

Interview with a Celebrity Cartographer: Jim Meacham

Lauren Tierney
University of Oregon
lauren.tierney13@gmail.com

Jim Meacham
University of Oregon
jmeacham@uoregon.edu

James E. Meacham is a Senior Research Associate at the University of Oregon, and Executive Director and co-founder of the InfoGraphics Lab in the University's Department of Geography. He received his MA in Geography from the UO in 1992, and has served as the president of NACIS. His interests include map and atlas design, and data visualization. He is a co-creator of the Atlas of Yellowstone (2012), Archaeology and Landscape in the Mongolian Altai: An Atlas (2010), and the Atlas of Oregon (2001). He teaches cartography courses at the University of Oregon. His current projects include the development of the Atlas of Wildlife Migration: Wyoming's Ungulates.

For his atlas projects, Jim ventures into the field with wildlife biologists, archaeologists, and fellow atlas collaborators to further understand the sense of place and landscape that make the areas he is mapping unique, and ties these important aspects into the cartographic products of the InfoGraphics Lab. Jim is also an incredible mentor for students who take his advanced cartography course, as well as for those who work with him in the InfoGraphics Lab. Jim has inspired me and many other students to pursue studies and careers in cartography and data visualization, and he continues to be an integral part of the University of Oregon geography department, as well as the broader cartographic community.

Lauren Tierney

What first drew you to the fields of geography and cartography?

Jim Meacham

When I decided to return to college in my early 20s, after I had taken a break from studying business management, I wanted to get a degree more closely following my interests in the environment and the outdoors. I was leaning towards programs in environmental studies or planning, but then I took my first geography class, Geography of Oregon, and it just resonated with me. I felt everything I was learning from that class was so relevant, and I really got excited about the field of geography. After that first class my sophomore year, I was hooked. I was leaning towards physical geography—geomorphology and hydrology—but then took Bill Loy's introductory cartography class. I really enjoyed the process of creating and designing maps, and it really tapped into an early interest in art that I had gained in high school. It was the perfect mix of my affinity for geography and the creative aspect of art.

I got an A+ in cartography, and took all the techniques classes Bill offered that year.

Lauren

Can you tell me a little about your experience working with Bill Loy?

Jim

Bill was a great teacher, and from him I learned about the importance of organization in cartography, attention to detail, clean design, and about building relationships with collaborators. He was always very positive and when projects were in stages that would get very stressful, he had a very calming effect. He would always say, "it will be fine." He also had a selfless quality, and truly cared about his students and the people he worked with. He loved Oregon, and his biggest project was the *Atlas of Oregon*, and through his sincere approach to cartography he was able to rally a lot of support and a large team to work with him on the atlas, both first and second editions. I learned a lot from him on how to manage large collaborative



© by the author(s). This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

projects. He was a very supportive mentor, which included guiding me in landing my first career job with the Oregon Department of Transportation (ODOT) after I finished my bachelor's degree. I returned to the Oregon geography program as a graduate student to help Bill set up a computer cartography lab with the main goal of building capacity to develop a second edition of the *Atlas of Oregon*. Bill and I worked together as a team to get the Lab going. The second edition of the *Atlas of Oregon* was not realized for several years.

Lauren

To clarify, was the InfoGraphics Lab founded immediately when you started your graduate program, or sometime later?

Jim

The InfoGraphics Lab's launch date was July 1, 1988, the day I arrived back at the University of Oregon, but it wasn't called InfoGraphics until sometime in the 90s. I was working at ODOT and took a leave of absence, which eventually became permanent. July 1st was the day when the Intergraph Unix workstation arrived. I learned how to operate the Intergraph workstation and MicroStation Computer Aided Design (CAD) software while working at ODOT. After the new system was set up, we immediately started making maps of local Lane County and maps supporting research for a few faculty members. Our first test atlas project was the *Atlas of Lane County, Oregon* published in 1990. Another early project was the *Official Oregon State Highway Map*, which evolved into my thesis research topic, focusing on the technological transition of moving from a manual to a digital cartographic process. We also started our campus mapping effort, and made the first base map of campus in CAD using newly obtained photogrammetrically derived digital files.

