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Teaching-Focused Faculty in Research-Intensive Universities: Builders of Internal Capacity for Educational Change

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As research-intensive institutions struggle to meet the challenges associated with creating inclusive and equitable academic programs, we discuss teaching-focused faculty, specifically in the context of the University of California's Professor of Teaching (PoT) position, as a means to achieve these outcomes. Leveraging the capacity building framework, we present research and recommendations that highlight the potential for PoTs to enhance an institution's internal capacity for pedagogical change.

In Short:

- The *capacity building* framework conceptualizes universities as complex ecosystems that require researchers and educators to address multiple layers of culture and practice in order to meet the changing educational needs of students.
- Teaching-focused faculty (TFF) increase a university's *internal capacity* to continuously adapt to the changing higher education environment to support student success.
- Research characterizing the University of California's Professor of Teaching (PoT) position, a unique line of TFF, highlights multiple means by which faculty in such positions increase the university's internal capacity.
- Given that hiring of TFF is increasing across higher education broadly, we provide recommendations, situated in the PoT scholarship, that can be leveraged by administrators to increase their institution's internal capacity to meet current and future educational needs.

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As the landscape of higher education evolves, research-intensive institutions face a number of challenges related to fulfilling their educational missions. Demands to increase and diversify enrollment coupled with decreased funding have the potential to widen existing academic equity gaps. Employers are looking for graduates with an increasingly diverse range of competencies, and rapid technological change poses new teaching challenges. Institutions must be proactive in the face of continual change while being flexible enough to adapt to and address emergent challenges; however, they are traditionally slow to respond to change (Roland, 2004). In this article, we discuss the need for universities to increase their *internal capacity* for educational change, or the ability of an institution to adapt to the dynamic educational needs of their students, to promote student success. We specifically highlight the potential for teaching-focused faculty (TFF) to contribute to a university's internal capacity.

To help research-intensive universities meet their educational missions, there has been an emergence and growth of the TFF position. TFF have a primary responsibility in instruction, but also engage in scholarly work and service activities (Bush et al., 2019; Harlow et al., 2020). TFF are uniquely suited to increase the university's internal capacity to meet educational challenges, as individuals entering these positions often have prior experience with evidence-based practices that promote more equitable student success (Williams & Sato, 2021). Further, because pedagogical excellence is a criterion of their merit and promotion process (Harlow et al., 2020; Rawn & Fox, 2018), TFF are incentivized to continuously innovate with the changing instructional landscape.
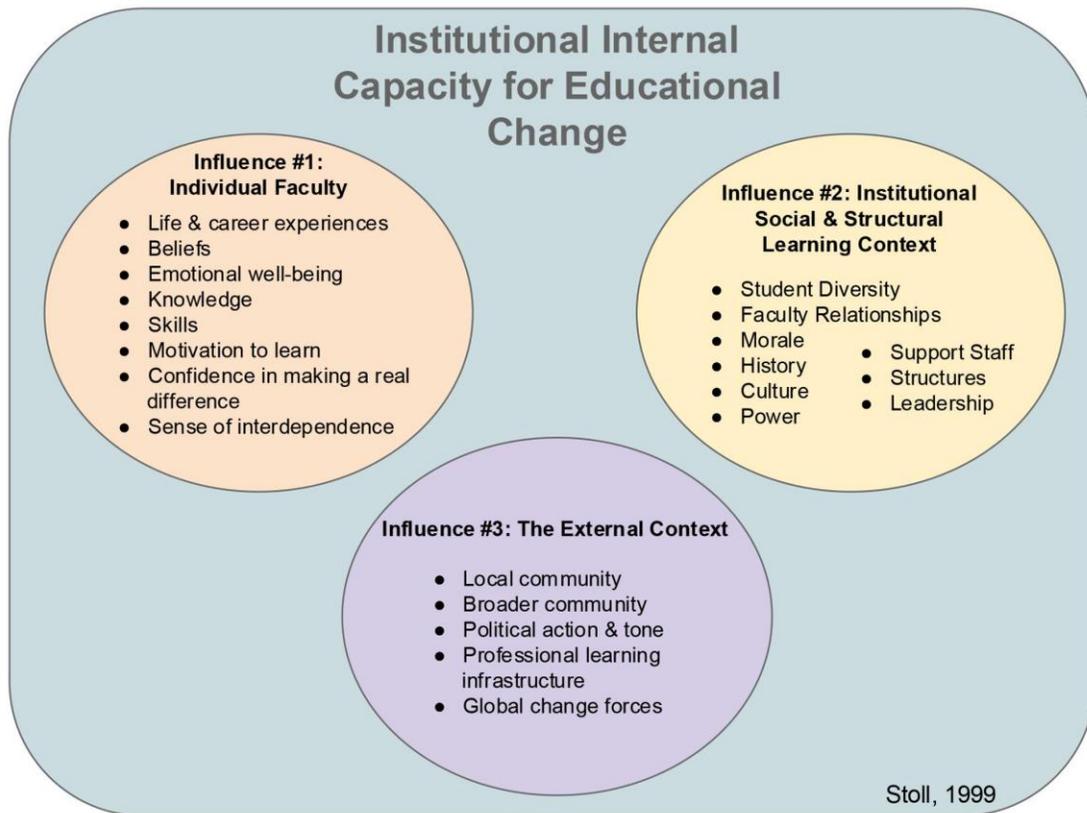
The University of California (UC)--a large, research-intensive, public university system–employs a unique tenure-track TFF position, the Professor of Teaching (PoT). On average, PoTs spend two-thirds of their time on classroom instruction, while also engaging in scholarly activities (e.g., discipline-based education research, curriculum development) and service roles (e.g., serving on education-focused committees; Harlow et al., 2020; Molinaro et al., 2020). We present extant research that highlights PoTs' contributions to building the research-intensive university's internal capacity for educational change. Using PoTs as an example, we propose that TFF have the potential to serve as key drivers of pedagogical and institutional change in higher education.

