

# As Necessary as the Cleaning Crew: Experiences of Respect and Inclusion Among Full-Time Non-Tenure-Track Electrical Engineering Faculty at Research-Intensive Institutions

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**Abstract—Contribution:** This article explores issues of respect and inclusion among full-time non-tenure-track (NTT) electrical engineering faculty.

**Background:** NTT faculty members are an important and growing part of electrical engineering programs in the USA. This article complements prior research on NTT faculty member career satisfaction and effectiveness, providing perspectives from the NTT faculty members themselves on their experiences with respect and inclusion.

**Research Question:** The research question for this article is: How do NTT faculty members experience respect and inclusion in electrical engineering departmental cultures?

**Methodology:** Using a qualitative design and semi-structured interview protocol, data were collected via 45-min interviews with 13 full-time NTT engineering faculty. The analysis used thematic coding.

**Findings:** Most participants in this article work in departmental cultures that diminish their effectiveness. They are keenly aware of whether they feel respected and included in their department and these factors significantly affect their career satisfaction. Many of the participants have been specifically excluded from departmental discussion affecting their work, have suffered the effects of policies that are biased against them, and have been told directly or indirectly that their appointments are not valued by their administration or other faculty.

**Index Terms—**Contingent, inclusivity, institutional culture, motivation, non-tenure-track (NTT), qualitative.

## I. INTRODUCTION AND LITERATURE REVIEW

A SIGNIFICANT and growing portion of faculty members teaching in United States (U.S.) universities are in appointments that do not offer tenure. These appointments are sometimes referred to as contingent or non-tenure-track (NTT). The Government Accountability Office (GAO) reports that in 2015, the percentage of all faculty members

teaching at four-year universities in NTT appointments was 61%. When considering only those faculty members with full-time positions, NTT faculty accounted for 34% of all four-year university faculty. However, NTT faculty members at four-year universities are responsible for teaching between 45% and 54% of all courses [1]. In engineering programs, the percentage of full-time NTT faculty is significantly lower, 8.9% [2].

These data represent a persistent trend across U.S. universities to use higher proportions of NTT faculty. From 1995 to 2011, the number of full-time tenure-track (TT) positions grew by 9.6%, whereas the number of full-time NTT positions grew by 109.2%. University administrators say that the increase in NTT appointments is due to budget uncertainty, the reduced cost of NTT faculty, flexibility in response to enrollment fluctuations, and the need for subject specialists [1]. These forces are not likely to change in the near future, so it is reasonable to expect that the number of NTT engineering faculty will continue to grow.

### A. Definition of Terms

In this article, faculty members are referred to as TT if their position offers tenure. Tenure-track faculty may be tenured or pretenure. Faculty members are labeled NTT if their position does not offer tenure. The label NTT, when used alone, denotes faculty members who are either part time or full time and are not graduate students. Whether full time or part time, the NTT faculty member's primary responsibility is teaching, which excludes faculty members whose primary responsibility is research. The label full time is used to describe faculty members who are considered full-time employees by their institution. The criteria for being considered full time vary by institution. Every participant in this article is considered full time by their institution.

NTT appointments have a variety of titles, including lecturer, instructor, and professor. Some titles include the modifiers "teaching," "practice," or "clinical," such as "assistant teaching professor" or "assistant professor of practice." In this article, the participants referred to titles assigned by their institutions, which are all located in the USA. Some titles, especially the title "Lecturer," have different meanings across different institutions, geographic regions, and academic disciplines.

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Engineers are referred to as “practicing engineers” or “engineering professionals” when performing engineering work outside academia, usually for corporations or governmental agencies. These labels are not intended to imply that engineers working in academia are neither professional nor practicing.

### B. Understanding NTT Faculty

The number of NTT faculty has increased significantly in the past 20 years. With this, concerns have emerged about the impact of this change on student learning. Early quantitative studies show that NTT faculty members are less effective when compared to their TT counterparts. In one such study, Umbach [3] used a contingent worker conceptual framework and data from the Faculty Survey of Student Engagement to show that NTT faculty are less likely to engage students, spend less time preparing for courses, use fewer active, and engaging teaching techniques, and have lower academic expectations for their students when compared to their TT colleagues. In another study, Bland *et al.* [4] showed that NTT faculty are significantly less productive both in research and in education and are less committed to their institutions when compared to their TT colleagues at research and doctoral institutions. The results of these studies cause concern considering the increased use of NTT faculty.

