

Buswell, N. T. (2017). Narrative 5: Samantha Reed. In *Swimming upstream: Pathways of new engineering faculty at non-R1 institutions* (Doctoral dissertation). Pages 146 – 154.

#### Narrative 5: Samantha Reed

*Samantha Reed is an assistant professor at a Master's Institution. At the time of the interview, Samantha had been in her tenure-track position for a total of three months, and in a visiting professor position for six months before that. Since she knew that a position that focused on teaching was a priority for her, Samantha applied for jobs a year before being done with her PhD since she knew these jobs weren't as ubiquitous. In this narrative, Samantha details the experiences, motivations, and decisions that led her to be an assistant professor at a Master's Institution where her primary focus is teaching.*

#### **How I got here**

I went to [Undergraduate Institution], and because I was a first-generation college student, that was the first time I was exposed to faculty members and the whole idea of academia as a career path. However, I appreciated the faculty that had engineering experience, and since I had no clue what it meant to be an engineer, I basically said, "I'll look at both paths when I'm done, and explore all of my options." Ultimately, I decided to go in to industry after I was done, and basically what I said was, I'll find a company that will pay for my master's degree, and give myself 5 to 10 years. If I do the master's degree and still like the advanced classes, at some point in the 5 to 10 year point, I'll go back and get my PhD.

So that's what I did. I hired on at [a company] right after I finished my bachelor's degree as a systems engineer. The next fall I started on my master's degree, and after I finished my master's degree, [my supervisors] started pushing me into more leadership roles. And I realized I could do the leadership roles, but it wasn't as fulfilling to me as the engineering roles were. I was getting more drained with what I was doing at work. So that's when I started looking at going back. It actually took me three times of applying to PhD programs before I got in.

I finally got in at [PhD University, a Doctoral University: Highest Research Activity, at] which my primary advisor appreciated my industry experience and that I wanted to come back. And I was very open with him from the get-go that the R1 path was probably not for me but that I was keeping an open mind while I was there. You know, pointing out that I did this really

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intensive hands-on undergrad degree, that what I liked, that's where I thrived, that's where I think I want to go, but I've never been at an R1 school, so I'll keep an open mind.

So, I started at [PhD University] in August of 2013, took [qualifying exams] in August of 2014, got a contingent pass on both my written and oral [qualifying exams] and then started applying for positions in the fall of 2014, which everyone was quite surprised with. But when I started, because I already had my master's degree, it was possible to fit [my PhD] in three years, and so my advisor said, "look for job opportunities for the end of your third year, but if nothing happens, I have funding for you for your fourth."

When I was in industry, my favorite part of the job was mentoring the new engineers. And I liked working with – because I was a lab assistant and grader at [Undergraduate Institution], so I liked working with the students and so forth, and I'm like – I want to actually work with the undergrads, and I don't want to be penalized for doing that. I was getting the impression and I was told by more than one person that if you're teaching evaluations are too high on the tenure-track, you are doing something wrong.

The writing is hard for me, in some respects. So, the thought of having to bring the dollar amount of grants for tenure was just daunting for me. And I looked at assistant professors at [PhD University], and I was like – their entire life is focused on getting grants, and that is not where I see myself, I couldn't see myself, pushing myself to write that many grants.

So, August of 2014 comes around and there are positions open here at [Current Institution, a master's institution], and there are [two] positions at [Undergraduate Institution], which were my top two schools to go teach. Through some digging, I realized I knew somebody close on the search committee for all three positions. And so, what we decided, I talked to both of my advisors, and I said, "alright, here's my two dream jobs, I know it's a little early, but should I go after them? At the very least, I have a mentor on at least two of the search committees that if it doesn't go well, I'm sure I can get feedback from them which would help for the real job search the next year." And they said "yeah, you're right, these positions at these small schools don't come up every year, go ahead and apply."

[I] went through the whole process [during] the spring of 2015, so I was a year out from graduation at that point. I got the phone interview here [at Current Institution] and then the in-person interview here. The couple unique things here – they didn't require a research statement

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in my application package, which definitely sets the tone for what their emphasis is. Because in the job description, it explicitly states the percentage for teaching, research and service for their expectations. And their expectations are – I think it was 45, 45, and 10, from a teaching, research, and service perspective. Or maybe 50, 40 and 10. So they were definitely upfront in the job description.

Then I applied, did the formal application process. Then – I want to say it was probably the end of January, beginning of February, I did about a 15- to 20-minute phone interview with the department head and two members of the search committee. I think it was basically just – it was really short; I think just to make sure that what I was saying sort of aligned with what they were seeing on paper.

My job talk was a traditional research job talk, however, the advice I was given was to make it more interactive than you might do with an R1, so that people might get an idea for your teaching style. It wasn't an actual teaching demo, but they wanted it not to be a dry "here's a slide with a ton of data" sort of job-talk.