How can complex university systems change?

Institutional change scholars describe organizations as adaptive systems existing in and impacted by dynamic internal and external forces. As one example, Ecological systems theory (Bronfenbrenner, 2000) posits that development of sustainable change requires that effort be directed across multiple levels of an organizational ecosystem. Within a university, individual faculty, staff, and students make decisions based on their own skills, experiences, and perspectives that impact their personal learning and performance. However, those decisions are influenced by interpersonal interactions. Furthermore, individual decision-making and interpersonal interactions occur within university structures (e.g., departments), which themselves are shaped by policies, administrative support, and institutional history/values. Therefore, to produce meaningful and sustained change, attention must be paid to the individual, interpersonal, and contextual domains that influence the complex university ecosystem.

Stoll (1999) leverages ecological systems theory to argue that change efforts within an educational context must focus on building an institution's internal capacity so that the institution is better able to dynamically adapt to future demands. Stoll's *capacity building* framework outlines how (1) individual faculty within the institution, (2) the institution's social and structural learning context, and (3) the external context (e.g., its situation within the broader community or

its historical and cultural influences) are primary influences that contribute to the institution's internal capacity. Each of these three primary influences are informed by multiple factors (**Figure 1**, noted in italics hereafter).

Institutional Internal Capacity for Educational Change

Influence #1: Individual Faculty
- Life & career experiences
- Beliefs
- Emotional well-being
- Knowledge
- Skills
- Motivation to learn
- Confidence in making a real difference
- Sense of interdependence

Influence #2: Institutional Social & Structural Learning Context
- Student Diversity
- Faculty Relationships
- Morale
- History
- Culture
- Power
- Support Staff
- Structures
- Leadership

Influence #3: The External Context
- Local community
- Broader community
- Political action & tone
- Professional learning infrastructure
- Global change forces

Stoll, 1999

Figure 1. The three primary influences and 22 underlying factors that can affect an institution's internal capacity for educational change based on the capacity building framework.

An example that can be contextualized in the building capacity framework is widespread faculty intransigence to the adoption of evidence-based instructional techniques despite significant research demonstrating their impacts on promoting equity in student academic performance (Freeman et al., 2014). Faculty *knowledge* of and *skills* in implementing effective pedagogical techniques have remained relatively constant over time (Dancy & Henderson, 2010). But why, despite evidence, does this persist? Research (Brownell & Tanner, 2012) highlights a *culture* in higher education of instructing exclusively through lecture, a lack of *motivation to learn* novel pedagogical practices within the research university context (where *leadership* primarily rewards research and not teaching excellence), and *professional learning infrastructure* like teaching and learning centers that have traditionally been underutilized. Thus, faculty continue to use more traditional instructional techniques (Stains et al., 2018) that are more likely to result in less equitable student outcomes as their student populations continue to diversify (Freeman et al., 2014).