Kezar and Sam [5], however, suggested that new theoretical models are necessary to understand NTT faculty. They proposed that some earlier studies used theoretical models that do not fit NTT faculty. For example, modeling NTT faculty as contingent workers is based on the preconceived notions of the researchers and is not supported by empirical evidence. Levin and Shaker [6] also noted the risk of bias when TT researchers write about NTT faculty members:

Full-time non-tenure-track faculty are deemed accomplices, albeit unwitting, to the erosion of the academic profession, faculty power and undergraduate education. Their perspective on these claims and self-assessment of their own identity as professionals are not considered when these ascriptions are made and, indeed, are rarely considered at all. This omission enables observers and commentators to portray full-time non-tenure-track faculty in a negative light and use them as scapegoats for the ills of higher education.

Understanding NTT faculty requires new models, developed by exploring the experiences of the NTT faculty and by asking the faculty themselves [7].

### C. Nature and Purpose of This Article

The goal of this article is to explore experiences of respect and inclusion among full-time NTT faculty in electrical engineering departments situated within R1 universities. The research question for this article is: How do NTT faculty members experience respect and inclusion in electrical engineering departmental cultures?

The epistemology of this article is constructivism. Constructivism holds that knowledge of the world is always a human and social construct [8]. Although knowledge about

TABLE I  
JOB ATTRIBUTES MAPPED TO JOB PERFORMANCE FACTORS

Capacity to Perform	Opportunity to Perform	Willingness to Perform
Professional Growth	Employment Equity Academic Freedom Autonomy	Employment Equity Respect Flexibility Collegiality

the world is socially constructed by individuals, individuals share a common world that is outside of the human mind. In the context of this article, participants construct knowledge about respect and what it means to be respected based on prior social interactions. The participant, then, is the most reliable judge of whether an interaction demonstrates respect or a lack thereof.

The theoretical framework for this article is composed of three components: 1) a model predicting job performance developed by Blumberg and Pringle [9]; 2) an analysis by Gappa *et al.* identifying factors affecting job satisfaction in academic work [10]; and 3) a framework developed by Kezar combining the previous two frameworks and extending the results to the work of NTT faculty members [11].

Blumberg and Pringle developed a model of individual job performance as a function of three factors: 1) the capacity of an individual to perform the work; 2) the willingness of the individual to perform the work; and 3) the opportunity to perform the work. The capacity of an individual to perform the work is based on attributes of the individual, such as intelligence, stamina, knowledge, and skills. The willingness of the individual to perform the work is based on the characteristics of both the individual and the work environment, such as motivation, job satisfaction, anxiety, job status, and perceived role expectations. The opportunity to perform the work is based on factors external to the individual, such as having access to the appropriate tools, working conditions, organizational policies, access to necessary task information, and leader behavior. A high performing individual is the result of a high capacity to work, a high willingness to work, and a high opportunity to work.

Gappa *et al.* [10] recognized the changing nature of academic work, especially as the number of NTT faculty increases. Their analysis identified a set of six job attributes that contribute to the job satisfaction of faculty members: 1) employment equity; 2) academic freedom and autonomy; 3) flexibility; 4) professional growth; 5) collegiality; and 6) respect. They defined respect as a basic human valuing of people for who they are and for what they uniquely contribute to the organization. Respect holds a privileged place in their model, serving as a core for the other five job attributes. If a faculty member does not feel respected in the workplace, it is unlikely that the other five attributes will compensate for that lack of respect.

Kezar mapped the six job attributes identified by Gappa *et al.* onto the three job performance factors proposed by Blumberg and Pringle. The mapping of job attributes to job performance factors is shown in Table I.

Kezar conducted interviews with 107 NTT faculty members from 25 departments in three universities. The selected universities were master's degree-granting institutions with a Carnegie rating of M1. Through these interviews, Kezar found a range of departmental cultures which were aggregated into four culture types: 1) destructive; 2) neutral; 3) inclusive; and 4) learning. Destructive departmental cultures diminish the NTT faculty member's capacity to perform, willingness to perform, and the opportunity to perform. At the other end of the spectrum, learning cultures provide an environment resulting in high job performance.

Kezar included the attribute of respect in the willingness to perform category. The interview data showed that willingness to perform in the context of an NTT faculty member's work is the willingness to spend additional time preparing for courses, advise students even if it is not part of the NTT's assigned duties, conduct additional office hours beyond what is required, build connections and networks to support teaching and advising, and meet with other faculty members to improve their teaching ability.

In summary, respect is a job attribute of critical importance. Faculty members are more willing to perform when they experience respect in their workplace. An increased willingness to perform leads to improved job performance and to activities that improve the skill and effectiveness of the faculty member.

Two of the authors' previous qualitative studies provided the motivation for this article. These studies examined the career goals of NTT engineering faculty [12] and the pathways into the NTT teaching career [13]. These two studies are referred to as the "career goals" study and the "career pathways" study in the remainder of this article. While analyzing the data from those two studies using a thematic analysis method, several themes emerged that were not anticipated. The most significant of these emergent themes was the participants' perceptions of respect and inclusion. Since respect and inclusion are a foundational requirement for job satisfaction [10] and faculty effectiveness [11], this topic is important and warrants further exploration.