And the cool thing was, sometime between my application and when I arrived on campus to do my in-person interview, they had someone put in for a really oddly timed retirement. They were going to retire in December of 2015, which then opened up a position on top of what they were already searching for, so [the department chair] was like "what if you started in January?" and I thought "Oh, January sounds good, because that still gives me all of fall to work on my dissertation." From writing my master's thesis while working, I was really not looking forward to doing my entire dissertation while working. So that was really cool. I can get most of my dissertation done then before I started teaching in January. It ultimately ended up working out.

### **My preparations for teaching**

Back [when I was] in industry, we were doing a new feature for my department and they actually had me put a three-day workshop together for our department. Plus, I led some training sessions – we did some domain training, where an expert on one feature would teach the flight test engineers about that. So, I had a little bit of teaching experience [in industry], plus I went back and guest lectured at [Undergraduate Institution] every time I went back for the career fair, just to get some experience in front of a classroom. Which was good because then when I got to

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[PhD University], I was getting ready for my first position as a TA, and said [to myself] “whose grand plan was it for the introvert to go teach?” I had completely freaked myself out about teaching the first time. So basically at [PhD University], my first two semesters there I was a TA for our controls class in the department, and I was essentially completely in charge of two lab sections.

We did do [TA Training] with the teaching and learning center before school started, so we had a least two full days of teaching workshops before we started, and we were required to do micro-teaching, we went and did an eight-minute lesson for other grad students, and we were video recorded, and then we had to go watch ourselves, and get critiqued on that eight-minute lesson. Which was really – it really freaked me out, but it was really helpful.

Along the way, [during my PhD], I did things like [take] a college teaching class [taught by a man named Richard]. That class was really helpful in getting up and running here. Actually, [for my first class here], I started with the syllabus – I had a syllabus from the faculty member that taught it before me here, but a lot of it came from the syllabus I make in [Richard’s] class, I mean, that was a huge help. And having done that, and reading the literature, as far as getting myself up and running, because I defended my dissertation three days before I started teaching and had to have the syllabus and everything ready to go. So [Richard’s] class definitely [helped], I’m glad I was able to take it.

I think that if – especially if you are going teaching, that [Richard’s] class, or a similar class should be required. I wish I had – that was just one semester, and it was very intense, and then I did a few workshops with the teaching and learning center after that, but I feel like a more, longer-term focus on – as a future faculty program, would have been helpful. Because I feel like I lost some of that by not being able to keep up with it.

I did teaching certificates through our teaching and learning center while I was there, but all of that is elective. From an engineering perspective, there was only a handful of us getting those teaching certificates every year. So, I went ahead and did those teaching certificates – they don’t really hold any weight, they are not official certificates that show up on your diploma or anything, but because I knew where I was going, I sought out those and I made time for those activities. And it helped that my research was closely aligned with those things so I could double-dip.

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[My program at PhD University] was a lot more flexible in what classes you could take. I had to take 16 credits in the department, and the other 16 credits could be anywhere in the college of engineering. Because of the flexibility of my degree and being able to take classes anywhere in the college of engineering, I was able to take classes that helped me hit the ground running [as a faculty member], because I had already taken a lot of the technical classes during my master's degree.

I think that flexibility really helped, because not everybody has the time, or gets permission from their advisor to take the college teaching class. So that was a big help, and then right before I left, I took a creativity class, which really helped from a brainstorming and interacting with other folks' perspective. And then [for another class, I was] a project manager [and worked as a TA with another graduate student]. Basically, I was running an undergrad class, doing the lesson plans. We were given some handouts and some guidance, but the lesson plans were pretty much up to us, the grading was up to us, providing student feedback was up to us. I did that. There were two of us that were in the project manager role for that time, [the other woman] was an undergrad with very different career goals, so we thought about that as we split up [the tasks]. She was definitely more on the project manager industry path, she wanted to get more of the project management skills out of the class, where I wanted to get more of the classroom management – teaching skills out of the class, which actually worked really well with how we split up the work.

And then the other thing that I did, TAing for that class in my last semester, I already knew I was getting [the assistant professor job] and I knew what classes I might teach, so I went to the faculty member and said “I am going to be teaching this class in the spring for real, so instead of you cancelling lecture when you travel, can I just take over?” and so she actually did let me take over lecture at least three times that fall. And unfortunately, when I did – from early feedback with my lab students, more than one of them asked me to take over lecture from her, and told me that they only learned when I was there. Like – ok, that wasn't intentional!

It was reassuring, like hey, maybe I happen to be ok at this teaching thing, despite the freak-out and the introvert thing at the beginning. And I did have – at my first American Society for Engineering Education (ASEE) conference, I went to a workshop with a [professor from my undergraduate institution, and] he talked about putting his teaching-cape on. Which is an analogy

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or metaphor that has stuck with me, so I put my teaching-cape on and then come back [to my office] and hide.

