

How Six Assistant Professors Landed Their Jobs at Baccalaureate Colleges and Master's Institutions: A Focus on Pathways and Teaching (Un)preparedness

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Abstract

Did you pursue your PhD because you wanted to teach at the college level? Do you find it tricky to balance your interest in teaching with the focus on research at your graduate institution? Are you hoping to do a lot of teaching in your future faculty job but don't know where to look for advice or what it would be like?

This paper shares the narratives of six assistant professors who are at institutions that largely focus on undergraduate education, such as Baccalaureate Colleges and Master's Institutions. The narratives include each professor's reasons for pursuing their positions; how they prepared for their job and what they wished they had done in graduate school; the interview process at their institution; and the uncertainties they faced.

This paper uses the novel emerging methodology of narrative analysis that is meant to connect readers with the stories of participants. Rather than focusing on themes present for many research participants, narrative research maintains the integrity of each individual's story.

In addition to the narrative stories included in this paper, I include a thematic analysis that looks across all the stories, so that we might make meaning out of the stories as a group. The thematic analysis section of the paper is useful when considering the larger implications of this research. For example, by examining how all participants reflect on their graduate school experience and what they wish would have been different, we can provide insight to current graduate students and their advisors. Graduate students might feel empowered to pursue a teaching opportunity despite it taking away time from research, and advisors might consider different ways of supporting their graduate students to achieve their career goals.

Six new engineering assistant professors, two females and four males, were interviewed as part of a larger research project exploring the pathway to and current experiences of faculty members at institutions of varying teaching and research activity. This paper responds to the following research question: **How do engineering assistant professors describe their faculty job search experiences and preparation for positions at Baccalaureate Colleges and Master's Institutions?** The findings reported in this paper focuses more specifically on how the assistant professors were able, and unable, to prepare for their teaching responsibilities.

This paper will likely interest graduate students who are considering academic careers and would like to focus on teaching in their future positions. Faculty members who mentor graduate students may also find this paper useful to understand how to best support their students as they pursue post-graduation options. Finally, future research efforts will explore how some of the findings and recommendations could be implemented into graduate programming and training, such as future faculty and similar professional development initiatives.

Introduction and Background

As an undergraduate student, I (the lead author) honestly believed that the primary role for all my professors was to teach. I also assumed that each one of them pursued their jobs because of

their love of teaching. I remember the day when I was told that teaching was a requirement of the job, and that most of my professors are likely in their positions because of their love of research, not teaching. However, I was also sure that some of them honestly did want to focus on teaching.

As a graduate student who is interested in university teaching and how professors are trained to teach, I have focused my dissertation on engineering assistant professors who are in faculty positions at institutions that focus on teaching. Engineering is particularly interesting field to study faculty at Baccalaureate Colleges and Master's Institutions at since there are fewer faculty at these institutions. In engineering, approximately 65% of faculty¹ are at what the Carnegie Classification of Institutions of Higher Education calls Doctoral Universities with Very High Research Activity² (formerly referred to as "R1: Research Universities (Highest Research Activity)"). This means that most PhD students, including those who are interested in teaching, are getting their PhDs at institutions that primarily focus on research.

It is further worth noting that teaching quality at colleges and universities in the United States has been in the spotlight in recent years. There has been a national call to bring more attention to improve the quality of engineering teaching, potentially by changing the way faculty members are rewarded for their teaching efforts within the academy³. Poor teaching has been blamed by many students for the reason they leave engineering⁴. More recently, studies have shown that students might choose to stay or leave undergraduate engineering degree programs based on their experiences in the first and second year⁵. With teaching quality potentially impact student's success in engineering programs, it is natural to wonder about teacher training, which is what we will consider next.

Graduate school is most commonly viewed as the entryway and socialization into the academic career of faculty member⁶. Socialization, in terms of doctoral students in training, is best understood as the process of making sense of the academic career or other career pathways after graduation⁶. This socialization includes a great deal of preparation in the forms of mentoring and advising, which largely shape a graduate student's perception of their future career. However, it has been noted that college teaching is a skilled profession unlike others in that it generally does not involve specific mentoring as part of the educational process⁷. Furthermore, some college teaching positions focus on the teaching aspect more than others, and STEM (science, technology, engineering, and math) doctoral students are often not aware of the differences in emphasis among various faculty positions⁸.

Faculty positions consist of three main components: research, teaching, and service⁹. Although some engineering graduate students will continue on to faculty positions, the teaching component of faculty positions typically receives little or no attention as a required component of graduate-level engineering degree programs^{9,10}. One main repercussion of this issue is that new faculty, especially at doctoral universities with very high research activities, are often not prepared to handle and balance the demands of a faculty position that includes teaching. This issue could be even more pronounced for new faculty at institutions that put more emphasis on teaching, such as Baccalaureate Colleges and Master's Institutions.

By interviewing assistant professors at Baccalaureate College and Master's Institutions, where fewer engineering PhD graduates end up in faculty positions, I am bringing to light faculty positions that are usually overlooked, and studying faculty at these institutions might have many benefits. For example, some graduate students might be introduced to a faculty lifestyle and balance that they are interested in, and pleased to find out that not every faculty position is like

what they have observed among their advisor and other faculty at their graduate institution. This realization has implications for diversifying the academy, as perhaps these positions that are not as commonly known, will appeal to a more diverse group of graduate students.