## II. METHODOLOGY

The data for this article were collected during the previous career goals and career pathways studies of the authors. Since the study design and methodological choices for both prior studies were similar, the research design is described once. Any differences between the two studies are noted in the corresponding section.

This article used a general qualitative research design. Studies using a general qualitative research design should include an explicit description of methodological choices. The remainder of this section describes the sampling, data collection, and data analysis methods used in this article.

### A. Sampling

Qualitative studies, such as this article, use smaller sample sizes in an effort to explore particular contexts in great detail. The goal of qualitative studies with limited sample sizes is not to draw conclusions that are applicable to most situations, but

rather to explore a particular situation in enough detail that the meaning of the situation is apparent [14]. The sample size for this article is 13 participants, yielding 20 interviews.

This article explored the experiences of typical NTT electrical engineering faculty members teaching in R1 institutions and so the sampling criteria are designed to select typical cases [15]. The American Society for Engineering Education (ASEE) conducts an annual survey of engineering programs in the USA that includes, among other data, the number of TT and NTT faculty in each engineering department. Data from the ASEE survey were used in this article to locate electrical engineering programs that meet the sampling criteria.

The first set of sampling criteria included any electrical engineering program that had a Carnegie rating of R1, offers tenure, and has ten or more faculty members. Research universities with an R1 Carnegie rating were chosen because the tension between research activities, performed primarily by TT faculty, and teaching activities, often performed by NTT faculty, is more likely to be present in those departments.

The second set of sampling criteria included programs that have a proportion of full-time NTT faculty members near the national mean. This criterion helped avoid outliers (e.g., programs that do not offer tenure, making all faculty NTT) and to identify NTT faculty with more typical experiences. The national mean was computed using data from the ASEE survey for engineering programs that offer tenure. The mean proportion of full-time NTT faculty was 8.9%. Departments selected by the first set of criteria were ordered using the percentage of faculty that were full-time NTT. From that list, departments whose percentage of full-time NTT faculty were near the national mean were selected. The first department chosen was nearest the mean, subsequent programs were selected by alternating above and below the mean until the specified number of participants was recruited.

Individual participants were identified using data from the faculty page on each department's public website. Ten participants were recruited for the first study; all were full-time NTT faculty at the time of their recruitment and interview.

For the second study, the ten participants from the first study were contacted. Seven of these participants agreed to take part in the second study. The three participants who did not choose to participate in the second study were replaced using the same criteria and process used for the first study. A total of 13 participants from nine universities participated in the two studies.

Table II contains the participants' pseudonyms with the highest degree attained, years of professional experience, and years of teaching experience. Gender is not included explicitly in the table but can be inferred from the choice of pseudonym. The ethnicity of each participant is not included in the table. Ethnicity is an important participant attribute and in general, should be specified [16]. In this population, however, specifying ethnicity would compromise the anonymity of several participants.

### B. Data Collection

The data collection method chosen for this article is semi-structured interviews. Semi-structured interviews consist of

TABLE II  
PARTICIPANT EDUCATION AND EXPERIENCE

Participant Pseudonym	Degree Attained	Professional Experience <sup>a</sup> (years)	Teaching Experience <sup>a</sup> (years)
Alan	MS	7	3
Brandon	MS	None	1
Cody	PhD	40	4
Doug	PhD	10	1
Ethan	PhD	35	2
Frank	MS	7	17
Greg	PhD	21	10
Henry	MS	None	5
James	MS	16	5
Kimberly	PhD	8	1
Laura	PhD	None	3
Margaret	PhD	2	12
Nathan	PhD	None	2

<sup>a</sup>Years of professional engineering experience and teaching experience are as of the interview date.

a set of questions developed by the researchers based on the research goals of the study. All authors participated in the development and refinement of the interview protocol. The interview questions were open ended, meaning the answers do not consist of simply “yes” or “no.” Additional probing questions were asked to clarify or elucidate participant responses. Examples of interview questions used in this article are: “What does tenure mean to you?,” “Tell me how you found out about the teaching position,” and “Tell me about your first teaching assignment.” The interview questions were sent to each participant several days before the interview to allow each participant to reflect on the questions beforehand. The interview protocol for the career goals study included 17 questions and the protocol for the career pathways study included 14 questions.

Semi-structured interviews allow the participant to go “off-script,” telling stories that may be tangentially related to the question. Participant responses that do not follow the interview protocol can be especially valuable and should not be ignored or truncated by the interviewer [17]. Interviews in this article were designed with features to facilitate participant sharing in depth: choice of the interviewer, location of the interview, conversational tone, and assurance of anonymity.