Professors of Teaching as builders of internal capacity

In this work, we specifically discuss how this could be accomplished within the UC system by leveraging PoTs to increase the university's internal capacity for educational change. The

unique facets of the PoT position, relative to their research-focused counterparts, touch on the factors outlined in the building capacity framework. Below, we describe research that highlights how the PoT position integrates into the primary influences of the Stoll framework, the means by which these faculty influence internal capacity, and provide recommendations to build internal capacity by leveraging TFF positions. (**Figure 2**).
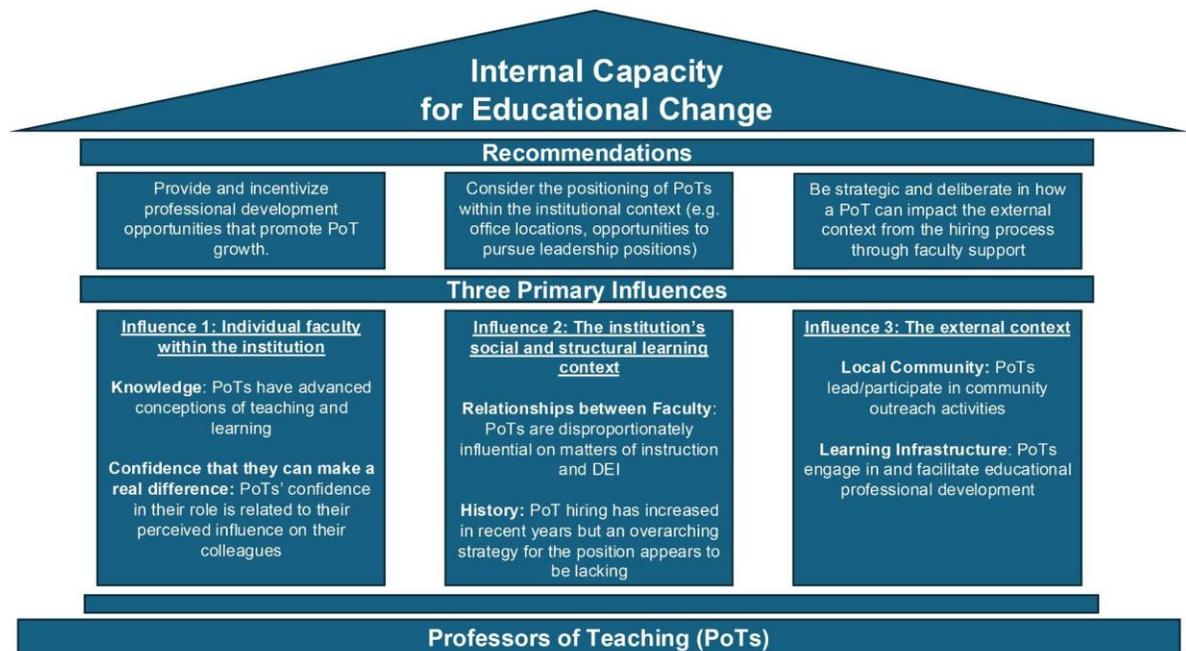
Figure 2. Examples of PoTs as builders of an institution's internal capacity. A complete discussion of each factor within the three primary influences can be found in the supplemental materials. All recommendations are derived from research on PoTs discussed in the text.

Primary Influence 1: Individual faculty within the institution

The degree to which PoTs can build their institution's internal capacity for educational change is influenced by a variety of factors at the individual level (**Figure 1**). A comprehensive overview connecting PoT impacts to these individual-level-factors and recommendations to enable these faculty to more positively influence internal capacity are presented in the supplemental materials. Two factors, *knowledge* and *confidence that faculty can make a real difference* are discussed below to illustrate how higher education can leverage the capacity building framework in the context of hiring and effectively supporting PoTs to promote student success.