### **The early days as a professor and what I am doing now**

[The] transition [from graduate school to being a professor] actually went pretty smoothly from my perspective. A couple things helped with that. The first term I was here, my department head knew that I was going to be finishing up my dissertation, so he scheduled me – a normal teaching load here is eight contact hours a week, which means eight hours in front of students per week. And because we don't have teaching assistants, that can be all labs. Which looks a lot like being a TA if you've just come from [PhD University]. For my first term here, [my department chair] put me into four lab sections, and two on Tuesdays, and two on Wednesdays, both in the afternoon, so it was a marathon of teaching labs because they are two hours and five minutes and there were only ten minutes in between, but it was a very small chunk – it was very blocked time from that perspective.

I sat in on their lectures because both of those classes are on my trajectory to eventually teach. So, I sat in on their lectures which helped me in the labs as well as get a feel for how good teaching professors actually teach around here. So, I was sitting in class for six hours on top of the eight hours in lab, and then, for one of the labs I actually went to her lab section to see how she did the pre-lab intro sort of thing, which made it really easy for me to recreate the lab later in the afternoon.

So, they were really great in getting me up and going, and because of how much prep was already done, all I basically had to do was grade, which was really helpful. But they gave me a lot of great tips along the way and watching them teach was really awesome. So that term actually went pretty smooth.

This [current term] has probably been my hardest term so far, just because of the unknown and trying to figure out what's the appropriate level to hit for a 100-level class. Especially because I've got the gamut – I did a quick survey on the first day, I have students, because of various reasons, because of transfer or otherwise, so I've got upperclassmen in there, as well as the entire range that you would expect for a freshman class. Like one of my students hasn't even had high school physics. And then about half of them have some sort of

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programming or first-robotics experience. So, trying to craft something so that you don't lose the people who are upperclassmen or had really awesome high school experiences, because it's too easy, but you also don't completely frustrate and overwhelm the students who are not as prepared, and that's been a real struggle for me.

### **What tenure looks like here**

Everything seemed way more laid back than I expected, but it was also a little weird because of the first six months being a visiting [professor] and not tenure-track; some things didn't start until now from that perspective, like I didn't have to do any service until now. I didn't get my first thesis student until the end of spring term. My department head told me my focus, other than my minimum for teaching for the first six months, was getting done at [PhD University]. So that was really helpful. Although that being said, I'm now in my third term and I feel like I haven't done anything research, I haven't done anything service, so now I feel like this term is sort of another transition in a way, because now I am officially tenure-track, now I have to start thinking about service, about my own research program and that sort of thing.

We actually have fairly detailed tenure requirements within our department, which is really helpful. They were provided to me when I got here. Basically, from a research perspective – and they actually make it a clear point of calling it scholarship and not research, because they're very much ok with it being applied; consulting with industry counts towards research here. Basically, their expectations are roughly three journal papers total, not per year, and then one to two conference papers per year. That's roughly the minimum paper count.

The research funding is essentially non-zero, not six-figures or anything absurdly high, and it can be industry funding, it can be NSF funding, and you have to show a track record of seeking funding, and again that can be consulting, that can be actual research funding through NSF, or even, I can go after the smaller grants at National Instruments or MathWorks for developing labs, and teaching related stuff.

From a research expectation, they are ok with me doing engineering education [research], but it can't all be engineering education. It has to be a balance of technical and engineering education. They haven't given me a specific breakdown, but I am trying to go down a path where there's overlap between my technical research and my engineering education research.

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From a teaching perspective, eight contact hours a week is the expected load, and then you are supposed to show in tenure that you are making improvements in your class. I haven't heard anything specific like I heard at [Undergraduate Institution] that there are so many times you have to teach a class before tenure, but they want you to show that you're improving in the classroom. They do look at your teaching evaluations all the way through, a teaching evaluation is required at some point on your way through. And then you also have to show how you are incorporating your expertise into the classroom. And sometimes that means developing a class; I am actually on the path to develop at least one elective in my area before tenure.

And then, from a service perspective, it's fairly modest service. Usually, the minimum they say is advise one student group, one department committee, and one university committee. And from a service perspective, we also have to show professional service and have professional homes, and one of those professional homes can be ASEE. So, for me, I have to show that I am regularly contributing to ASEE as professional service as well.

And then there's some other little nebulous things about contributing to [Current Institution's] Culture, those sorts of things, like collegiality, and those sorts of things. The institution culture [at Current Institution is] not entirely different than [Undergraduate Institution], but there's definitely, within a significant portion of the faculty, a lot of collegiality. I started right away – our teaching and learning center has weekly lunch talks, where they provide lunch and we go over something from a teaching and learning perspective, and that sort of community that regularly goes to those lunches is very collegial, very willing to help out and get you up and running.