One author, Fitzmorris, was chosen to perform all ten interviews in each study. Fitzmorris was chosen primarily because he is a full-time NTT faculty member. Studies involving participants who may feel marginalized and who are asked to share sensitive information can benefit from using an interviewer that is perceived by the participant to be similar to them [18]. The participants knew from the recruitment materials that Fitzmorris was an NTT faculty member.

Using an interviewer who is similar to the participants can be beneficial but also increases the risk that the interviewer might introduce bias into the data. Bias can occur through leading questions, through the choice of which subjects to probe or not to probe, and through assumptions based on the past experiences of the interviewer. The technique of bracketing can mitigate this risk and increase the strength of the study [19]. Bracketing can be implemented in a variety of ways. For the interviews conducted as part of this article, bracketing means the interviewer made a conscious effort to

put aside any preconceived notion regarding the experience of the participant. However, a tension existed in bracketing during these interviews since it would have been naïve for the interviewer to exclude any knowledge of how an electrical engineering department operates. In this article, the interviewer bracketed any experience that fell into two categories: 1) relationships between the participant and other persons in the department and 2) policies and procedures specific to the institution or department in which the participant teaches.

Interviews in this article were conducted via telephone. Participants selected the time for the interview and chose the site at which their end of the interview was conducted. Audio data from the interviews were recorded for later analysis. Interviews were conducted in an informal and conversational tone to encourage participants to share additional data beyond what the interview questions asked. During the interviews, participants were encouraged to provide stories or experiences that were considered tangential. The interviewer did not ask the next question until the participant had clearly completed their response.

Each interview was intended to last 45 min. The shortest interview was 35 min and the longest interview was 58 min.

### C. Data Analysis

The audio interview data were coded directly without transcription using qualitative analysis software (NVivo 11). Coding the data directly from the audio recording increased the strength of this article in two ways: 1) by eliminating written transcription altogether and 2) by allowing the data analysis to include nonverbal data, such as inflection, pauses, and rate of speech. These nonverbal cues improved interpretation of the data and eliminated the need for a transcriptionist to supplement the transcript with these nonverbal details. Coding the audio data directly also eliminated the potential for a transcriptionist to introduce errors into the interview data.

Since the interview protocol contained a known set of questions, *a priori* codes were developed to capture expected themes reported by the participants. For example, the interview question “What does tenure mean to you?” resulted in the *a priori* code “Aspects of Tenure.” The code set contained 22 *a priori* codes with four codes added as emergent codes during the data analysis process. Interview data that fit one of the *a priori* codes were analyzed by one author (Fitzmorris). Data that did not fit an *a priori* code were assigned a new, temporary, code that attempted to capture its meaning. Interview data that did not fit *a priori* codes were analyzed by all three authors using a constant-comparison method [20]. All authors participated in the refinement of the code set and identification of emergent themes.

Developing the code set and identifying emergent themes carry the risk of introducing bias. Deciding which interview data merit an additional code can be influenced by the perspective of the researcher. The technique of bracketing is used to mitigate this risk. In this context, bracketing means the researchers consciously attempt to approach the data analysis as an “open, interested observer” [19]. Having three

perspectives: 1) a tenured faculty member in an administrative role; 2) a tenured faculty member; and 3) a full-time NTT faculty member, improved the trustworthiness of the data analysis by reducing the opportunity of anyone member's bias to influence the outcome of the data analysis.

As the data analysis for the two initial studies concluded, data categorized by the emergent themes were examined to determine whether any of the emergent themes were common among the participants. Two themes, respect and inclusion, contained data from 9 of the 13 participants and so were chosen for further analysis in this article. All interview data coded in the themes of respect and inclusion, whether positive or negative, were analyzed and included in the results of this article. Although all interview data coded in the themes of respect and inclusion are analyzed as part of the results, not every quotation from those categories is quoted in this article.

#### D. Subjectivity Statement

The author who conducted the interviews (Fitzmorris) is a full-time NTT faculty member with industry experience. He attempted to bracket his experiences while conducting the interviews, but his background may have influenced the probing questions that he asked and the topics that he chose to clarify.

The other two authors provide the perspective of tenured faculty members as well as the perspective of an administrator (Shehab). Both Trytten and Shehab have worked in the area of diversity and inclusion within engineering education for decades and tend to look for structural problems that inhibit institutional equity. In other words, they focus on fixing the system instead of the individuals who inhabit the system.

#### E. Limitations

Limitations for this article fall into two categories: 1) participant selection and 2) data collection. Participants were selected from full-time faculty members who teach in electrical engineering departments situated in R1 universities in the USA. Experiences of some NTT faculty members are not explored in this article, including NTT faculty members that do not teach in R1 institutions, NTT faculty members who teach in universities outside USA, part-time faculty members, full-time research faculty members in positions that do not offer tenure, and NTT faculty members who teach other engineering disciplines.