Lauren

What are some of your favorite memories working with Bill Loy?

Jim

One of my favorite memories in working with him was when we were doing the press check for the second edition of the *Atlas of Oregon*. Being there with Bill and Stuart Allan and watching the sheets come off was really an incredible experience and a great honor to be there. Other great memories included Bill Loy's annual canoe trip down

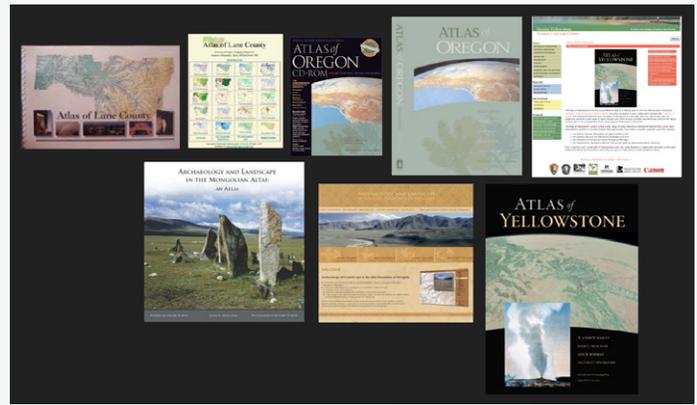


Figure 1. Past atlas products of the InfoGraphics Lab.

the McKenzie River with the Lane County Geographical Society.

Lauren

Over the years you have worked on a number of atlases. What have been the most rewarding aspects of working on these multi-year cartographic products?

Jim

I feel very fortunate to have been a part of so many atlas projects; I don't think a lot of cartographers get that opportunity. The second edition of the *Atlas of Oregon* was one of the most intense and rewarding experiences. Working on that project was where I really cut my teeth on high-end atlas making, working with Bill, Stuart Allan, and Aileen Buckley. Stuart was an intensely demanding Cartography Editor, which resulted in the great product we were all very proud of. We made it through, and I feel like I came out a much better cartographer for it.

In working on *Archaeology and Landscape in the Mongolian Altai: An Atlas* (Esri Press 2010) with Esther Jacobson-Tepfer, one of the greatest rewards was having the opportunity to work in the field and assist in surveying rock art and monuments that had never been documented.

At this same time we were working on the *Atlas of Yellowstone*, a project that again took me out into the field, and allowed me to apply what I had learned in the process of putting together the *Atlas of Oregon*. We focused on the Greater Yellowstone Area (GYA). No one had ever created a comprehensive atlas covering this intensely studied area, leaving the opportunity open to us. Our core atlas team included Dr. Andrew Marcus, who had previously done extensive research in the Yellowstone on the Lamar; Ann Rodman, the Yellowstone National Park GIS

coordinator; and Alethea Steingisser, the InfoGraphics Lab cartographic production manager. Many students worked on the project too. This turned out to be an amazing multi-year journey of annually going to Yellowstone and working with wildlife biologists, geologist, historians, and a variety of other experts to pull together their stories to include in the atlas. One notable experience we had was with the art curators at the Buffalo Bill Historical Center. We were given a personal guided tour of the 14-foot wide Thomas Moran painting of “The Grand Canyon of Yellowstone,” which at the time was on loan from the Smithsonian. Those experiences really make you appreciate the place, and the importance of that place to the people who have a strong connection to it. It would be really difficult to find a more incredible place than Yellowstone to make an atlas of.

Lauren

What has been the process for selecting atlas topics for you?

Jim

For the *Atlas of Yellowstone*, initially I was invited to come to one of Andrew’s classes to tell students about my advanced cartography course, in which I typically would have an overall theme that student projects would draw upon, where each student would have an individual theme. Andrew had the idea of focusing on the Northern Range, an area in the northeast part of Yellowstone that is a rich area for wildlife habitat, in which we could potentially focus on for an atlas. Soon after, while talking about the Northern Range atlas over microbrews at a geography department party, we said, “Well, why don’t we make an atlas of the *whole* Yellowstone National Park?”. This idea evolved to include the whole GYA, as Yellowstone National Park is not in isolation and the Greater Yellowstone Ecosystem doesn’t end at the park boundary. We presented the idea to Ann Rodman, and John Varley, Head of the Yellowstone Center for Resources, and they thought it was a fantastic idea to extend their public outreach goals. The project took on a life of its own, and over ten years of fundraising, relationship building, and of course compilation and production we were able to produce the atlas.