Knowledge*.* An instructor's knowledge of current pedagogical practices, their course content, and their students' educational backgrounds can influence the internal capacity of a university. Such knowledge is necessary for an instructor to create an inclusive classroom space and foster student engagement and success. Rozhenkova and colleagues (2023) found that PoTs have more advanced conceptions of teaching and learning relative to their research-focused colleagues, believing that it is their role as an instructor to create a more student-centered learning environment. Additionally, PoTs are more likely to evolve and innovate as instructors as they possess a sense of responsibility to continuously engage in professional development

(Williams & Sato, 2021). Despite these findings, PoTs are likely to be primarily trained within their disciplinary context, rather than an education-focused field (e.g., a PhD in chemistry rather than chemistry education - Harlow et al., 2020). As such, to increase internal capacity, stakeholders involved in PoT hiring should consider the importance of formal pedagogical or education research training in the evaluation of applicants. Current PoTs should seek out opportunities that enable them to develop as educators, including professional development from campus centers for teaching and learning or education-focused conferences. Further, institutions need to reward faculty for continuously enhancing their pedagogical knowledge by providing resources to attend such activities and valuing faculty participation in these in the merit and promotion process.

Confidence that they can make a real difference. Research suggests that PoTs' influence on their colleagues' teaching depends on their confidence. McMurran et al. (2024) found that PoTs' confidence that they can successfully perform their job and contribute to the well-being of their colleagues and students positively relates to whether they have adequate training in scholarship, the number of faculty peers they consider mentors, and the amount of resources made available to them. The authors also found that such confidence fully mediates the relationship between the above institutional factors (e.g., faculty mentors) and PoT's influence on their colleagues' teaching beliefs, knowledge, and practices. Importantly, the perception that PoTs are making a difference within their department is echoed by interview data from key university administrators, including university deans and department chairs, who noted that PoTs influence their colleagues' teaching practices and serve as key pedagogical resources for their campuses and departments (Harlow et al., 2020). To increase PoTs' confidence, the PoT hiring process should include a discussion of appropriate resources for the selected candidate (e.g., start-up funds), mentorship, and opportunities to participate in professional development. This support is universal for research-focused faculty but often not provided for teaching faculty (Bush et al., 2015).

Primary Influence 2: The institution's social and structural learning context

PoTs can also enhance their institution's internal capacity for educational change by impacting the broader university ecosystem (**Figure 1**). Research highlighting PoTs' influence on these institution-level-factors and recommendations to enable these faculty to enhance internal capacity are presented in the supplemental materials. Two of these factors, *relationships between teachers* and *history*, are discussed below.

Relationships between faculty. Faculty do not operate in isolation–they interact with an array of individuals across their institution. This social and structural learning context, a fundamental contributor to a campus' internal capacity, is characterized by a set of social forces and relationships between individuals. Healthy relationships provide a secure basis for learning (Stoll, 1999), wherein faculty interactions can lead to the formation of dynamic relationships that promote diffusion of instructional innovations and techniques (Couch et al., 2024). Thus, connection of faculty via social relationships can build internal capacity to achieve the educational mission of the university. Social network analyses of instructional discussion and influence networks highlight that PoTs play multiple brokerage roles amongst university faculty; importantly, PoTs are more likely to discuss instructional matters and provide advice about teaching to their colleagues, relative to their research-focused colleagues (Wilton et al., 2024) and may be involved in graduate student instructor training (Couch et al., 2024). PoTs are also disproportionately influential in discussions of diversity, equity, and inclusion in the classroom (Wilton et al., 2024) and are significantly more likely to interact with faculty across departments (Grunspan et al., 2021). Thus, PoTs have the potential to shape the environment they are in by

increasing opportunities for faculty interactions regarding teaching, which can build the institutions' capacity for internal change. Suggestions to boost PoTs' ability to influence their environment include ensuring that these faculty are placed on prominent department and campus committees that provide input on teaching matters, physically integrating PoTs within their department's physical space to increase interaction, and rewarding collaboration across departments.

History. Institutions of higher education have storied histories involving a multitude of university structures, administrative leaders, and individual stakeholders. The PoT position, while in existence for decades, recently emerged as a significant part of UC history due to a steep increase in hiring in recent years (Paine et al., 2024), mirroring increases in TFF hiring across the country (Bush et al., 2019). Today, PoTs comprise roughly 5-10% of tenure-track faculty in the UC system, although it is clear that different UC campuses are leveraging these positions to varying degrees (Harlow et al., 2020). Research has uncovered various rationales for PoT hiring with the primary focus being the ability of these faculty to carry a significant teaching load at a much lower cost relative to their research-focused counterparts. While this may fill an immediate need, this lack of strategic planning around what PoTs can offer to the university beyond teaching can impede PoT impact and their ability to influence an institution's internal capacit. We encourage administrators overseeing PoT hiring to consider the multitude of functions that these faculty can potentially embrace (e.g., curriculum development, discipline-based education research). Strategic planning in hiring should include discussions regarding the hiring process (the construction of the job advertisement and the evaluation of candidates), resource allocation to support PoTs across their careers, and the degree to which the hire aligns with the institution's educational goals. From a historical perspective, it is clear that the influx of PoTs more broadly signals a new period in higher education, and it is incumbent upon university leaders to ensure that the greater institutional context is being leveraged to promote PoT and student success.