This article includes the experiences of 13 participants who may not be representative of full-time NTT electrical engineering faculty in general.

Face-to-face interviews are the preferred format for interviews involving sensitive topics [21], but the wide geographic range of the participants precluded face-to-face interviews. The interviews in this article were conducted via telephone and the interview data consist of audio recordings which do not include visual data, such as facial expression or body posture.

### III. RESULTS

The interview questions explored the participants' beliefs and attitudes toward tenure, their prior career experience, and

their motivation for seeking a teaching position. Nine of the 13 participants spontaneously shared experiences related to disrespect and exclusion. The participants discussed respect and inclusion in three different, but sometimes overlapping, dimensions: 1) having a voice in departmental governance; 2) being valued as one of the faculty as opposed to a subordinate; and 3) university policies.

Having a voice in departmental governance includes being invited to faculty meetings and retreats and having a vote in matters affecting the faculty member's daily work. Examples of being valued as one of the faculty as opposed to a subordinate include being listed on the departmental website in the "faculty" section, being invited to faculty social events, being included formally, and informally as part of the "regular faculty." Exclusionary university policies include not having access to the same resources or staff as TT faculty, not being eligible for similar benefits, missing or inconsistently applied promotion criteria, and ineligibility for awards and recognition.

Direct quotations from the interviews appear later in this article and appear in italics. Where quotations include content from both the interviewer and participant, the participant's response is preceded by the participant's pseudonym and the interviewer's question is preceded by "Interviewer." Interview data that appear within square brackets [ ] are clarifying remarks made by the authors. Interview data that appear within curly braces { } are details that have been removed to protect the identity of the participant.

#### A. Experiences of Exclusion in Governance

Four of the 13 participants, all from different universities, described experiences of feeling excluded from departmental discussions involving topics that have a direct impact on their day-to-day work.

During a discussion of the attractive features of tenure, Cody shared his anger and frustration at being silenced and openly disrespected in a faculty meeting.

*Interviewer: When you look at the tenure track positions in your department, are there parts of that position that you wish were part of your NTT position? Are there some things that the TT faculty get that you want?*

*Cody: No, there's nothing (long pause), except respect. I will say that. We have an annual faculty retreat before the fall semester starts. At our fall retreat last fall, the subject of lecturers came up and one of the tenured faculty members was very blunt and said in so many words, "I don't like lecturers, I don't like that we depend on lecturers." I wanted to rip his throat out.*

*Interviewer: Did he say this in front of you? Were you in the room?*

*Cody: I was there. I and two other lecturers were there. We held our peace because the conversation was being run by the Dean of the School of Engineering. The subject was identifying an interim chair for the department. He wanted to get a sense from the faculty who the new chair should be and*

he was very clear at the outset that he wanted the opinion of the tenured faculty.

*Interviewer:* Do you mean to say that he was very clear that he didn't want the opinion of the faculty that were not tenured?

*Cody:* He didn't say it that way, he said that he wanted to hear what the TT faculty had to say. When you specify a subset of the faculty, then in my binary mind, you have basically invited the other part of the faculty to maintain silence. And so I did. Several weeks later, I had an opportunity to gently confront that faculty member who had said that, and he excluded me personally, he said "I didn't mean you." I said, "That's not the point. What you have opened the door for is that now all the tenured faculty have to teach these low-level classes that you very specifically do not want to teach and we're here to relieve you of the burden of teaching these lower-level classes so you can focus on your subject-matter area. If we're not here, you've got to divert yourself into areas that you don't want to go into." He was overlooking that fact. We serve a very important role in the educational process and get very little respect. That's the one thing that bothers me the most.

*Interviewer:* Just to summarize, it sounds like it's OK for the lecturers to be around because you serve a need, but if there was another way to satisfy that need, he'd rather you be gone.

*Cody:* Yeah, it's almost an exaggeration but not much of an exaggeration to say that we also have a cleaning staff here and it's OK for them to be around too.

In response to the same question, Doug shared a story of being excluded from a faculty retreat.

*Interviewer:* Are there aspects of TT positions that you wish were part of your position?

*Doug:* The biggest thing that bothers me right now is that the faculty, well actually the department head who recently changed, has decided that basically NTT faculty don't get a first-person say in the operations of the department. So obviously I don't get a vote on whether people get tenure, which I expected coming in, but I also don't get a vote on what our goals are for this year, or our objectives. When they had the faculty retreat last year where they talk about that stuff and do presentations, I wasn't welcome or part of the discussions.

*Interviewer:* Were you invited but told not to vote or were you not invited?

*Doug:* I was uninvited. I got to present at the faculty retreat but was then asked to leave.

Laura described being excluded from departmental governance and her feelings of diminished status.

*Interviewer:* What are the differences, if any, between the TT and NTT members of your department?

