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Overview
A perfusionist is a vital member of the cardiovascular surgical team. This is because their job is to make sure to keep the patient alive while their heart and lungs are stopped. In order to achieve this, a perfusionist operates a heart-lung machine that circulates blood. A perfusionist also has duties such as regulating body temperature, administering medications, monitoring lab values, and more.

Cardiopulmonary Bypass
Occurs in cardiac surgery when the use of a heart-lung machine takes over the functions of the cardiopulmonary system.

Education
1. High School Diploma
2. A Bachelor's degree in Perfusion Science
3. A certificate in Perfusion Science

Fun Fact
It only takes 20 to 60 seconds for a drop of blood to travel from the heart through your body, and back to the heart again
What is Monkey Pox?

Monkey Pox is a virus that belongs to the orthopoxvirus genus in the family poxviridae. This family contains other viruses such as smallpox and the cow pox, and as a result has similar symptoms to both illnesses. Monkeypox usually begins with a fever, headache, muscle aches, and exhaustion. The difference between monkey pox and small pox is that monkey pox causes the lymph nodes to swell and small pox does not.

Why Should I Care?

Even though monkeypox was discovered in 1958, the highly containougoius disease has faced a new outbreak in 2022. Even though there has been a confirmed number of 45 cases in the United Sates (one of them being in Arizona) it is inferred that the virus was reinvigorated by someone coming into contact with an infected animal.

What Can I Do?

Monkeypox is spread by coming into contact with a person or animal that carries the diseases. The main form of transmission is through that of bodily fluids that come from the sores monkeypox creates via skin to skin contact. To prevent the disease, avoid having contact with a sick animal that is in a region where monkeypox has occurred, practice good hygiene, and wear personal protective equipment when coming into contact with sick people who show signs of the virus.

Source: CDC - https://www.cdc.gov/poxvirus/monkeypox/index.html
Are you a high school student interested in pursuing a Pre-Medicine track during college? Challenging yourself with Advanced Placement (AP) classes is an excellent way to prepare yourself for the Pre-Medicine course requirements for Medical School!

**Science**
- AP Biology
- AP Chemistry
- AP Physics 1
- AP Physics 2

**Math**
- AP Calculus AB
- AP Calculus BC
- AP Statistics

**Social Science**
- AP Psychology

**Language**
- AP English Language
- AP English Literature
- Any AP World Language
1. What school do we go to?
2. What is our favorite ice cream topping?
3. What is our favorite hobby?

Charity Mattingly
1. University of Arizona
2. Gummy Bears
3. Cycling

Aurora Marshall
1. Northern Arizona University
2. Oreo Crumbs
3. Reading

Hannah Woodruff
1. Grand Canyon University
2. Cherries
3. Reading

Edly Montoya
1. Arizona State University
2. Gummy Bears
3. Hanging out with Friends
Clarissa Magdaleno
1. University of Arizona
2. Kit Kats
3. Taking Naps

Jairo Flores
1. University of Arizona
2. Oreos
3. Sleeping

Ira Puranik
1. University of Arizona
2. Oreos
3. Sleeping

Alia Hernandez
1. Douglas High School
2. Oreos
3. Drawing

Meghana Tripuraneni
1. University of Arizona
2. Brownies
3. Calligraphy
**WHAT IS CPR?**
Cardiopulmonary Resuscitation (CPR for short) is an emergency life-saving procedure that is performed to bring back blood circulation to the heart.

**WHY IS IT IMPORTANT?**
Every year around 350,000 people die from cardiac arrest which could be reduced by knowing what to do in an emergency situation.

**HOW TO TELL IF SOMEONE IS IN CARDIAC ARREST:**
You can tell if someone is in cardiac arrest if they are unresponsive, without a pulse, not breathing, and/or unconscious. Before cardiac arrest, people are usually dizzy, weak, short of breath, or sick to their stomach.