Literature Review

There has been significant interest in examining the preparation of graduate students for academic faculty jobs, yet most of these studies have not been specific to STEM fields⁶. One possible explanation for the lack of studies in STEM fields is that many STEM graduate students do not pursue academic careers as frequently as graduates in other fields¹¹. In fact, over 73% of engineering PhD graduates pursue post-graduate work in industry¹². Researchers, administrators, and policymakers are interested in better understanding graduate student pathways as is demonstrated by the forthcoming Early Career Doctorates Survey¹³. The pathways towards academic positions are clear, however, specific pathways within the academy are not distinctly understood. For example, disciplinary differences in graduate training such as admission criteria, advising styles, and when a student is deemed worthy of conferral can have a large impact on the graduate student experience¹⁴. Also, disciplinary differences regarding research methods, what questions and outcomes are valued, as well as the relationship between teaching and research vary¹⁵. Therefore, it is necessary to consider the graduate training and career pathways of engineering faculty members specifically.

For graduate students interested in pursuing positions at institutions that have varying attention towards teaching and research, most of the information is anecdotal. There are some papers about the job search at teaching focused institutions¹⁶ and the benefits of teaching at such institutions¹⁷. However, there is a dearth of systematic research on engineering faculty at teaching focused institutions such as Baccalaureate Colleges and Master's Institutions.

Socialization in graduate school is particularly important here, because graduate students will most likely not be exposed to faculty at Baccalaureate Colleges and Master's Institutions (because those places grant very few doctorate degrees if any at all). If graduate student socialization through the apprentice model is meant to prepare graduate students to become professors, then they are apprenticing to become professors at the same institution type at which they are receiving their PhD, namely doctoral universities with very high research activity. Although almost all PhD graduates receive their PhD at Doctoral Universities, some receive their undergraduate degrees at a Baccalaureate College or Master's Institution. In this case, these students will have been exposed to faculty at institutions that focus more on teaching, which likely impacts their understanding of how faculty positions vary.

To better understand what graduate students think about future faculty positions, the theory of faculty schema does a good job explaining why graduate students pursue faculty positions¹⁸. Schema, as originally proposed by Piaget in 1926, are abstractions of an individual's lived experience and can help interpret one's life events, including future events¹⁹. In relation to graduate school and faculty positions, graduate students will develop schema about the experience of graduate school and future opportunities. Since most graduate students are trained in an apprenticeship model, they often develop faculty schema, or ideas and thoughts about the reality of faculty life, based on observations of and interactions with their advisor, as well as with other faculty. This idea of a faculty schema is especially intriguing in the context of graduate students who pursue positions at institutions with different teaching requirements. Graduate

student are typically familiar with their advisor's faculty role, most likely at a doctoral university with the highest research activity classification. Therefore, it is important to understand how these schema hold up to the expectations of current faculty members at Baccalaureate Colleges and Master's Universities.

In an effort to understand the experience of applying to and preparing for a faculty position at a Baccalaureate College or Master's Institution, I interviewed six assistant professors. This paper details the methodological approach I used to conduct interviews, construct narratives, and make sense of the data. I include all six of the narratives as an appendix to this paper. In the findings and discussion section, I describe the results of my thematic analysis.

Methods

Narrative inquiry^{18,20} is used in this study to examine six assistant professors at two types of institutions: Baccalaureate Colleges and Master's Institutions. Narrative stories were sought in order to provide a thick description²¹ of the experiences of engineering assistant professors and to provide stories that readers will readily be able to connect with²². Assistant professors in tenure-track positions are examined exclusively in this study. It is worth noting that the experiences of non-tenure track positions often focus more heavily on teaching, yet faculty in these types of positions are out of the scope of this study.

This work brings six stories to light through the use of narrative analysis. Motivated by Vygotsky's zone of proximal development²³, which is based on the idea that a person learns best when they are guided by someone just a little further along a path than they are, these stories serve as mentors for future generations of graduate students considering pursuing faculty positions at institutions with more teaching activity.

Recruitment of participants

I used a quota sampling²⁴ approach through the use of personal networks for the recruitment of my participants. After cross-referencing institutions with engineering programs and their respective Carnegie Classification, I used my network as well as the networks of my committee members to identify participants. I reached out via email to participants that fit my criteria (below) and shared with them more information about the project. If they were interested in participating and did not have further questions, they completed an IRB consent form and then scheduled an interview with me which was conducted and recorded online via Skype. All study procedures were conducted in accordance with Purdue University IRB protocol #1606017812.

