

An Impactful Health Science Opportunity

To hold a human brain and spinal cord in your hands, to see an enlarged heart in contrast to a normal one, to witness the results of bypass surgery and the remnants of a person's pacemaker wires immersed me in the awe of medical marvels. In the gross anatomy and physiology lab I found my mind rollercoasting between complete undistracted fascination contrasted by the human reality that medical knowledge, procedures and equipment potentially gives the gift of life—another week, month, or years to be a mother, brother, neighbor, coworker, aunt, and spouse. Going through such a vivid, personal experience, frankly, it changes you.

Let me start from the beginning. As I rolled over and hit my snooze alarm, it clicked. Today I will be tagging along with thirty-six Medical Terminology high school students to a gross anatomy lab. With pending apprehension and excitement, I looked forward to what lay ahead and figured the students were most likely feeling the same about the pending anatomy and physiology lesson.

As I entered the Career and Technical Education (CTE) classroom where high school juniors representing each of the five large home high schools and Renaissance High gather to take Medical Terminology, a specialized program class, the CTE instructor, Scott Marema was just finishing collecting the parent permission paperwork required to participate. I quickly handed over my own written consent to be included in the three ring binder. Students waited patiently for Marema to finish assembling the last of them and the time was drawing nearer as indicated by Marema's reminder to the students that the special opportunity, which lay ahead, was one to approach with reverence and utmost respect.

Together, we headed out, walked down a short hallway then passed through an opening where the change in the shape and color of the floor tile indicates the seamless transition from the CTE Center - Renaissance Campus to Idaho State University Meridian Health Science Center (ISU-Meridian). Continuing on we took a left and at the hallway end, we arrived at L.S. and Aline W. Skaggs Treasure Valley Anatomy and Physiology Laboratories (TVAPL).

Our group comfortably filled the lab with room at the front for Padma Gadepally, Education Program Coordinator for IDVAPL to greet us and explain the impressive visuals on the extra-large wall-mounted monitors. She spoke as she switched images from full displays of lateral and horizontal cross-sections of the human anatomy to displays of specific body systems. She shared with the students how easy it is to use the touch-screen table to explore every aspect of the body and all of its systems, organs and functions with the results displayed as sophisticated and comprehensive high-resolution images. After questions were addressed, Gadepally explained the incredible opportunity a gross anatomy lab such as the one at ISU Meridian offers to users as well as the maturity and respect



required to match the professional learning experience. She stressed that such a medical learning environment provides unique and profound resources to students for the purpose of better understanding medical science so that one can experience the body unparalleled to any medical book or 3D model.

After selecting the right size of medical gloves, we entered the Gross Anatomy Lab where I joined the smallest of the four groups of students. For the next hour, we shifted approximately every twenty minutes rotating between four prepared stations. At each location, surrounded by several trays with varying sizes of carefully prepared and covered specimens, an ISU lab tech greeted us. The techs were knowledgeable and engaging as they led the students through a series of probes, samples, demonstrations and inspiring focused inquiry. The culmination of the entire learning journey had covered the digestive, circulatory, and nervous systems, including the heart and brain.



Pictures courtesy of Idaho State University

At the conclusion, Noah Harper, an anatomist as well as the Associate Lab Manager/Bioskills Lab Supervisor of the facility joined us after we regrouped back in the virtual lab for a debriefing before going back to the classroom. A contagious anatomy enthusiast, Harper brought up a picture of a person and after circling the upper thigh on the image projected; he challenged the students with some seemingly straightforward questions, “Is it true that this is part of the leg? If a paramedic reports that they are bringing a patient in with a broken their leg, what does that communicate to the doctor and nurses?” Harper continues explaining that technically the term “leg” only refers to the lower section from the knee down to the foot. Therefore, when a report comes in that a patient has a broken leg, it communicates that the focus will be on the tibia and fibula bones in the lower limb is intact and the focus will be on. He uses the example to highlight the importance of accurate and effective communication in the medical profession. In closing, Harper encourages the students to take advantage of the access they have to the

Virtual Lab. He then pivots to the incredible experiences they just had in the gross anatomy lab and assures them that it is good to process the morning events with close family and classmates. He wraps up by reemphasizing the need for discretion and respect when it comes

to sharing such an experience with others and provides the students with clear guidelines to follow.

Walking back to the classroom, the student chatter was at a low steady hum as the students processed the last ninety minutes with each other. As we moved along, lost in my own thoughts, I overheard a female student who had been in my group say to her classmate, “I’m not sure now, I may want to be a doctor!” I jumped in, “Really? I watched you the whole time in the lab. You asked and answered so many questions. You were so curious and involved; I have to tell you that I just assumed you were going to be a doctor.” At this point, I realized how presumptuous this was and so I asked her what she had in mind. She answered, “a pediatric labor and delivery nurse but now I’m not sure. I really think I might rather be a doctor after today.” I agreed that either occupation would be rewarding and added that I was happy that today gave her additional insight into new good fit options while she is still in high school.

In reflection and after visiting with the students, instructors and reading the students’ reflections (excerpts provided below), it struck me that the experience and information had become a part of my mind as well as my emotional self that will forever affect the awe I have for the inner workings of my own body and how incredibly special it is. I also know that for West Ada’s Health Science students who get this privilege, the experience is impactful. One that solidifies the learning into something tangible, memorable and even perhaps career altering.