**HOW TO DO CPR**
- Check for responsiveness
- Activation of emergency response (Call 911, Call for AED)
- Make sure the person is laying down and the area is clear.
- Start CPR by giving 150 compressions (Two hands centered on the chest, shoulders directly over hands, and elbow locked. Depth should be 2 inches and pump at 100-120 beats per minute. Allow chest to return to normal position per compression.
- Switch with another person after either 150 compressions or two minutes.
- Keep giving compressions if you are alone.
- Wait for the Automatic External Defibrillator (AED) and use it if paramedics have not yet arrived.
Juvenile Idiopathic Arthritis

Juvenile Idiopathic Arthritis (JIA) is a form of arthritis in children. Arthritis causes joint swelling and joint stiffness. JIA affects one or more joints for at least six weeks in children aged 16 or younger. The exact causes of JIA are unknown, but researchers believe that certain genes may cause JIA when activated by a virus, bacteria, or another external factor.

Facts About Juvenile Idiopathic Arthritis:

- Affects more girls than boys
- JIA is an umbrella term of different types of childhood arthritides.
- Estimated that 300,000 children in the U.S. are affected by some form of Juvenile Idiopathic Arthritis.

Different Types of Childhood Arthritis:

- Juvenile Idiopathic Arthritis
- Juvenile Myositis
- Juvenile Lupus
- Juvenile Scleroderma
- Vasculitis
- Fibromyalgia
They aren't acting how they normally do; not greeting you when you get home, not wanting to play, etc. They aren't eating or drinking.

GDV is a disease that predominantly affects Great Danes, Weimaraners, St. Bernards, Irish setters, and Gordon setters. GDV occurs when a dog eats a big serving of food and the stomach dilates and then immediately following the dog partakes in physical activity which causes the stomach to twist itself, blocking the passage of food and gas in and out. This creates a large buildup of gas in the stomach that cannot escape causing this disease to be life threatening. GDV is treatable with emergency surgery where the veterinarian untwists the stomach and sutures the side of the stomach to the abdomen wall (Gastropexy) to prevent GDV from happening again. Many owners make the decision if they have a deep chested dog that is of high risk of GDV to have the veterinarian perform a gastropexy when they get their dog spayed or neutered. Signs of GDV includes distended abdomen (most common), retching without producing anything, and drooling.

https://www.acvs.org/small-animal/gastric-dilatation-volvulus
AzHOSA Synapse - Well Child International

Cheney & Zack Merhavy are current 2nd year medical students who were former GCU AzHOSA Presidents. They attended 2 Baja trips in 2018 and gained invaluable experience.

Students interested in the medical field are always looking for opportunities to diversify their college and medical school applications that show their dedication and commitment to medicine. One such experience can be found with the organization Well Child International.

We participated in a trip with WCI and were so inspired by the organization and our time in Puerto Peñasco (Baja) that a large amount of our personal statements for medical school featured our experiences. WCI gives students ranging from high school to college an opportunity to get hands-on experiences within the medical field in an environment that exposes them to the world outside of the United States and the comforts we often take for granted there.

Trips range anywhere from 6 to 13 days. At the start of your trip, you will get a crash course on the country you are in, including the current health issues affecting the local population, and be taught specific clinical skills you will be using during the trip. The rest of your trip can be customized to fit what kind of activities your group would like to do. For our experience, our team did health surveys around the poorer neighborhoods and advertised a children’s clinic we would be hosting at the end of our trip in conjunction with a local physician. We also toured and volunteered at the local hospital and had a lecture on homeopathic remedies using the native plants of Mexico. We saw a variety of different medical cases from necrotic tissue removal to broken bones and discussed how the health system impacts the quality of care and cost patients experience.

When we weren’t working, we had free time to explore the area, eat at local restaurants and taco stands, and had the best guacamole of our lives so far. The housing for the trips includes a retreat center with a pool and in-house cook. We had amazing guides and translators for the entirety of our time on the trip that made the experience that much more memorable. Overall, WCI provided a safe, convenient, and incredibly memorable experience that we haven’t forgotten since!

WCI also provides a certificate of participation for those that attend a trip and can provide a personalized letter of recommendation for your college/graduate application packages.

Trips from AZ to Baja are scheduled for July 23-29, October 2-8, and October 8-15 – cost is $985 plus an $85 deposit. If you are interested in coordinating and leading a group of 10, you get your trip for free; or for every friend you bring, you get a $100 credit towards your trip! If you’re interested in attending one of these trips, be sure to visit https://wellchildinternational.org/ for more information.