Characterization of participants

For this research, all participants were selected to have earned their PhD at a Doctoral University with the Highest Research Activity Classification. This was intentional in order to highlight the misalignment between graduating from a Doctoral University that focuses primarily on research and being an assistant professor at an institution that focuses more on teaching, such as Baccalaureate Colleges and Master's Institutions. Additionally, since this study focuses heavily on the pathway to the position and on graduate school preparation, participants had to be within the first three years of their first assistant professor position. Details about each participant are included in Table 1, and the full criteria for participation are listed below:

Table 1: Overview of participants

Institution Classification	Narrative	Name (Pseudonym)	Gender
Baccalaureate College	1	Steven Bradley	Male
	2	Valerie Michaels	Female
	3	Opie Hampton	Male
Master's Institution	4	Samantha Reed	Female
	5	Christopher Davis	Male
	6	Jason Talbert	Male

Participation Criteria:

- Assistant professor seeking tenure
- Employed at one of two institutional types: Master's Institution, or Baccalaureate College
- Within the first three years of first tenure-track faculty appointment
- Fewer than three years of experience between doctoral conferral and start of faculty appointment
- Doctorate earned at a DU-Highest institution
- At least one women in each institutional group

Data collection

I conducted one ethnographic, semi-structured interview with each participant that lasted between 90 and 120 minutes via Skype. An ethnographic approach was chosen because of the focus it places on the participant as the informant²⁵. Since this research is significantly concerned with participants' individual stories, I wanted to emphasize that the participants themselves knew their story best. Similarly, I encouraged the participants to share the aspects of their story that they viewed as important and relevant, rather than only the parts I thought were most interesting.

Data analysis

I transcribed the audio interviews using the ExpressScribe Software and then identified critical incidents¹⁹ in the transcriptions related to the job search process and the motivation(s) behind the search. I then constructed the narratives based on these critical incidents, only using my own words to help with clarity and flow. The transcripts were coded verbatim, except for the exclusion of crutch words and phrases such as "umm", "you know", any instances of stuttering, etc. I organized each narrative into major themes that are consistent across each narrative, but the narratives can be read individually or as a group. This paper more specifically focuses on the discussion surrounding the job search process and why these professors wanted to pursue positions at Baccalaureate Colleges and Master's Institutions.

The main purpose of this paper to present graduate students, past and present, with narratives about pathways into academia that focus on teaching. I include these narratives as an appendix to this paper. In the discussion, I present a comparison of the six narratives. In this exploratory phase, I looked for similarities and differences among the participant's and how they realized they wanted to pursue a position at a Baccalaureate College or Master's Institution, what pushback they received as graduate students, and what strategies they employed in order to persevere.

Findings and Discussion

In this findings and discussion section, the six narratives are considered as a group to emphasize the similar yet varied experiences of faculty members at baccalaureate and master's institutions. From an exploratory perspective, three themes are identified and discussed: 1) support and pushback for pursuing this type of position; 2) strategies for job applications; and 3) teaching (un)preparedness.

Support and pushback for pursuing this type of position

Even though most of the assistant professors in this research described knowing that they wanted to pursue a career focused on teaching, they also knew that this was an uncommon path. This is in line with research about graduate students, which says that graduate students are generally more prepared for research focused positions¹¹. Some participants knew that these types of schools existed, i.e., one's that focused on teaching. For example, Opie and Samantha attended similar types of schools as undergraduates. Others, such as Steven, Christopher, and Jason, had to go to their network of colleagues and family members to learn more about institutions that focus on teaching. It is particularly intriguing that some participants felt like this pathway was one of failure. In fact, Jason describes that the scariest part of choosing to go to a Master's Institution was the feeling that others would look down upon him.

Not surprisingly, almost every participant's advisor played a major role in their story. This makes sense in terms of the theory of faculty schema, which says many graduate students base their understanding of faculty lives on their advisor¹⁹. In the case of these participant's, the advisor was important in realizing that the participant did not want a life at a research university. For example, Steven points to his advisor as having a good balance between his faculty position and life for an "R1" school, and that he just couldn't see himself writing grants all the time. Samantha and Christopher had a similar hesitation about pursuing grants, and wanting to be able to focus on teaching.

On the other hand, even if these participants realized they didn't want their advisor's type of faculty position, their advisor still often played a critical role in supporting their graduate students to achieve their goal pursuing a position that focuses on teaching. In Steven's and Valerie's cases, their advisors encouraged them to take courses on college teaching. In Obie's, Samantha's, and Christopher's cases, their advisors afforded them the opportunity to teach a course. In Jason's case, his advisor told him to go to the place that suited him best personally, in the end. However, although most participants describe being supportive of this pathway, many advisors did not have much advice to offer. For example, Steven and Christopher both describe their advisors as supportive but largely unhelpful.

Strategies for job applications

Since most participants described their advisors not being very helpful in the process of searching for more teaching-focused jobs, the participants had various approaches to their search. Advisors were likely not very helpful since their impression of graduate school is often to prepare their graduate students through the apprentice model, for positions similar to their own¹⁵. Even with only six participants, we can see that approaches to the job search process, the interviews, and the jobs themselves, vary widely. For example, Valerie, Opie, and Samantha knew very well that a teaching oriented position was all they would consider, and only applied to those types of institutions. Samantha even went so far as to systematically creating a spreadsheet of engineering schools that she cross-listed with the Carnegie Classification list. Others, including Jason, applied to many institution types, and even applied to industry jobs based on his advisor's recommendation.

The on-campus interview experiences seem to be fairly comparable across the six narratives, with most of the participants describing a day long process that included a teaching demonstration. However, some participants had to give a research talk, such as Samantha, despite the fact that her application did not require a research statement.

For some participants, having a supportive colleague or family member also made a difference in their job search and application process. Christopher's sister was also at a primarily undergraduate institution and was able to offer him advice. Steven leveraged some connections he had with colleagues he met through conferences and asked them to look over his teaching statement, since he felt like he didn't know what those institutions really expected.

