of entering a biomedical-research-related undergraduate academic program, and aim to increase student participation in such programs, as well as student understandings of and perceptions to requirements for biomedical careers success.
   2. Annual Mississippi Health Professions Month at Ole Miss *(150 words)*  
      **We develop a month-long annual program at UM aimed at increasing undergraduate students’ awareness of the variety of biomedical-related academic programs, workforce needs, and career opportunities for developing cures, treatments, and solutions to disease and other public health threats.** NIH funds will be used to recruit biomedical research speakers, to hold a signature event one day per year, and to create marketing and outreach materials associated with the event to increase public awareness, especially among current and future undergraduate students in Mississippi, about the critical health issues facing our world, nation, and especially Mississippians, and how they can pursue futures wherein they will contribute to solving these problems. This approach will change student perceptions about the importance of, opportunities for, and requirements for success in, biomedical careers, and will engage and inspire more students to join, persist in, and succeed in biomedical-research-related programs of study, including undergraduate programs and doctoral programs.
   3. Summer Research Experiences  *(Word Count = 100)*  
      **We will develop a number of paid, biomedical summer research experiences hosted at, and mentored by faculty from, UM and the University of Tennessee and UMMC, for undergraduate students at UM and its two pipeline partners**. These experiences will include: a 1-week orientation and skills training at Ole Miss; 8-weeks of mentored research at the research host; and a week-long health disparities tour of Mississippi. Prospective mentors will register their availability and specific biomedical research projects that the propose to supervise undergraduate researchers in, and the undergraduates will express their preferences, then be “matched” to a host lab.
5. Faculty Development Approaches:
   1. Biomedical Educational Enhancement Internal Grants Program (68 words)  
      **We will develop an internal grants program for faculty at UM and pipeline partners to enhance existing biomedical-research-career-related courses to include more active engagement of students in the learning process, including through field and lab experiences related to biomedical research.** The novel aspect is that each such enhancement must be related to one of several diseases for which Mississippians are especially susceptible: hypertension, diabetes, heart disease, and obesity.
   2. Biomedical Research Acceleration Internal Grants Program *(132 Words)***We will use NIH funds to develop a program for faculty at UM, its research/medical partners, and other faculty in the surrounding region to compete for seed grants to investigate basic and applied problems related to treating and curing human diseases.** An innovative aspect is that these grants will only be made to research terms that are diverse in one or more of: discipline, institution, rank (assistant/associate/full professor), student participation (undergraduate/graduate) and membership in underrepresented groups in STEM (e.g., African Americans, women, and persons with disabilities). These grants should contribute to the transitions of students from undergraduate to doctoral programs, as well as to the tenure attainment and/or promotion of faculty to higher ranks, and should increase the numbers of peer reviewed, biomedical-related research publications, including those listing undergraduate students as co-authors.
6. Diversity Enhancement Approaches:
   1. Biomedical Bootcamp *(Word count: 117)*  
      **We will develop a biomedical-themed summer transition-to-college program for rising freshmen with strong academic track records, expressed interest in biomedical sciences or issues, and weak STEM backgrounds.** The purpose of this program will be to shore up STEM preparation through science courses and tutoring, build a sense of community, and create a broad awareness and sense of advocacy among the recruits about the need for, and roles in, and success factors for, creating strong research-based programs for improving individual and community health. This program should automatically draw high percentages of underrepresented students, especially African Americans, and we will also use NIH funds to reduce and eliminate barriers of participation in the bootcamp by students in these populations.
   2. Guyton/Harper Program for Students with Disabilities (*Word count: 100*)  
      **We will develop a program to encourage and support students with disabilities to pursue academic programs and careers leading to biomedical research**. Inspired by Arthur Guyton, the program will aim to show students how it is possible to make a national impact to biomedical education and research in spite of their disabilities. Inspired by the life of Maxine Harper, the program will also aim to help K-12 school teachers use enabling technologies and affirmation to encourage and facilitate their students to graduate high school and enter biomedical-research related programs of study in college.
7. Student Professional Development Approaches:
   1. Hunger Games Camp *(Word count: 107)* **We will develop the first ever pre-college summer program dedicated to teaching students to survive and thrive in conditions of sleep and food deprivation, as they might be likely to encounter in academic and professional careers leading to biomedical research and service delivery, while also teaching them about diseases related to obesity**. In this week-long event, students will safely endure and prevail over physical discomfort and fatigue while working collaboratively to develop a cure/solution to a disease/problem, in a game environment. The skills of perseverance and postponed gratification will be emphasized, as well as the knowledge that success and satisfaction follow disciplined perseverance toward a worthwhile goal.
8. Mentoring Approaches:
   1. Mentor/Protégé Training*(74 words)* **We will engage outside experts in mentoring to help us develop and implement mentoring training for mentors and protégés**. This training will be offered as a one-day workshop each intercession, and as an online, on-demand training module, and available to all UM faculty, students, and staff members. Training will emphasize such aspects as: how to recognized dysfunctional mentoring; mentoring members of underrepresented groups; how to search for, select, and approach a potential mentor; etc.
   2. UM Biomedical Mentor Network*(word count = 109)* **We will establish a network of biomedical mentors from among not only current UM faculty and post-graduate students but also from among UM alumni working in biomedical fields, including biomedical research.** UM students in biomedical-research-related programs of study will be encouraged to navigate this network to find, select, and engage potential mentors. All protégés and mentors in this network will be required to complete mentor/protégé training. While mentor training is not novel, protégé training is a rather recent innovation, and in any case there are currently no formal mentor training or registration programs available at UM, so this will be novel here even though not novel in the world.