Dena Pengilly, West Ada School District
CTE Magnet Programs Outreach Facilitator
Published May 2017

About the West Ada School District’s Health Science Program and the Idaho State University Partnership

West Ada’s CTE Center – Renaissance Campus and Idaho State University Meridian Health Science Center are located in the same building. This unique setting fosters a special opportunity for a strong secondary and postsecondary partnership. Together, the partnering educational entities have committed to share teaching resources to enhance the quality of West Ada’s Health Science Program pathways. The partnership model also serves as a more fluid approach to building stronger connections between high school and postsecondary transitions.

Established agreements provide prearranged access and instruction for the high school CTE Health Science students. Activities include applied learning experiences in ISU - Meridian L. S. Skaggs Pharmacy Compounding Lab, and the L.S. and Aline W. Skaggs Treasure Valley Anatomy and Physiology Laboratories including the Blue Cross of Idaho Foundation for Health, Inc. Virtual Anatomy and Physiology Laboratory, as well as the use of the Medical Simulation lab. These state-of-art facilities and teaching resources expand the scope of the curriculum and learning potential in exponential ways.

High school students throughout the West Ada School District have the opportunity to register for “off campus” Career and Technical Education (CTE) program classes. Health Science pathways offered are: Certified Nursing Assistant (CNA), Pharmacy Technician, and Emergency Medical Technician (EMT). Advanced Health Science classes are taught at the CTE Center - Renaissance Campus. This is where students from high schools throughout the district spend a half day, every other day, away from the home high school.

Learn more at www.westada.org/CTE

ISU Anatomy and Physiology Lab CTE Health Science Student Reflections

“The most mind blowing thing for me was when we were looking inside the abdominal cavity at the internal organs and chest. I thought it was so odd to see how the organs actually sit in the body, everything is much higher up and much more compact than I imaged.” --Jenna

“Thanks to the knowledge I have gained from the lab and on the cadaver program, I do plan to donate my body to science. I would like to be able to provide others with the experience I was lucky enough to have.” --Karley

“All in all, having all my knowledge put into perspective right in front of me with real human systems was one of the coolest, most educational, and humbling experience I’ve ever had. I wish we could go in the lab every day.” --Emma

“This lab definitely made me more confident in the human body and just how everything in it works together to make a living human being. Being in an EMT has been the greatest experience of my life knowing that I am choosing the right career path based on my passion for the job that only continues to grow every single day. The class is very helpful in learning new things and understanding the job of an EMT, but of course, there are only so many things that can be taught and shown to one, so going to the cadaver lab is something that should be offered to all” --Erin

“To be able to experience something like this cadaver lab that Idaho State University provided to our EMT class was truly amazing. I loved having that experience and being able to share it in and out of the lab with others. I was really nervous going into the lab, but once I got in and started to learn I felt like it was my place. I enjoyed the beauty of being able to have such a hands on real learning experience.” --Liberty

“The cadaver lab was a lot of fun. It was one of the coolest things I’ve ever done and to actually see the organs and to hold it was mind blowing. I learned so much... I definitely want to go back in and learn some more. Going in the Cadaver Lab made me more interested in the medical field and want to study a lot more and a lot harder now to go to medical school in the future.” --Hanna

“The trip to the cadaver lab was one of my most memorable experiences in my life... My favorite lab was the gastrointestinal and major organs lab. I learned one of the most amazing things that I’ve ever heard in my life about something I had no clue it even did anything. The appendix served a huge purpose in early man. The early man would eat a lot of things that would, to put it nicely, flush the system. When that would happen all of the important bacteria that live in the intestines would be flushed out as well... What the appendix would do would be to store enough of the good bacteria that when the system would be flushed the appendix had enough bacteria in it that the bacteria could grow back throughout the rest of the intestines. It’s crazy to think of something that small playing such an important role in our bodies.” --Connor

“Even before we were at the cadaver lab I was beyond excited that I had the chance to go. The trip to the cadaver lab was unforgettable. In such a short period of time I relearned and learned more about the body than I had in all of my previous classes combined. Seeing the body in front of you was an experience like none other. The amount that I learn from this short time was incredible.” –Alex

The Cadaver lab was a brand new experience that I will forever be grateful that I was given the opportunity to experience in high school. It was undoubtedly helpful that I was given a chance to associate a real life example to pictures and words from the EMT textbook... Without a doubt, this experience will prove useful in any medical field I endeavor to succeed in, and has most definitely enhanced my learning experience.” ---Vincent

“I thought going to the cadaver lab was a wonderful experience. It gave our EMT- Basic class a better opportunity to understand the gastrointestinal, neurologic, cardiovascular, and respiratory systems. Textbooks can only reenact and describe anatomy to a certain extent. Seeing the real thing confirms my already standing knowledge and deepens my knowledge to a new level of things that I did not know seeing the organs allows me to appreciate them for all they are worth and have a small understanding of how complex the human body truly is... Overall great experience and I enjoyed watching my classmates be mesmerized by seeing and touching real anatomy!” --Kate

“I loved the cadaver lab... I especially found the section about the human brain and spinal cord the most interesting. It is cool to know that such insignificant looking things play such a big part in keeping the body alive.” --Reagan

“The Cadaver Lab gave each student their own experience, and they all take away something new/different, which is a crucial part of education.” --Becca