Without much support from advisors, to whom graduate students generally turn to for advice, the participants needed to be creative and flexible about their job search. This potentially underscores that all institutions, especially Baccalaureate Colleges and Master's Institutions, are all unique and applicants must be flexible to be successful on the job market.

Teaching (un)preparedness

The literature points to an overwhelming consensus that graduate students are not adequately prepared to teach¹¹. Often, graduate students with only one teaching experience are competitive applicants for teaching positions, which is even the case for the participants in this study, all of whom have large teaching responsibilities in their current positions.

Most of the six faculty members in this study described having some teaching experience, even if it was not required, but all except Jason describe needing to go out of their way to get these teaching experiences. Jason was offered a teaching assistantship during his master's program, but then did not have any teaching opportunities in graduate school beyond being a grader. However, the narrative of most of the participants was that they knew they wanted a position that focused on teaching, so they made sure they got teaching experience any way they could.

Valerie describes being glad she was on fellowship, but that it almost kept her from teaching in graduate school entirely. She managed to convince her department to let her teach a summer course as a volunteer. And while Opie's graduate studies took a turn when his advisor left for another institution, he was still able to graduate under his advisor's supervision but at the same time was able to do more teaching due to the greater flexibility afforded by the situation. Steven

sought out an adjunct position during his research based post-doc position to ensure he would get some experience in the classroom. Samantha guest lectured at her undergraduate institution while working in industry and then sought out teaching certificate programs in graduate school.

Christopher had supportive advisors and committee members who he said were happy to have him as a teaching assistant, but yet, Christopher wishes his graduate program would have allowed and encouraged him to take classes on teaching. Opie more specifically suggested having two PhD tracks: one for research-focused and one for the teaching focused students. Valerie also wishes a teaching component would be included in graduate programs.

As this overview suggests, many graduate programs in engineering do not provide many opportunities for graduate students to get teaching experience, even if they really want it. Furthermore, research positions for graduate students are often viewed as more prestigious than teaching positions. Graduate school in engineering is designed to prepare students as independent researchers, and therefore has limited possibilities and support for those that want to pursue a teaching focused position.

Conclusions and Future Work

This research focuses on the experiences of assistant professors at Baccalaureate Colleges and Master's Institutions, an understudied subset of engineering faculty. Through ethnographic semi-structured interviews, six narratives were constructed to share each participant's story individually. These stories capture, in the participant's own words, their reasons for choosing their institutions, the support they received along the way, what the job search process was like, and how they were prepared – and not prepared – for teaching.

As the narratives are intended to be read by graduate students and faculty, professional development workshops, such as those offered in preparing future faculty programs, would be an excellent venue for me to explore how the narratives might impact current graduate students directly. Additionally, I will present the full narratives, including reflections on tenure and current responsibilities, in my dissertation. The narratives of an additional six participants, who are at Doctoral Universities with Higher and Moderate Research Activity will be shared as well.

From the six narratives presented in this paper, we can see that the experiences of faculty at Baccalaureate Colleges and Master's Institutions are valuable and could help inform graduate programing and faculty development. Graduate students should be provided with an understanding of various faculty positions so that they can make informed decisions about where to direct their training and where they might want to go in the future.

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Appendix

The following six narratives were constructed by me (the lead author), however, they were written in first-person from the perspective of my participants. This was done intentionally, so that the narratives could act as the stories of *more competent others*²³ and tell the stories of engineering faculty at master's institutions and baccalaureate colleges to current graduate students and faculty. Since the stories of people taking a path less traveled in engineering academe are not well known, I wanted each narrative to stand alone and tell each informant's story, as well as to be comparable with other stories. Readers will be able to connect with others' stories as well as see how the stories are similar and different to one another and other stories of pathways and perseverance.

These narratives focus on the participants' pathways to their current positions, including the reasons they pursued their job, what the job search process was like, what support or deterrence they experienced, and how they were and were not prepared for teaching.

Narrative 1 – Steven Bradley

I wouldn't say it was a bad experience in grad school at all, like a lot of people. It was stressful at times, but I had a really good advisor, a really good understanding advisor, I did not feel pressure to be in the lab 24/7 like some of my colleagues who I noticed were, and I think he was a really good model in terms of work-life balance, especially as compared to some of the other professors I observed.

Even still, it's a balance, it's always sort of comparative. It was very good balance for R1 academia. And I – if this is the best case scenario, I'm really not sure this is the sort of life style I want to be in. Additionally, I was coming to realize that while I was fine at doing lab work, at taking a problem and figuring out how to do it, I wasn't really good at coming up with problems in the first place. Which meant that I didn't feel confident in my ability to support myself through grants as my primary objective.

At the same time, I was realizing, what I really like about academia is helping people, helping students. And helping them to know the material first, but on a broader scale, helping them to know the field, to know life, to figure out what sort of career did they want. Somewhere halfway through is when I decided, you know, I like academia, I could probably go into industry and be fine, but it's not really what I feel passionate about. But at the same time, the R1 route is definitely not for me. That's when I decided to focus on getting in somewhere where I would be able to teach, where my primary responsibility was to teaching.