*Laura:* It's a little different for us because we're physically separated from some of our colleagues. We have two campuses separated by {several} miles. We don't have interaction with people in the hallway, we don't have shared office space. It's definitely different, we're definitely seen as separate. We don't have certain voting rights. There's been some contention about changing our by-laws or departmental rules. If you're TT, you're considered regular. So we're wondering, are we irregular? Essentially, we feel that way. We feel like we don't have the same respect. They don't respect what we do, we're not bringing in research dollars but we are teaching.

Frank was allowed to participate in faculty meetings but for several years did not feel comfortable contributing.

*Interviewer:* What are some of the differences, if any, between the NTT faculty and the TT faculty in your department?

*Frank:* I would say that for the first five or seven years of being in faculty meetings, I just sat there and kept my mouth shut. I didn't say anything. I don't think I had the respect of anyone. I would throw a comment out here and there. Once I became the undergraduate advisor, about five years into my career, and I started working on revising the curriculum and improving it by really working hard on that area, people started to realize that I had something to offer.

These four participants described their desire to be included in their department's governance and their feelings that they are excluded not only from voting but in some cases from even being able to listen to the discussion. Two of the participants were allowed to attend but understood they should remain silent while the other two participants were not invited to be part of the discussion.

## B. Experiences of Diminished Status in the Department

Four participants described situations in which they felt disrespected by colleagues, administrators, or policies in their department.

Ethan, who had a career in the military followed by a career in which he rose to the level of the division manager at a national laboratory, described his experience of feeling "less than" in his department.

*Interviewer:* Once someone starts in your department as a NTT faculty member, what should they do to be successful in this track?

*Ethan:* Well, the primary role is teaching. There is clearly a bias between the TT faculty and the NTT faculty. The NTT faculty are already at a disadvantage even if you do great work because you're considered kind of a fill-in for where the TT faculty can't cover. I don't know if you've experienced that, but there's already a built-in bias against NTT faculty.

*Interviewer: I have experienced that, but I don't want to influence your responses, so tell me about your experience (both laugh).*

*Ethan: It's very evident in the interactions between us. I serve on a number of committees. Where I get my credibility is that I have hired many engineers myself, so I know what traits employers are looking for.*

*Interviewer: Do you think your colleagues recognize that credibility?*

*Ethan: Some of them do, the ones I've had interactions with in authority and the ones I have regular interactions with.*

*Interviewer: You mentioned that there is a bias in favor of the TT versus the NTT faculty. What forms does that take, how does it manifest itself in your career?*

*Ethan: I would say that there is little attention given to the lecturers. If we need something, there's no mentoring, there's no guidance.*

James, who has been a member of the department for nearly 20 years, discussed two interactions with his department head which he perceived to be professionally threatening and in which he feels his departmental status was diminished.

*James: My first department head was here for fifteen years and he and I got along very well and he was very supporting. Now another department head has come in. He was an internal appointment, he'd been the head of the graduate program and so his focus is on graduate studies. He's not naturally in favor of NTT faculty, he thinks we're getting by with something or putting ourselves over as having PhD's when we don't. In my first annual review, out of nowhere, first he goes into the review and why I was rated excellent and then he turns and said, "You know, we have too many NTT faculty and we're going to fire some. I don't think you have to worry but you should know that a lot of the NTT faculty are going to be fired." Now what kind of attitude is that? Ever since then, he's reinforced that. I'll give you an example from last week. In the past I wouldn't have done this but lately he really seems concerned about money. So I emailed him and told him I was planning on going to a Capstone conference and I have the money so I'll be paying for it and I don't know if you want to approve this, but I'm letting you know. He wrote back and said "I approve, and when you come back, write me a one-page paper on what you learned at the conference."*

*Interviewer: So how did you feel about that?*

*James: It's a week later and I'm still mad about it. It's like I'm a student, like an undergraduate student!*

Although the request for a conference briefing may be standard in some departments, it can be inferred from James's response that it is not standard in his.

Alan, who had a successful engineering career before teaching in his department described his feelings about being professionally disrespected in his position in the department:

*Alan: I was the program manager and built an entire microelectronics division for a company, and from that to upper-level management for a consulting company. I reported to the president and had many subordinates. Now, I'm the lowest guy here and there's no real chance for advancement or promotion, that's not entirely true, but the promotions are pretty minor. So am I going to spend the rest of my career as the lackey when I started my career as "the guy"? That's a little hard on the ego.*

In a separate part of the interview, Alan said

*Alan: I would argue that NTT faculty are almost treated as second-class citizens, that we weren't good enough or smart enough or whatever. I've just learned to let that roll off my back but what they don't understand is that for the job I have, I'm significantly better at it than people who are supposed to be higher qualified than I am. I'm good at what I do and this is what I want to be doing. If they want to call that second-class, fine by me, but I don't have the desire to get that piece of paper [a PhD] to enhance my prestige.*

Henry described his diminished departmental status as the lack of benefits associated with his NTT appointment.