Lauren

For many of your atlas projects you have had the opportunity to go out into the field with researchers contributing to the atlas. How important do you think it is to experience the landscape you are mapping?

Jim

I believe it is critical to get to know the place that you are mapping. It adds credibility to the products you are developing, and it gives you a feel for the nature of the place that you can’t get just from GIS data, or even topographical data or aerial photography. You get to know the people that study the place intimately, and in experiencing the landscape with them you get to hear about their research and the observations they’re making. You get a sense of what is important about the place and what is important to include on the maps, in a much deeper way than you would remotely. This experience also potentially keeps you from having major blunders in your maps. I think it is hugely important.

For the lab’s current project, the *Atlas of Wildlife Migration: Wyoming’s Ungulates*, the opportunity to be out in the field with the biologists and participate in the primary data collection gave me a great appreciation for all that the scientists have to do to get the information they need for their research. I also gained a much more intimate understanding of how important the research and mapping efforts are to conserving the ungulate migration routes. It literally puts a face to all of the GPS data we have been working with over the years.

If you are not out in the field at least some of the time, you are not able to experience the full effect of the landscape. It is a chance to build bridges and relationships with researchers and scholars, as well as with the local people in the communities who are also stakeholders in the ongoing research efforts. That is a really big part of what I



Figure 2. Jim out in the field for the Archaeology and Landscape in the Mongolian Altai: An Atlas project.

love about making these atlases, is learning about these different places and their subject matter. I'm a geographer as well as a cartographer, and experiencing the sense of place enriches my work, and the fieldwork we participate in shows up in our maps and how they are designed. It is a really great way to expand my horizons and knowledge.

Lauren

What are a few of your most memorable experiences out in the field?

Jim

One of the most memorable experiences was from the Mongolian Altai project when we attended a Nadam celebration (a national festival celebrating the fermentation of mare's milk) in a valley near the border with China. We drove up with our group to the celebration, and there were lots of gers (yurts) and tents set up, and vendors selling food and crafts, and music playing. A horse race was in progress and other events. At one point we were speaking to some of the local Kazakhs, when all of a sudden a man with an air of authority approaches us and declares that he is the "Minister of Rocks" and demands to see our papers. We showed him, and he went on to inform us that we didn't have the right documents to be in that local area, and it escalated into a big argument that included our Kazakh driver and cook as well. Meanwhile, there was Chinese pop music blasting behind us out of this pickup truck selling stacks of shoes, and kids on horses were riding around the gathering group. It was very surreal. We felt we were moments from being thrown in jail when the Minister of Rocks was called away to announce

a wrestling match. He left, and the situation diffused. Next our cook, whose family is friends with the "person in charge" of the local region, said we had been invited over for tea in the ger with the community leader and his family. So, we went from fear of arrest to being entertained by the head of the community, which included being served chai, snacks, and cold beer, with him playing us beautiful Kazakh folk songs on an accordion for us. He assisted us in preparing the proper paperwork for access to the region, we took group photographs of his family, and we were on our way. It truly went from one extreme to the other.

For the *Atlas of Wildlife Migration: Wyoming's Ungulates* project, having the opportunity to participate in a mule deer capture with wildlife biologists was an experience that was truly memorable. The mule deer are captured by helicopter, and brought back to the group of biologists to measure weight, take blood samples, check temperature, and secure or replace a GPS collar on the animal. When it is released, one person holds the animal to release it once the blindfold is taken off. The first time I was able to do that, I felt this intimate sense of wildness, when that animal released off and bounced out of my hold I had on it, and sprung out and took off into the wild. I really felt that interface of captive and wildness that I had never felt before. And that was a really moving experience.