As great as my advisor was, he didn't really have any advice for me, in terms of that career path. Through a couple conferences and what not, I did end up making a couple connections at teaching based institutions, and so I started to leverage them a little bit. Just like, "hey can you check out my teaching portfolio, can you give me some advice on what to look for in schools and interviews?" There was a course that was offered through the school of education at [PhD University], it was basically college teaching 101. That was really helpful. I had talked with my advisor and he suggested taking this course at [PhD University], so he was supportive of that. I found it very helpful and I did apply to a few positions. However, I wasn't sure, what sort of experience do these schools want you to have if you're going to be mainly teaching? So I did apply to a few schools, and then I did a year adjuncting, slash half post-doc.

So in the spring and early summer during [my first year of my post-doc], I decided what I need to do is get more experience teaching directly. Pretty much I looked at all the schools in the [area] and looked for any that had adjunct or part-time positions that they were advertising in chemistry, physics, engineering. Just to get something. And I did get one.

I started off teaching physics labs, they started me off slow. That first semester I was still doing a full-time post-doc as well, I had a lab section. I was able to carve out some time. That was really good. I was learning a lot about teaching. About – really a lot about student – interacting with students, and dealing with students who were not really all that interested in being in the class. Because I had never had that experience myself. I mean, even if I didn't care about the subject matter, I still wanted to do good in the class – I still wanted to achieve as much as possible.

Overall, I was satisfied with how that went. In the meantime, I was continuing my job search, and by the time that semester ended I had interviewed here at [Baccalaureate College], and had accepted the job. The reason I ended up selecting it is because they offered me the job. And at the time, I didn't have another interview, and I had been on 11 campus interviews at that point, so I probably would have accepted just about any offer! The interview, I think was pretty typical of a lot of the interviews that I went on. It was one day. I had a teaching demonstration, they let me pick the topic.

I think that's just the difference in if the primary goal of your institution is to advance scientific research versus to graduate good educated engineers, that's going to come out in the people that you hire, in the way that your program is structured. But like I said, I felt pretty aware of that going in, so I wasn't really surprised to see that. I would say even more so at [Baccalaureate College], perhaps because it feels more of a community here. [When I was an adjunct, that institution] – they cater a lot to – the get a fair amount of people going back for degrees, non-traditional students I guess. [Baccalaureate College] is more, come here for four years, there's a monastic community on campus that is its own little – it's very communal in its nature anyway, and the faculty here – if that's not what you're looking for, you'll probably not end up staying here. The faculty, they are here because they like that sort of environment.

Narrative 2 – Samantha Reed

I went to [an engineering focused school for my undergrad], 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 [an Aerospace Contractor] 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 to [PhD University], 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 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 quals in August of 2014, got a contingent pass on both my written and oral quals 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 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 University], 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. 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.

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 – like 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 University] 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 [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.

Along the way, [during my PhD], I did things like [take] a college teaching class. 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 made in that college teaching class, I mean, that was a huge help. 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.

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. I think that if – especially if you are going teaching, that [college teaching] 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 [throughout graduate school].

The couple unique things here [while I was applying] – they didn’t require a research statement 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 here at [Master’s University] 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.

Narrative 3 – Christopher Davis

What really got me interested in teaching as a career was in undergrad at [Undergraduate University, which was also a Baccalaureate College]. Starting my sophomore year, I got the opportunity to be the student teacher for an introductory digital design lab. It was basically a freshman seminar; we took them through a few basic digital design experiences, taught them some digital logic, how to bread board circuits. Honestly, I just had more fun doing that than I did working on the high stress projects and other course work.

So from there I decided I really wanted to be involved in education, but I kind of settled on teaching college students because, I figure anything pre-college level, you always have a good number of students who just don't want to be there, who have no interest in your subject matter. And I figured with college students, you would get a dedicated group of hard working, talented students, who at least value education to some extent. From there, I worked hard, applied to a bunch of different grad schools because I figured to do the type of teaching I wanted to do, I would need a PhD. And, especially to teach at a top level undergraduate focused place, because they don't produce as much research, it seems like, at least at the time it seemed like, one of the ways that [Undergraduate University] distinguished itself was by recruiting these faculty who did their graduate work at top tier institutions. So I really focused on trying to get in to a top tier grad school. And I was lucky enough that I got into [PhD University] for the MS/PhD program.

By the time I got through to the end, I still liked the idea of teaching but I wasn't as married to it as I was out of undergraduate school. So I actually applied to jobs both in industry and in academia. Also, I knew that I didn't have a ton of publications during my grad program, and I knew that if I did go into teaching, I really didn't want to be the R1 type professor, where I spend all of my time writing grants and was expected to publish all the time, and where the track to tenure would be this awful journey of no sleep and working all the time. And maybe it's not like that at all the R1s, but seeing what the tenure track professors at [PhD University] went through, – they just didn't sleep.

So I ended up applying to PUIs [primarily undergraduate institutions] and institutions that granted master's but no PhDs as well as some of the industry jobs. For the most part, [during my interviews at PUIs], I just [tried] to give honest answers to the different questions that I got. Tried to have some anecdotes and lessons learned from my TA experience ready to go before the interviews, just keeping that sort of thing in mind, so I'd be prepared. One thing that made it much easier for me looking at a PUI, my older sister, she is a professor too, and she had just done the search a year or two before I did for a PUI, so I got a bunch of good advice from her.