*Interviewer: As far as a career path, is there a chance to be promoted? Because you're looking at moving to Teaching Instructor, that's a step up, right?*

*Henry: Yeah, I'd say faculty equivalent academic professional. And eligible for equal benefits. So for the first six or seven years, I was doing this, I couldn't even get insurance through my employer.*

*Interviewer: So you were full-time but you couldn't get insurance?*

*Henry: Right, because I wasn't I guess technically a full-time employee even though what I was hired for was a full-time teaching commitment. So until the [Affordable Care Act] changed the regulations, as of about a year ago, I'm eligible, in fact the university is required to offer me health insurance. But I don't get any other benefits at all in my career position.*

*Interviewer: So no retirement benefits or anything like that?*

*Henry: Nope. I'm not even allowed to have my parking permit deducted from my paycheck.*

Three of these four participants had successful careers before becoming an engineering faculty. Their descriptions of feeling less than in their departments are especially salient when juxtaposed with their experiences of being respected earlier in their careers.

### C. Experiences of Self-Worth and Value to the Organization

Several participants described their beliefs about their value to the department. Sometimes their value was validated by



their colleagues and sometimes it was validated by their previous experience or by professionals outside the department.

Frank described respect from colleagues:

*Interviewer: It sounds to me like your position in the department is solid enough that being let go doesn't occupy a lot of your thoughts.*

*Frank: No, it really did over the first five or six years, but over time I started to realize that people thought I was pretty good at what I was doing and I became very respected and wanted there.*

In another part of the interview, Frank said:

*Frank: Anything related to graduate studies, I stand back from because I don't think they want my opinion. Anything related to undergraduate curriculum I certainly do and I expect them to come to me if they have a question. So I feel that I'm on equal footing with any of the faculty relating to undergraduate curriculum.*

James described being valued by colleagues:

*James: I've had no significant problems in my interactions with the faculty and certainly no direct problems. With my role in the department, which is fairly visible, I get enormous respect and support from the faculty but my department head is not supportive and I hope the next one will be.*

Alan described being valued by an advisory board, but used militaristic language (allies, fight) to allude to his departmental interactions:

*Alan: The most powerful allies I have in this fight are the outside board. We don't have any other faculty on the advisory board, they're a CEO of {local company}, vice-president of {local company}, director of {national company}. They're all professionals. That's the single biggest thing that got me respect in the department, when the advisory board started to comment that I was someone who really understands what needs to be done.*

These participants felt they are a valuable part of their department and have significant contributions to make in undergraduate education.

#### IV. DISCUSSION OF RESULTS

Nine of the 13 participants spoke about their experiences of respect and inclusion in their department, some with stories that express strong, visceral reactions to specific incidents. The participants' discussion of respect and inclusion is especially significant considering that none of the interview questions asked about respect or inclusion. Respect and inclusion were clearly an important topic for a majority of these participants and worthy of further study.

The nine participants who spoke about respect and inclusion work at eight different universities. The lack of respect and feeling of exclusion of NTT faculty could be a widespread phenomenon although it is not reasonable to draw that conclusion globally from this study alone.

#### A. Second-Class Citizens

In 1993, Gappa and Leslie found that the faculty have become separated into two castes: 1) those who are eligible for tenure and 2) those who are not [22]. For engineering programs situated in doctoral research universities, this separation resolves into TT faculty who primarily perform research and NTT faculty who primarily teach.

Research productivity is an important component of TT faculty work and contributes to the goals of the program and the institution. Funded research and published findings increase the national stature of an engineering program. Increased stature attracts research faculty and graduate students who can conduct more research, leading to further increased stature. In addition to research activity, teaching is an important activity that contributes to the goals of the program and the institution. The participants in this article reported their teaching contributions were valued less than the research contributions of the TT faculty by their department and colleagues.

TT faculty at research-intensive universities are expected to produce research, which is an important, perhaps the most important, contributor to TT faculty rank and standing. Since NTT teaching faculty have a limited role in research, they know their work is at risk of being undervalued. Quotations from participants show that NTT faculty understand that their teaching work does not hold the same prestige as research, e.g., "I emphasize in teaching, but because I can't emphasize in research I'm apparently not useful"; "They don't respect what we do, we're not bringing in research dollars, but we are teaching"; and "TT faculty make a lot more, but I suppose that's reasonable since the TT faculty are bringing in the serious dollars. They're more valuable in that sense."

NTT faculty do, however, expect that their contributions to the teaching goals of the department and university will be valued and recognized. Programs that value undergraduate education and excellence in teaching can demonstrate respect for the NTT faculty by recognizing and rewarding their teaching contributions.

