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Interview with Dr. Brian Steele (BS)

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The University of Montana
Missoula, MT 59812

by

Dan Finch (DF)

DF: See where it leads us.. .So, why did you choose to become a faculty member here at the U?

BS: Why? I don't know. Well, I wanted to for a long time, but that's not really a very good answer. Primarily because of an interest in pursuing research and also in teaching, but primarily because of researching. It's just the easiest way to pursue research.

DF: All right. Who was the most influential person in helping you choose math, then as a career? And you know; how did they do that? Obviously, you know you said your bachelor's was in natural resources, so at some point you kind of veered towards math. Or maybe earlier, I don't know.

BS: Yeah. I started taking math classes. I came here in '78 after I got my bachelor's, and I worked for the forest service. And sometimes in the winter, it was a seasonal type work, so I wasn't always working in the winter. And so I started taking math classes here mostly because I was encountering statistics in the work that I did for the forest service

occasionally. But I took some math classes, and I took-- I think it was Yale-- I took a couple of courses from Yale in calculus. And so it has sort of been, it turned me away from biology and into math and into statistics.

DF: Okay. So, obviously you have just started here. So this question is--well, I'll only ask you the first part, but you know, what are your goals going into this as faculty member?

BS: What are the goals?

DF: Sure.

BS: My goals?

DF: The second half for everyone else was how have these been accomplished? You don't have to have an answer for that.

BS: I haven't accomplished anything really.

DF: I don't know.

BS: What was the question again?

DF: You know, just.

BS: What were my goals?

DF: .yeah, what would you like to be doing?

BS: Well, once I got here in place, I realized that teaching is also pretty important to me so I want be a good teacher. And still pursue research, and pursue research too. More specifically I want to develop a... sort of a research program. This isn't a particularly long-term objective, but it's a short-term objective in five years is to get a serious research program that's statistics in remote sensing and classification. So that involves having, you know, more than one person working on these projects.

DF: Okay, well let's... Since were talking about it. Let's do this question. And so, you know, what areas are you particularly interested in? Obviously you just answered a bit, and so, but let me just refine it. What are you working on now in your research? And is there somewhere, where, you know, myself or someone else can go and find examples of this? Publications or something along that line.

BS: Yeah. I'm working on classification rules. And so the idea is that in the context of remote sensing, we have a map which consists of a set of polygons. And these are unlabeled. And the objective is to label them with a vegetation type like Doug fir forest or sage brushes in contact. And so this information comes from two sources: somebody

goes out on the ground and figures, observes what the vegetation is in some sample of polygons. And then the rest of the information comes from a satellite which reads the spectral reflectance over big bands of the electromagnetic spectrum. So, you, and that's available for all the polygons, so the idea is to use the training data and mathematics that come up with a rule which will take the spectral reflectance data from any polygon and predict a land cover type for that unsampled polygon. And there are lots of examples of that. I can either give you, direct you to somewhere, or I can give you one or two.

DF: Sure. You know, at some point, maybe I'll just handle this.

BS: Well, yeah. I'll give you this, which is not exactly what I'm talking about, but it's closely enough related that you'll get the picture.

DF: Great, okay. Thanks, appreciate it. All right, so, you got your doctor in 1995 from here, and you know originally you said, kind of were in the Missoula area '78-'79. And if you took classes then and then came back, what do you see as changes in the department from, kind of when you were first here to now? And if you can identify them, you know, what do you think of those changes?

BS: Well, before I was a non-degree graduate student, and so I was only on periphery. You know I was only familiar with a few people. So what are the changes? I don't. I mean I can't pinpoint them. From all the way back then, I mean at the graduate level I don't have a very good idea. At the undergraduate level, I mean, I don't know. I mean, I've just never, I've never had a, I've never had a clear picture of what the department was really like.

DF: Sure. I know that feeling. Okay. Well, so, can you answer this? Do you think there's a, maybe a, best asset that this department has? Maybe it doesn't, maybe it's hard to define a direction of it, but does it have something going for it that...?

BS: Well, I don't know what the best asset is, but it does have a very strong asset, and that's that there are some very good teachers here, and as far as I know, that everyone is reasonably good. In that, that's fairly unusual actually in any faculty department for a state university or a more advanced university. If you go to a small college, then people have to be good. So, this place has got its, has a good mix of teaching and also a lot of things which can be done that you get with a larger university, so, it's a, I would say the asset is that it has small college attributes and also being size university attributes at the same time.

DF: Alright. This is a tricky question. Whether you have a defined answer or not, that's ok. You know in 1800, Hilbert proposed these problems, twenty-three problems for people to answer. Now, some of them have been answered; some of them haven't. So we were kind of curious. Do you have any idea of something that, maybe not necessarily a question, but an area that will become particularly worthwhile to be worked on, maybe in the coming century?

BS: Oh, I'm not old enough to answer that kind of question. I'm not.

DF: Sure, it's a not. Just thinking about it, it's incredibly ominous, but some people do have definite ideas.

BS: You know you have to have reached a level of maturity to answer this, to answer a question like that. I mean, you know, even 10 years out it's, you know if you asked me what's going to be hot in the next 5 or 10 years, I might be able to say something, but...

DF: Okay. So, this on a lighter note, but do you kind of have a story or some kind of anecdote in mind when you think about, why are you doing what you're doing? Or why did you choose to be here?

BS: Oh, well, I mean the reason why I'm here doesn't have anything to do with The University of Montana.

DF: No, and well I think for most people, that's probably the case, at least most that I've spoken with.

BS: So why am I doing what I'm doing? I mean, I don't have an anecdote. I mean I like statistics a great deal. And I love having a problem which I can solve. You know, when I was taking these classes back around 1980, I took 241 from Merle Manis, which is really kind of a bizarre idea when you think about it. And there were only 30 students in his class. And he would state questions or conjectures to this class of freshman and sophomores. And they were really, really interesting, and it got me excited, and I can remember asking him questions after class. I mean, I realized then that there was a lot more to offer in mathematics than there was in biology. That the ideas were, could be very sophisticated. And to some extent that's why I'm here. That is to say mathematics and statistics.

DF: Okay. While Merle was teaching 241?

BS: Yeah. It's pretty strange.