One of the things she told me is, with these types of schools, a lot of the applicants, they're mainly looking at an R1, they don't really know what it's like to be at a PUI, to put teaching first, so the main thing you want to get across in any of the interviews is that you know you won't have PhD students, that your primary job function will be teaching, that you are ok with that, and that any sort of research that you propose to do at the institution can be done in the limited amounts of time you have with undergrads. So don't propose some big multi-million-dollar research program. And so I just tried to focus all my answers on that, and I think, for me, given my teaching style, I always felt I was the best, most effective in things like office hours when I had one-on-ones with students because you really get to know them, get to see their challenges, their struggles, tailor the content to them, and think a lot about – find out about their background, and it makes you rethink a lot of the assumptions you have about what your average student is like. That sort of thing. So I had spent a fair bit of time thinking about that, and it turns out, that's the kind of stuff they eat up at these types of interviews. For me, I could just talk about my TA experiences, and trying to reach a student who is really struggling with the material. And going from that lived experience, I think made me a much more powerful candidate than someone who hasn't had those experiences, or viewed TA-ships primarily as a funding mechanism.

I ended up getting an offer from [Master's University] and looking at it, I still wanted to teach and give teaching a try. I think it was that combination of factors that led me to accept the position at [Master's University], both still wanting to teach while recognizing that going into industry wouldn't be a bad choice either, just not my first choice, and kind of wanting to get away from the culture [of the area where I went to grad school] a little bit.

I did have support in the sense that my advisors and committee members were always happy to take me on as TA and give me opportunities to help design some course material, that sort of thing. And I've heard there are some advisors who are kind of hostile to that idea, because they want their students to go out, and go to an R1 and do great things research-wise. I will say the flip side is coming from a place like [PhD University] in electrical engineering where a lot of people will either – most of the people who go into academia go into R1s and a lot of people also go to really high power jobs in industry, research labs for computer companies. They didn't have a lot of knowledge of what it meant to be a PUI. So a lot of times the best advice they could give me was to say, "well one of my former students I think is teaching at that type of institution now, here's their email, you should ask this question to them." I guess it's kind of supportive in the sense that, I would be supportive of a student who came to me said they were really interested in writing poetry professionally, I'm all for it, I just don't have any expertise that could be of use.

I would TA where I could, and for the most part, that was a lot of fun, and you always had some great students. It was always kind of a mixed bag, but it was still enjoyable so I still signed up to do it. I *also* took some courses from one of the professors there in pedagogy and teaching engineering for fun during various quarters during my PhD. For fun and also potential professional interest. I did some workshops on how to teach, that sort of thing. If I could go back to change it, I would think having a master's track that emphasizes engineering education would be a breadth area, or we could take courses in that. Because I felt, some of the breadth courses I took, they were definitely interesting, but after a certain point, stuff that I really didn't have that much interest in, may be good to know, but I was kind of just looking at what course requirements I still hadn't met, and go on ratemyprofessors to figure out how I could satisfy those with the least number of hours. I think I would definitely change that.

Narrative 4 – Jason Talbert

I did a co-op [during my undergrad], I worked in a cubicle and hated it, and so I had this, not quite an existential crisis, but I was like, oh my gosh, what am I going to do? I don't want to work in a cube my whole life. And around that time, a professor approached me and asked if I wanted to be a teaching assistant for a lab based micro-controllers course. And I said, ok, and he said, we'll pay for your master's, and I said, great! So I taught introduction to electrical engineering and just fell in love with teaching at that point, and said, alright, this is what I want to do. So anyway, I talked to the professor, and he said, well you need a PhD, which is a research degree, and you have no research. That's when I realized I want to pursue the PhD path - finding the joy in teaching.

At [PhD University], there really weren't many opportunities to teach, and I was just like, well this is the necessary evil of doing research, but I absolutely fell in love with the research when I was there and had a lot of fun, so I don't know. My advisor was big on pushing me to work in the [tech industry] type path and getting a non-academic type job. And at one point, I was interviewing [at a tech company], and just, and I don't know, I was there, stuck in traffic, they're making these ridiculous sums of money, and I was just breaking down – I don't want to do this. This is not at all what I want. So then I came back, and said, ok, I'm going to go the academic route. I had one round of academic interviews that just flopped.

So the next round came about and I threw it all in, and I got a bunch of interviews, and happily found out that a place like [Master's University] existed. So I didn't realize that there were teaching universities that had undergraduate engineering, that was not pure research focused, and I was like, this is great. [During my interview at my current institution, I noticed] the faculty here were so phenomenally happy. They just get along with each other, they're just happy people, they look like they're enjoying their lives. Coming from [PhD University], as being a big R1, and I had a good friend from [another R1], he was maybe one or two years ahead of me, I know him from conferences. He ended up getting a job at [a master's institution]. And I was like, woah, this is a big change for you. And I talked to him a lot, called him up on the phone several times to talk to him about that, and we were both talking that, there's this really scary thing that once you leave the R1-realm, there's a huge bias there, there's this – you feel like you fail, the sense that you're a failure, that people are going to look down on you, and all sorts of other stuff. And that was the scariest part.

