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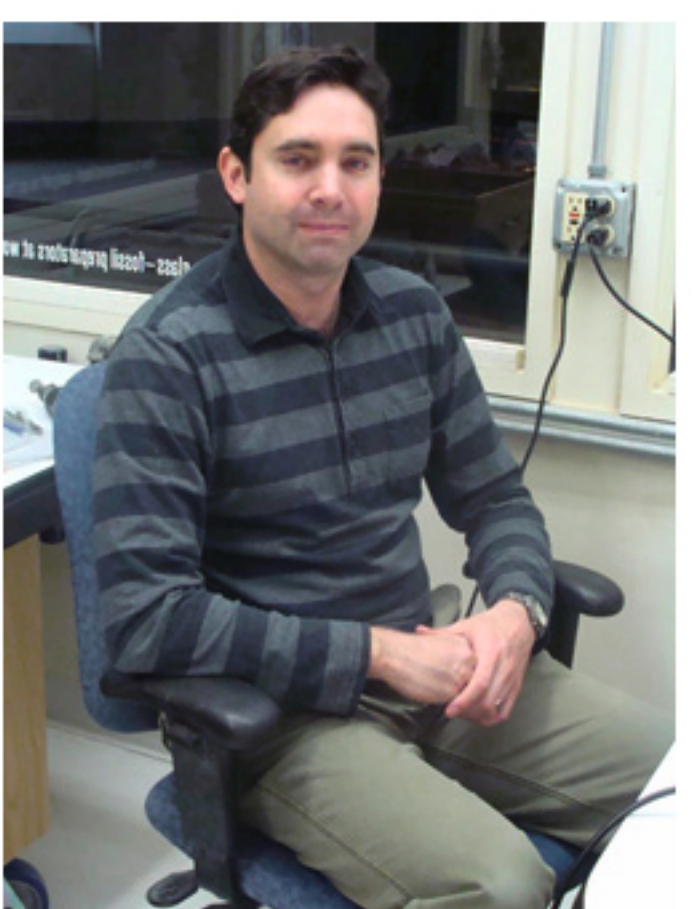


Field Museum preparator Jim Holstein describes his work in the fossil preparation lab. Town Travis/Medill

## Jim Holstein, the man fossils see when they need a bath

BY TOWN TRAVIS  
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Jim Holstein spends most of his time in a windowed lab on the second floor of the Field Museum of Natural History, known as the "fish bowl," cleaning rock away from fossil bones in preparation for research by curators or other academics. Holstein, 35, is a preparator in the vertebrate paleontology lab at the museum of Natural History, where he has worked for a dozen years. He has a bachelor's degree in anthropology with a minor in geology from the University of Illinois at Chicago.



Jim Holstein in the Field Museum's fossil preparation lab. Town Travis/Medill

**Q:** Why did you choose to become a preparator?

**A:** I always had an interest in the natural sciences, so when the opportunity came up to work at the museum, I started volunteering here for about a year. I did illustrations for a short period of time. But when a position opened up in one of the preparation labs, I sort of fell into that position of fossil preparations as a volunteer.

**Q:** How exactly did you "fall into" the position?

**A:** I was in the right place at the right time. There was a position open. And this is a difficult field to get into because there are few jobs and there's a lot of competition for those jobs.

**Q:** What does your job involve?

**A:** Specifically, my job entails cleaning off vertebrate fossils. We collect these fossils in the field and then we bring them back to the museum for research. Once they're in the lab, we have to remove all the rock, or "matrix," from around the fossil, and we use a variety of techniques to do that.

**Q:** Do you often work in the field?

**A:** Occasionally I do personally collect from the field. I've gone with several curators to Wyoming, Nevada, Argentina, as well as Africa.

**Q:** Describe one of the more interesting expeditions.

**A:** One expedition in particular was in 1998. We went to central Nevada to dig up marine reptiles. Specifically we were looking for ichthyosaurs [giant marine reptiles resembling fish], and we were able to find about six ichthyosaurs in the mountains in central Nevada. And we happened to stumble across one that was weathering out of creek bed, and so we spent the next two weeks excavating it. We had to leave it for the following season because it was such an inaccessible area. So we came back the following season with packhorses that we used to collect the fossils and carry them out of the mountain. It ended up being a new species of ichthyosaur, which we all are very proud of.

**Q:** Which do you find more rewarding -- working in the field or in the lab?

**A:** A little bit of both. I find fieldwork very rewarding because essentially for me it's a paid vacation. It's one of the perks of the job. You get to go out and collect things. And I love finding a new specimen. I love finding things that haven't been seen by human eyes for millions of years. But I also do love the lab work, because it's very tedious and time-consuming but it's also very rewarding. You can help science by your careful, patient work on these fossils.

**Q:** Does your work contribute mostly to research or to exhibits in the museum?

**A:** Mainly research. Occasionally we have display specimens that we put in our exhibits, but typically all those specimens are researched first and then put on display. But mainly it's going to be all for research purposes. They all go into our collections, for our researchers and visiting researchers as well.

**Q:** How do you feel about working in a lab that's open to the public?

**A:** Well, I've been doing this for a long time. The lab was originally built for Sue, the *T.rex* that we have on display now. And it was a big public draw. We wanted to bring the public into our lab environment so they could see what happens behind the scenes. It's been a fantastic educational tool for us. Now that Sue is complete, we do work for all the other vertebrate curators in the museum, and we have several different projects from all around the world that we are working on, like China, Argentina, Africa, as well as the continental United States. And it's wonderful to watch people's faces light up when you're working on something truly remarkable.

**Q:** Are there limitations on what you can work on in this room -- since it is public -- as far as research that isn't published yet?

**A:** There's really no limitations. We're protected by a nice thick piece of glass, which inhibits really high-definition photography of our specimens, and that's the main thing we would worry about, photographs of something new getting out there.

**Q:** What's your specialty in your work?

**A:** Well, I work with the preparation of vertebrate fossils and I use a variety of techniques to prepare those fossils. One technique I use is mechanical preparation, using air impact tools to chip away the rock, as well as using a variety of picks and dental picks and brushes on softer materials. But I also specialize in chemical preparation using acids. Some fossils are in carbonates, so you can dip it into an acid bath and it will dissolve away all the rock around the fossil. It's a very long and slow process, but it's very rewarding because you get the detail -- sometimes microscopic detail -- that's needed for scientific investigation.

**Q:** Do you require any type of protection when working with acid?

**A:** Absolutely. I don't do the acid work down here in the lab. I have a special fume hood up on the third floor of the museum, where we have an acid bath. When we do the work we use all the safety equipment: rubber gloves, goggles. The acid is diluted down quite a bit, so it's not going to harm you if it gets on your skin, but it will harm you if you let it sit there long enough of course. As I said before, it's a very long and tedious process. Some of these specimens take upwards of 12 to 18 months to complete.

**Q:** Is it ever frustrating to work on something for so long without seeing results?

**A:** It can be frustrating, but we generally have a lot of different projects going on, so we can mix it up a little bit and just have a lot of patience. And you know what the end result's going to look like, so that keeps you going.

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