**Notes for Instructors**

**Health Science Capstone Research**

**Course Vision:**

Students will conduct collaborative projects in the health sciences in order to create a culminating portfolio that will highlight their research skills, professional collaboration, oral and written communication skills. Under mentorship of health science professionals and the course instructor, students will take ownership over their learning, using curiosity and initiative to contribute meaningfully to health science discourse. The Capstone will engage learners in challenging, rigorous, focused, and independent learning within a supportive environment.

**Objectives:**

* **Problem**: Demonstrate the significance of a problem with compelling evidence
* **Case Study:** Create a realistic narrative depicting the physical, mental, and social health factors in a patient with a particular health problem.
* **Research Question:** Formulate a focused, relevant question with a testable relationship
* **Data Collection:** Design primary research tools that are reliable and aligned
* **Source & Cite:** Locate, analyze, & cite secondary research sources that are reliable and aligned
* **Data Analysis:** Organize & analyze data using quantitative and qualitative measures **Conclusion:** Construct an aligned, evidence-based conclusion
* **Intervention:** Generate evidence-based recommendations for future research & interventions
* **Written:** Write a coherent, concise, and convincing scientific research paper
* **Oral:** Orally present and answer questions in a clear, professional, and compelling way
* **Evaluate:** Assess and critique final products to demonstrate critical thinking

**Key Meta-Cognitive Learning Skills:**

Problem Solving

Collaboration

Adaptability

Initiative & Responsibility

Accessing & Analyzing Resources

Curiosity

Time Management

Grit

Optimism

Gratitude

**Site Visits & Interviews:**

An engaging and unique part of the Capstone is the site visits and interviews with health professionals and experts in their topics that students can conduct out in the community. The following descriptions summarize these two types of experiences.

**PARTNER SITES:** These are organizations, labs or research groups, clinics, hospitals, agencies, etc. who will sponsor a small group of students who are working on similar themes in their projects. Partner sites must agree to one site visit on a weekend or after school (unless release from school time is possible for small groups). Partner sites will provide observations or tours of the work done at their site, and help students make connections to individuals or resources throughout the community who do work related to their project focus area. The instructor could either work directly with these contacts to set up an initial visit for students or students could be provided with possible sites to contact and arrange these visits on their own.

**INDIVIDUAL PARTNERS:** These are any health science professionals (e.g., health care providers, health professionals in the community, faculty and graduate students at academic institutions, etc.) who would be willing to be interviewed by one or a few students (suggestion: 30-45 min). The instructor can send a mass email to these partners with a link to a simple survey clarifying their interest and availability/level of commitment. If the survey is done as a Google Form, it can then be easily shared with students, who will reach out to set up interviews on their own. Individual partners can also be invited to the students’ final presentations.

**Popular Topics:**

Students in Capstone have historically gravitated toward popular topics that relate to drug use/addiction, violence, mental health, sexual health, cancer, maternal/infant health, and children’s health. Other common topic areas include organ transplantation, sickle cell disease, asthma, veterinary science and animal health, obesity & nutrition, exercise physiology and physical therapy topics, stress, health care reform & health policy, disability, injuries, diabetes, heart disease and other chronic diseases

**Sample Email:**

Dear Students,

You are about to begin your Capstone project! In the Health Science Capstone, you will define your own purpose, become very independent, and produce something meaningful that you can look back on throughout life with pride. My hope is that you will realize how powerful you are to create positive change in your community as you tackle the health problem you find yourself most passionate about!

Taking the first step for your Health Science Capstone will require you to choose a pathway. Think about all of your interests. Think about possible ways you could combine them that you may not have considered before. I would like you to make a decision on your direction within the next few days.

Feel free to contact me if you want to discuss ideas and options for your project!

-Your Instructor

**Motivation (Student-directed Version):**

*We will soon carve out a path for our lives in college and beyond. Some of us will become physicians, nurses, dentists, pharmacists, public health practitioners, veterinarians, social workers, nutritionists, physical therapists, and researchers in the health sciences. Others will pursue noble and exciting careers outside of the health sciences—as engineers, law professionals, business entrepreneurs, teachers, and so much more. But for all of us, we seek to make our world a better place. We can make the world a healthier place through our life’s work. The positive change we create may happen through a commitment to our own personal health and the wellness of our family and friends. It might be carried out through our activism and volunteerism on our college campuses and in our communities. It may even transcend our immediate geographical ties and reach the entire nation or world. In any case, having a strong foundation of scientific literacy, research methodology, and problem solving will allow us to make smarter decisions for ourselves, our communities, our nations, and our world. You will spend a great deal of time in this Capstone project stretching yourselves, testing your limits, exploring your passions, and to making your mark on the world. As we embark on this journey, let’s do more than survive and get it done. Let’s be extraordinary.*