[Back to my advisor] – when I finally told him I was going the faculty route, he was happy to help me. He read over statements and gave some advice there. He was pushing – he told me, he basically told me, you should go to [an R1]. When I finally called him the last time and told him, I got these – I forget how many offers I got, three or four offers on the table, and he was like, he finally said, [Jason], that's great. At this point, it's all preference, you should go wherever you want. I didn't need that from him, I was going to take the job anyway, but that was kind of relaxing, when he finally said you know, at this point, when you have job offers and stuff, get what you want, go where you think you'll fit in best. That was – it was just hard to overcome that bias coming from him.

My friend who ended up at [a master's institution as well], because I knew he had gone down this path, and it was really just reassuring to talk to him and hear that there are other people who make this crazy jump –leaving your R1 bubble to go to these small schools, even though that's – It's just ridiculous looking back how I thought I was failing, leaving that, but you're not at all. At [PhD University], we were graduating PhD students without any experience teaching, so they had a mandatory TA assignment you had to do in the graduate school, for two units, two courses basically. Which on paper sounded awesome, but in practice, all a TA did was grade papers, they were a grader and that was it. It was horrible. There was no push to actually have you teach or anything like that, and I think that was a big missed opportunity.

I really don't know [how I learned what faculty do]. I talked to my advisor a lot about just what he does, but his life looks so different than from what mine looks like now. He would fly all over the place talking to funding agencies and doing talks, that sort of thing. [During my interview at Master's University], I did have to give a teaching talk, so I did not have to give a research talk, it was just a teaching presentation. They gave me a topic to talk about and then I prepared how I would teach a 50-minute class on that topic. And that is so intimidating to do, because you have no idea what teaching technology you'll have, you have no idea what the room looks like, you don't know the students. That was massively intimidating much more than any other research talk, just because of the unknowns.

I will say that I felt the PhD process is a little bit a bait and switch, just like – it just feels like there are so many PhD students and then so few jobs and it's just terrifying to get there and realize, oh, most professors – well what it seemed like – most professors spend all their time writing grants and just doing research, and there are very few of these big jobs. I don't know, it just felt odd to finally get this realization – and this is biased to the R1s – but professors spend the majority of their time writing grants, managing students instead of teaching and doing research is what you think as an undergrad.

Narrative 5 – Valerie Michaels

I went to grad school knowing that I would want to teach. [During undergrad], I thought it would be pretty fun to be a professor and be able to teach. It was always about teaching for me, it was never about doing the research. I went to grad school so I could get a PhD so I could teach. Looking back on it, it was probably a really poor decision because when I was in undergrad, I did do research, but I would do homework; I would do everything possible and then I would do the research. It was always the last thing that I wanted to do. And then I thought, I'll go to grad school.

I got a non-thesis [master's], but I always wanted to teach. Because that was my goal. I was getting my PhD to teach. I chose my advisor because he got people out fast, so I figured I could get out fast and teach faster. The one drawback was that I was lucky enough to be on fellowships for five years, but when you're on fellowship, you're not supposed to teach. It was a curse and a gift at the same time. It gave me the ability to finish quickly, but at the same time I did not have the opportunity to teach. But I did manage to weasel my way into teaching by volunteering during one summer.

The only [teaching experience] I had in grad school was teaching a summer class, a junior level dynamics class to twenty some students. I knew I wanted [the teaching experience], and I knew that they taught dynamics over the course of the summer, so then I asked my advisor, "hey is it ok if I teach dynamics, I want to teach?", or "I want

to be a professor and this would bolster my resume”, and he was totally fine with it. It was a lot of fun. And I think I did pretty well. Everyone liked me so that was good. I thought, yes, I am doing something right. And then that following fall I started applying for positions.

I knew I wanted to start off at least trying for a tenure track position. And I figured if I don’t get tenure track I’ll move down the ladder and start looking at adjunct or non-tenure track positions. Well, ok, more like adjunct positions, because there were a couple of universities that I applied to that did not offer tenure and that did not bother me. But nobody had tenure instead of the one person that sits in the class and teaches five classes doesn’t have tenure. Tenure for me wasn’t necessarily a draw, it’s just that there seem to be more options for tenure than for non-tenure track, and I didn’t particularly want to start off in an adjuncting role.

[Since] I knew I wanted to teach, I didn’t want a university that had high research expectations. I looked at all of the job postings and I also looked at the Carnegie Classifications. I made this spreadsheet with the list, I looked at all of the colleges in the US that offered engineering based on ABET. I went first with ABET’s list, and then I found their Carnegie Classification based on that list, and then I went from there. Then I would look at job postings and see which job postings were available and put it in my spreadsheet. I’d notice, this is a job but it’s at an R1 institution so I’d put it low on the list. I applied to 40 different positions and I heard back from about half of those. I had a bunch of on campus interviews. It was probably eight interviews.

At [Current University, a Baccalaureate College], I was required to give a research talk and a teaching talk. Both were open for students to come to but not a lot did. They [told me to] pick a topic on a junior level engineering topic, so I chose integrals of motion, because I had taught a dynamics class and that was something I was familiar with. [I was attracted to Baccalaureate College because] I know it’s a teaching focused institution, so that’s what really, what really excited me. If I had to go back and redesign [my graduate program], I would include a teaching component. Having a way to get a teaching certificate for people who didn’t have the opportunity to teaching would also be good.

