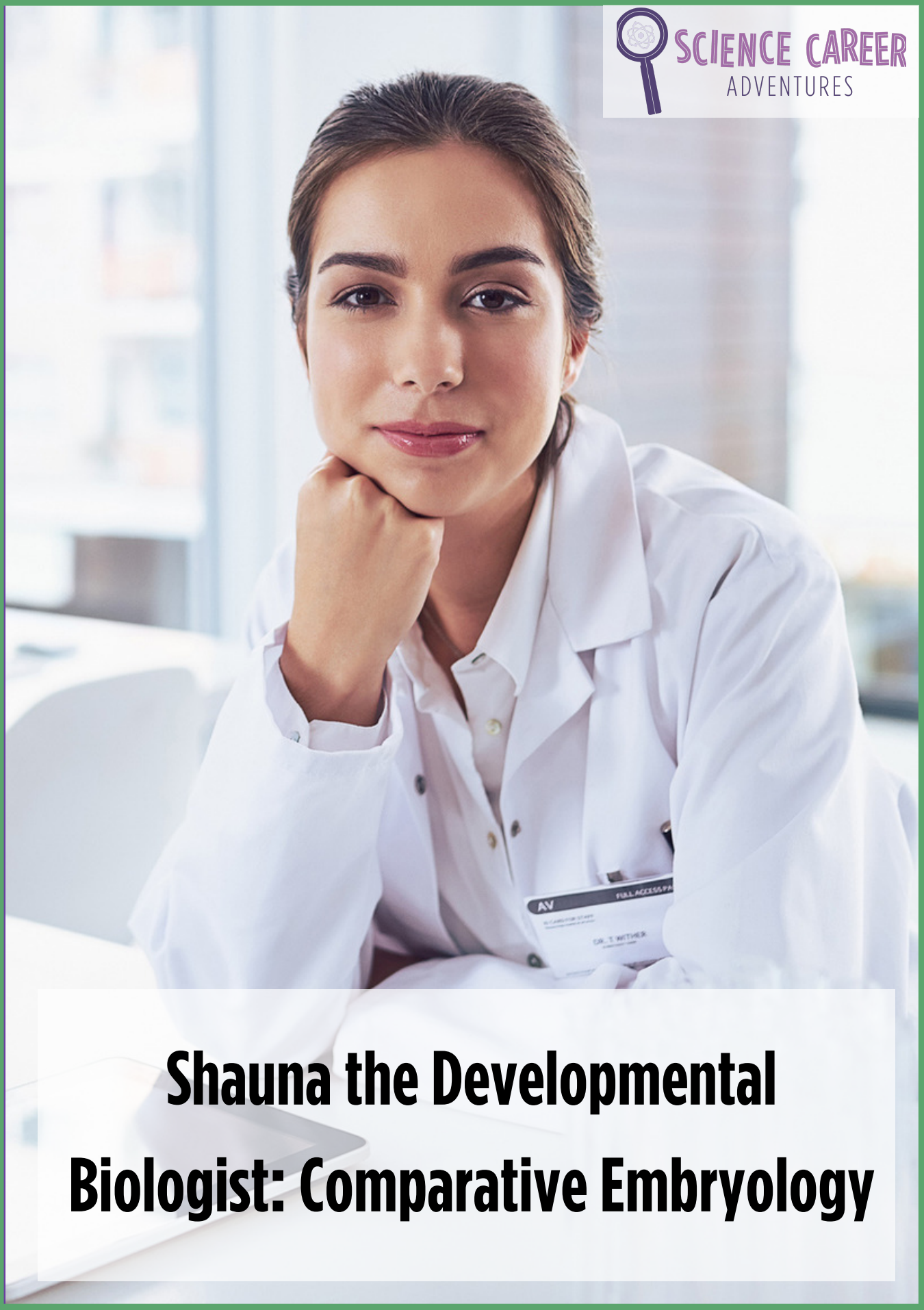


SCIENCE CAREER ADVENTURES

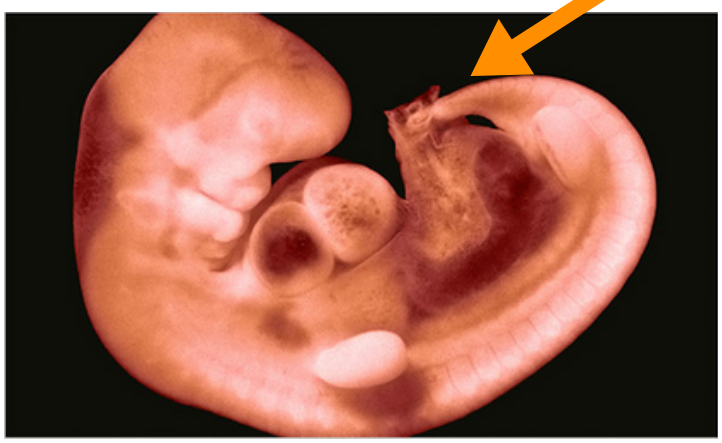
Shauna the Developmental Biologist: Comparative Embryology

Who is Shauna?

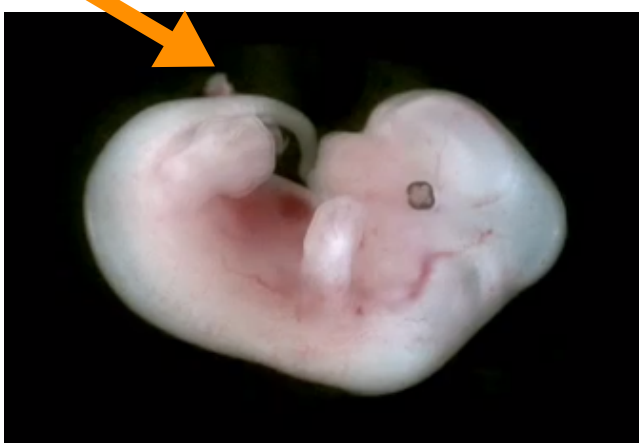
Hi! I'm Shauna.
I am a developmental biologist. Developmental biologists study how an organism grows and develops. For example, a developmental biologist might study how a blowfish or giant fishing spider develop over time.

I specialize in comparative embryology. That means I study the embryos of different animals to see how they are similar and different from each other. An embryo is an organism in the early stages of development and hasn't been born yet. When I look at embryos, I look for similarities that tell me that the animals share a common ancestor. For example, all vertebrates have a tail during development, but humans lose this structure as development continues. Since humans and other vertebrate embryos have a tail in the first stages of development, this means that they share a common ancestor that had a tail.

Tail



Human Embryo

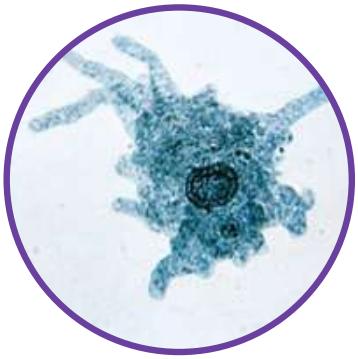


Mouse Embryo

How I Became a Developmental Biologist

In Middle School





In my 6th-grade biology class, we walked out to the pond by our school and took a sample of pond water. Then, we looked at the sample under a microscope. I saw all kinds of tiny living things, including amoebas, moving around under the microscope. My teacher told me that many biologists work outside and use microscopes.

In High School



I joined the biology club in high school. For one of our activities, we had to research embryonic development in different animals, like cows, chickens, and pigs. Embryos develop in stages, which means they grow in a series of certain steps. After we researched the different stages, we drew all of the stages on a huge piece of paper. It was a lot of fun seeing how embryos from different animals start out looking similar to each other, but change to look different as they develop through the different stages. We also got the opportunity to dissect a cow embryo and look at it up close! How cool is that? This was the first time I learned about developmental biology. My teacher told me that I might want to be a developmental biologist one day!

How I Became a Developmental Biologist

In College

I decided to get my Bachelor's degree in Biology. My favorite class was called "Understanding Genetics." We learned about how organisms develop based on genetic information (DNA) from their parents.