Whether intentional or not, the administration and TT faculty have created an environment for many participants in which they are *second-class citizens*. Participants report being seen as *lackey*, *less valuable*, *like a student*, *fill-in*, *expendable*, and *not welcome*. This diminished status is often grounded in comparisons with TT faculty. Participants reported being evaluated by their colleagues and administration using criteria appropriate to TT faculty and not appropriate for NTT faculty. The administration and colleagues may not be aware of using inappropriate criteria when evaluating the contributions of NTT faculty members. Engineering programs should collectively examine the role of all faculty members' contributions to the goals of the department and recognize that career experience is valuable and teaching contributions are valuable.

#### B. Departmental Policies That Encourage Respect

The previous research identified concrete steps that departments can take to improve the job satisfaction of their NTT faculty members [5], [7]. Many of these recommendations match the research results reported here. For example, both



Kezar and Sam [5] and Hollenshead *et al.* [7] recommended that NTT faculty members be given input on the curriculum and allowed to have meaningful participation in departmental governance. Both of these issues were highlighted by participants in this research. Hollenshead *et al.*'s recommendation went further, recommending that NTT be allowed to participate in institutional-level governance and that NTT and TT colleagues collaborate to develop curricula or plan and teach courses [5].

Both Hollenshead *et al.* and Kezar reported many recommendations that can be categorized as valuing NTT faculty as faculty. Their recommendations that align with participant observations reported here include the following.

- 1) Having regular and intentional hiring practices for NTT faculty positions [5], [7].
- 2) Offering career development opportunities beyond on-campus [5], [7].
- 3) Ensuring reasonable employment protection processes to guard against unfair or unsubstantiated complaints about an NTT faculty member's job performance [5].
- 4) Establishing equitable salary and raise schedules [5].

In addition, Kezar and Hollenshead *et al.* made the following recommendations that the participants in our research did not directly address.

- 1) Offer orientation sessions, both for NTT faculty as a group [5], [7], and jointly with new TT faculty [5].
- 2) Allow NTT to have input into the course selection and scheduling process [5].
- 3) Allow NTT to participate in the choosing of course textbooks and materials [7].
- 4) Allow NTT faculty career development opportunities, including an increasing breadth of teaching assignments and other administrative opportunities [5].
- 5) Offer multiyear appointments to NTT faculty [5].
- 6) Allow NTT faculty to fully participate in the evaluation of teaching, e.g., be members of committees that evaluate the teaching of both TT and NTT faculty.

## V. CONCLUSION

NTT faculty comprise 8.9% of the full-time instructional faculty in U.S. engineering programs at four-year research universities. The economic and structural factors that have led to the growth of NTT appointments are likely to remain, so it is reasonable to expect that NTT faculty will be a significant part of engineering programs for the foreseeable future. Engineering programs that value excellence in undergraduate education have the opportunity to unlock the full potential of their NTT faculty by demonstrating respect and fully including them in the life of the department.

The definition of respect proposed by Gappa *et al.* is the basic human valuing of people for who they are and for what they uniquely contribute to the organization [10]. NTT faculty are different from their TT colleagues because they have a different primary responsibility, teaching, and likely have different career experiences. Respecting NTT faculty then requires departments to value and reward teaching. Respecting the experience of NTT faculty requires administration and

TT faculty to value professional experience that an NTT faculty member may have gained outside the academy. While the separation of the engineering faculty into TT faculty, primarily responsible for research, and NTT faculty, primarily responsible for teaching, is not likely to change, it is possible for both roles to be respected and valued by the institution. Developing departmental cultures in which all faculty are respected and valued leads to greater faculty engagement and increased career satisfaction [7], [11].

## VI. FUTURE WORK

Disrespect and exclusion are important factors in job dissatisfaction of faculty from systemically marginalized groups. Future studies of respect and inclusion within engineering departments could investigate the intersection of participant identities, such as gender, race, and professional experience with appointment type. Such research may be challenging since the proportion of full-time NTT engineering faculty is less than 10% of all full-time engineering faculty and the number of any subset may be so small that the participants are recognizable.

Participants in this article who have not earned a doctoral degree expressed high self-efficacy in teaching and in some cases, asserted that they are better teachers than some colleagues who have earned a doctoral degree. Requiring full-time NTT faculty to hold a doctoral degree excludes engineering professionals who may have valuable skills and experience beneficial to the program. The role of a doctoral degree, especially for NTT faculty members who pursued a professional career outside academia, should be explored.

Nine out of the 13 participants in this article reported experiences of disrespect and exclusion within their departments. A national study to determine how NTT faculty, in general, feel they are respected and included by their departments could be pursued to explore the prevalence of this phenomenon. Data from an expanded study could be analyzed across engineering disciplines, universities, and institution type.

## ACKNOWLEDGMENT

An earlier version of this work appears in [23].

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