Lauren

The upcoming *Atlas of Wildlife Migration: Wyoming's Ungulates* and the research conducted by the associated Wyoming Migration Initiative (WMI) has reached multiple media platforms, from "live tweet events" to news to video to research publications. How has this changed/expanded the atlas production experience, to provide maps and data graphics for multiple uses?

Jim

With this atlas project we have been working with the Wyoming Migration Initiative to take advantage of social media for the atlas, particularly with live tweets and Facebook, as well as movies and short documentary films. The Red Desert to Hoback migration film, for example, was hosted on both the *New York Times* and *National Geographic* websites. These media platforms provide an opportunity to get our work out to the public much sooner. Atlas making is a long process, from compilation to iterations to design, as well as piecing together how we want these maps and page pairs to flow together to produce the atlas. These intermediate steps of videos and Facebook



Figure 3. Jim Meacham and Matthew Kauffman releasing a GPS-collared mule deer (photo credit: Mark Gocke, Wyoming Game and Fish Department).

posts, for example, get the information out there in a more timely way, and are aiding us in reaching our public outreach goals far in advance of publication time. I believe there is a lot of overlap between developing thematic maps for atlases and for these other media, and we are testing that with this project. More recently, we have even been experimenting with Mapbox Studio and CartoDB to represent this animal movement data for multiple platforms. This public outreach that includes the research of the WMI and the maps we design plays an important part in conserving these ungulate migration corridors through better communicating the existence and significance of these migration corridors to the survival of these ungulate herds. These offshoot projects also inform the public that the atlas is being created. Dr. Matthew Kauffman, the director of the project, is fantastic to work with, and

truly understands the role maps and cartography can play in conservation.

Lauren

What do you feel is the most important aspect of having students actively participate with projects in the IG lab, and what do you feel students might benefit from most in the lab?

Jim

Bill Loy really set the example for the teacher-student relationship, mentoring, and the importance of incorporating real, applied experience coupled with concepts learned in the classroom, and making that bridge in a meaningful way. We have carried that out in the InfoGraphics Lab, and have both undergraduate and graduate students bring in what they have learned in the classroom and apply it