After College

I decided to get a Master's degree in Developmental Biology. A Master's degree is an advanced degree that you get after college. I wanted to get a Master's degree so I could take more classes in developmental biology. Many scientists get an advanced degree so they can become experts in a specific area.

What I am Working On

I just finished my Master's degree! Right now, I am looking for my first job in the field of comparative embryology. I want to study embryos of different animals.

I have been searching online for jobs. I went to a job site called Indeed! When you go on Indeed, you can search for certain types of job in certain locations. Because I am getting my first job, I am going to look for jobs anywhere in the United States.That way, I can increase my chances of getting my first job! Here are the job titles I searched for:

indeed®

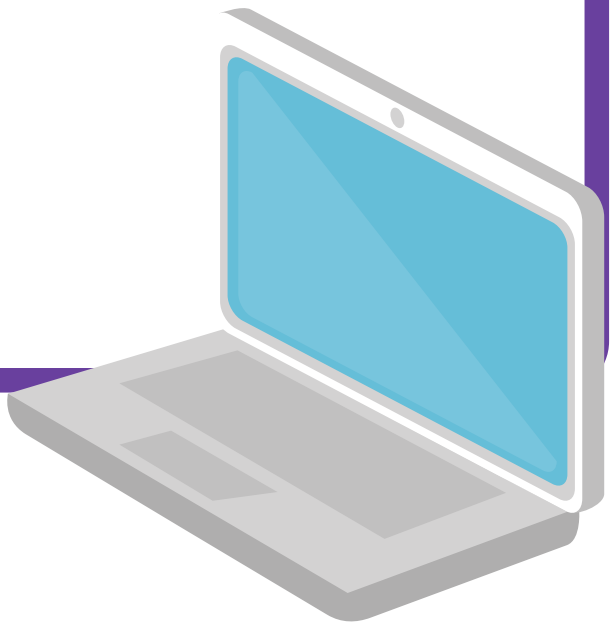
What | **Where**

Anywhere

Developmental Biologist

Scientist

Research Assistant

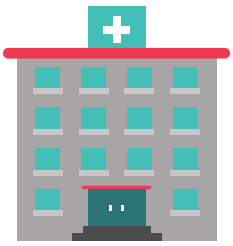


Job Posting

Take a look at this cool job posting I found! This lab is hiring a research assistant to look at pictures of embryos from different animals. The goal is to look for similarities and differences between the embryos. By finding similarities, scientists can argue that animals share a relative, or a common ancestor.

Company Name:

John Cunningham's Research Hospital



Description:

Conduct laboratory research to determine similarities in embryo development of a variety of different species. Evaluate the data to determine relationships among different species. The researcher will also conduct experiments to understand how genetic diseases develop in growing embryos.

Key Responsibilities:

- Design experiments
- Record and analyze data
- Created presentations to share experiment results with colleagues
- Write experiment summaries to share in journals

Qualifications:

- Must have an advanced degree in developmental biology, genetics, or a related field.
- At least one year of previous experience working in this field is a plus.

Required Skills:

- Critical thinking
- Attention to detail
- Ability to multi-task
- Accurately record data

Resume and Cover Letter

Resume

To Whom it May Concern
John Cunningham's Research Hospital:

I am interested in the job opening you have for a developmental biologist. I recently graduated with my Master's of Science in Developmental Biology from Stanford University with a 3.94 grade point average. While at Stanford, I worked at the local university medical center where I assisted the scientists in the research labs. I helped run experiments, record data, and clean the laboratory equipment. I also read over the other scientists' journal articles to offer feedback before they submitted them for publication. I really want to perform research at a hospital so I can help scientists to learn more about genetic diseases in order to possibly find cures for some of them. Thank you for your consideration. I look forward to speaking with you about this position.

Sincerely,
Shauna

Cover Letter

Name: Shauna
Education: Bachelor's of Science in Biology from Northwestern University, Master's of Science in Developmental Biology from Stanford University
Job/internship Experience: Research assistant, 2 years at the Stanford University Medical Center.
References: Professor Jason Avery, javery@NWuniversity.edu, my genetics professor at Northwestern.
Nancy Short, nancyshort@email.com, the head research scientist I worked under at the medical center when I went to Stanford.