Narrative 6 – Opie Hampton

I knew pretty much by the time I graduated from undergrad, I knew I wanted to teach. And I knew I wanted to teach higher ed. I wanted to go into college, university teaching. I wanted the extra freedom that comes with being able to teach at higher ed and not have to worry about the structure and all the overhead that comes with K-12. And I wanted to teach students that, at least for the most part, wanted to be there, and had an interest in what I was teaching. And so when I was applying to grad school, I knew that even when I was applying. And that was something that, going into it, factored into my decision as to where I went. I knew that to get into academia at a high level, I needed to have my PhD from a well-respected institution.

And at the time, I didn’t know that engineering education was a thing at all. I didn’t figure that out until years later. But when I was looking at schools, I was looking for the big name, and at the same time, I was looking for an advisor who I think can accommodate the fact that I don’t want to be the all-star researcher. That’s not something that interests me, that’s not something that ever interested me, and even then, I don’t know what made me aware of it, but I knew that if I didn’t find an advisor that recognized that, I was setting myself up for a bad time. And I have no idea where I picked that up, but I did, somewhere. Somebody told me.

So I end up in ME, I talked to [my advisor] about the fact that, hey this is what I want to do, this is my long-term goal, and he was remarkably accommodating. And his background, so [my advisor] was one of the research stars of the ME department. He was on a bunch of the marketing brochures, he was bringing in million dollar grants all the time, a huge researcher. So it was interesting to me that he would be so accommodating to the fact that I don’t want that.

It was probably my second year into grad school, he had me – I wasn’t officially a TA, but he was teaching a dynamics class, and he had me, basically I wrote all the exams for him, and helped with some of the grading. I was

a very informal pseudo-TA for that. And then he had me do a guest-lecture for his vibrations class. He encouraged me strongly to apply for [a teaching fellowship for graduate students]. I did, I got it, and ended up teaching statics as part of that fellowship. And that was awesome. Because that was the first time that I had a class that was mine and I was teaching it, and it was just awesome.

[Also during graduate school, I was put] in touch with [a woman], who, I have absolutely no idea why, but for some reason [she] decided that I would be a great person to teach a section of intro and just brought me onboard. And I still don't totally understand what led her to decide that that would be a good connection, but she did and I went for it. And that's how I ended up teaching [introduction to engineering]. So I'm in grad school, I've taught statics, I've taught [First Year Engineering] a couple of times. Oh, so my advisor left, he actually left the university, probably 2013, I want to say. A year before I graduated, I was orphaned. Yeah, which was fun, and then the lab packed up and left, which was also fun. I was literally orphaned with nowhere to go, and I think that was actually kind of a blessing in a lot of ways, because without my major advisor, I was really forced to pick up a lot of my dissertation work early and get it done before he was out of contact.

Because a lot of times you end up – once your dissertation work is kind of wrapping up and you're in that writing and getting things put together phase, you get random extra projects, right? I didn't have any of that because my advisor and lab was gone. And that bought me a lot of time to get to do whatever I wanted to do. So that was really what let me to get into the teaching first-year and everything else. And doing everything that I did over in engineering ed, because I didn't have anybody saying, hey, you need to get in the lab and run this test for me for an unrelated project, or go talk to this potential project client or whatever. I was free to do whatever, and so that really opened up a lot of opportunities for me to kind of find my own way, and that was hugely impactful for my trajectory.

When I was going through the job application process, I knew at that point that I wanted to teach specifically, and I knew that I could find smaller schools that would give me the leeway to focus on the teaching. And my undergraduate institution was one of those sorts of places. It has a graduate program, but the whole school is only maybe 5,000. So I knew that kind of environment, that's what I had come out of from undergrad, and I kind of wanted to get back to it. So that's where I focused a lot of my applications, were those smaller schools. More teaching focused institutions. I went through all that process and ended up finding [Current University, a Baccalaureate College] just on a job site, I don't remember which one, Academic Keys, I don't know, found it, applied, came to visit, loved it.

I had to do a presentation, and I was asked to do a research presentation, which was interesting, since the expectation of research at [Current University] and places like it is actually pretty small, but they asked me to talk about my research, but it was a presentation to students, I think they were juniors who I was presenting to. And the faculty all sat in. So I had to explain, basically my dissertation work, to a bunch of juniors in a way that was interesting and exciting for them, for half an hour. So that was fine, that was fun.

I don't know that I would change [my graduate school experience] that much [if I had the chance], and the reason why is, I think for me, it was really important to get that teaching experience and all of the opportunities that came with that, but that's not for everybody. So I don't know that I would ever say, everyone is required to teach. Because if you don't want to go into teaching, I don't want you teaching a lab, because you're not going to like it, you're not going to want to do it, you're not going to do well.

I guess if I could change something, maybe it would be to kind of split it up, and have – it's the same degree, but do you have a research focus or a teaching focus. And let the research focused people go do research and let the teaching focused people kind of bring out more of those opportunities. I had a lot of great opportunities, but it's because, in a lot of cases, I lucked into them, or I went out and found them, and it wasn't really baked into any program in a meaningful way. It's just that I cobbled it together. I guess if I could change something it would be to create a defined teaching track, and scaffold in some of those opportunities that I had but make it available to everybody that wants to take advantage of them.