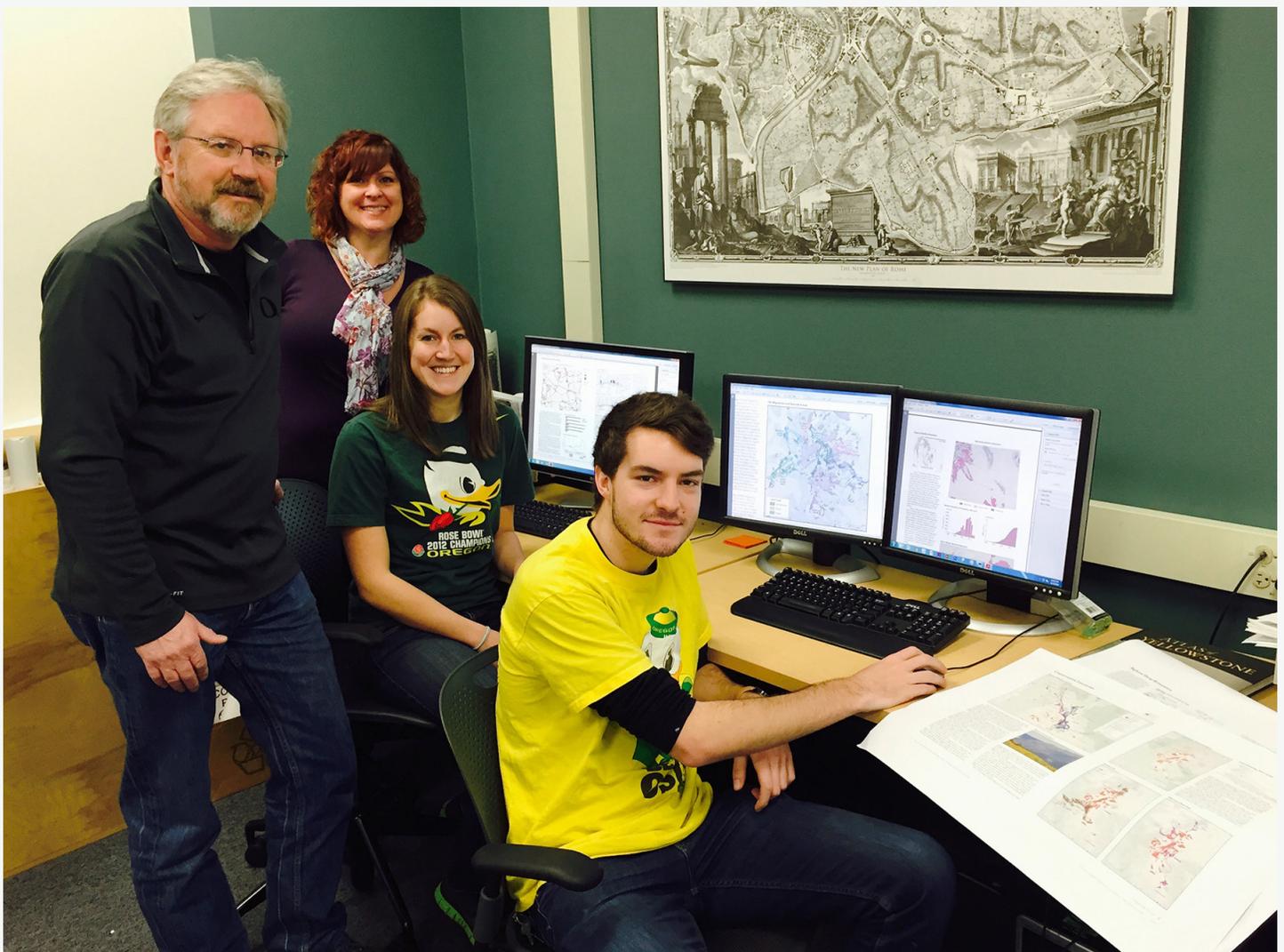


Figure 4. Jim Meacham, Alethea Steingisser, and students Lauren Tierney and Riley Champine work on the Atlas of Wildlife Migration: Wyoming's Ungulates.

to large ongoing projects. Having students in the Lab has always been a priority, and is an aspect of my job that I get the most reward out of. Publishing an atlas, making maps, and being out in the field is exciting, but to me helping students gain the skills they need to reach the career goals they want is so incredibly valuable. I never give a second thought to having students in the Lab, and we always budget students into the work that we do. Students first take courses in GIS and cartography, and some are from majors outside of geography. The students respond so well, are engaged in their work, and become indispensable

members of the team. Most, if not all, are able to go out and start their careers after they graduate, and it is part of how we judge how well we are doing. There's mentoring all the way down from my position to Alethea to the graduate students, who then teach the undergraduates, so everyone is consistently working together at all levels. We have a work environment that is fun and people can feel comfortable in, but is also a professional environment. There is an expectation when they come in that they are going to be productive, and we try to serve as good examples to prepare students to work in the professional environment.

REFERENCES

Jacobson-Tepfer, Esther, James E. Meacham, and Gary Tepfer, 2010. *Archaeology and Landscape in the Mongolian Altai: An Atlas*. Redlands, CA: ESRI Press.

Kauffman, Matthew, ed. In production. *Atlas of Wildlife Migration: Wyoming's Ungulates*.

Loy, William G., Stuart Allan, Aileen R. Buckley, and James E. Meacham. 2001. *Atlas of Oregon, Second Edition*. Eugene: University of Oregon Press.

Marcus, W. Andrew, James E. Meacham, Ann W. Rodman, and Alethea Y. Steingisser. 2012. *Atlas of Yellowstone*. Berkeley, CA: University of California Press.

Meacham, James E., director. 1990. *Atlas of Lane County, Oregon*. <http://geog.uoregon.edu/infographics/lcweb/lcindex.htm>.

Riis, Joe. 2014. *Mule Deer Migration*. <https://vimeo.com/88619272>.

Wyoming Migration Initiative. 2015. Accessed June 16. <http://migrationinitiative.org>.