Primary Influence 3: The external context

There are also factors that influence internal capacity beyond the institution (**Figure 1**). As of yet, empirical research highlighting the specific impacts of PoTs in these arenas does not exist, but we can speculate as to how PoTs may impact these external factors based on existing literature centered on TFF in general. For example, Bush et al. (2019) found that science faculty with education specialities are engaged in pre-service teacher preparation and K-12 science programming, a key educational component of the *local community.*

While comprehensive data do not exist in the realm of PoTs, there are examples of individual PoTs playing a role in the external context. In regards to the *local community*, the University of California Irvine initiated an in-prison Bachelor's degree completion program, Leveraging Inspiring Futures Through Educational Degrees (LIFTED), with significant contributions from PoTs in the development and administration of the program. In terms of the *professional learning infrastructure*, there are multiple PoTs that serve in leadership roles (e.g., Associate Dean or Director) within their campus' center for teaching and learning, offices of undergraduate education, and professional societies. As the UC considers how to leverage PoTs in the external context, it is important that they do so strategically, starting with their expectations for an individual in a PoT role beyond classroom teaching, ensuring that candidates have the appropriate expertise and the necessary resources and support to carry out these activities once in the position.

Conclusion

A central mission of higher education institutions is to promote the academic growth of all of its students. The very definition of student success reflects the diverse and changing needs of different student populations over time. Therefore, to successfully carry out this mission requires institutions of higher education to foster the development of an increased internal capacity for change that allows them to quickly and continuously adapt to the ever-changing needs of their community. The capacity building framework described here conceptualizes universities as complex ecosystems that require attention to multiple levels of personal, institutional, and external context simultaneously to effectively adapt and change in ways that can enhance student success.

In recent years, the emergence and expansion of TFF at research-intensive universities has demonstrated one key way that universities can increase their internal capacity for change to meet their educational missions. We recommend that administrators consider the capacity building framework to strategically hire and support TFF efforts to meet changing educational needs and to empower TFF to further enhance their ability to contribute to the internal capacity of the university. Similarly, researchers can leverage this framework to more broadly understand the impacts of TFF across the country. By considering the multitude of ways that TFF can enhance an institution's internal capacity, higher education will be better equipped to create more inclusive and equitable academic programs and outcomes.

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Table 1. Capacity building Influence 1 - individual faculty within the institution. For each factor, relevant PoT-related research is presented to highlight TFF's potential for increasing an institution's internal capacity along with recommendations for how institutions can enable TFF to increase their impact on capacity building. The examples discussed in the text are in bold.

Table 1. Individual Faculty in the Institution (Influence 1)

Factors	Definition	Relevant PoT-specific research findings	Recommendations to enable TFF to positively influence internal capacity
Life and career experience	Faculty's personal lives and career patterns shape their priorities, influencing their motivation to learn.	PoT demographics are similar to other faculty populations (roughly 50% male/female, predominantly White) (Harlow et al., 2020).	Leverage more inclusive hiring practices to promote diversity across TFF positions.
Beliefs	Faculty's beliefs and past experiences heavily impact how they perceive and respond to changes in teaching. For example, having a fixed mindset can shape attitudes toward student learning, and teachers may resist new methods if they contradict their established practices.	PoTs are less likely to endorse the belief that grading is a means for ranking students and have a high growth mindset (Park et al., 2024). PoTs have a self-imposed expectation that they engage in cutting-edge pedagogy activities that enable them to reflect on their teaching beliefs and practices (Williams & Sato, 2021).	Provide professional development to promote inclusive teaching strategies and endorsement/development of growth mindsets and reward faculty who participate in or facilitate such activities. Provide TFF with resources to engage in innovative pedagogical activities (e.g., access to new technology or active learning classrooms) and reward them for professional development.
Emotional Well-Being	Acknowledging faculty's interpersonal and psychological factors fosters trust, while neglecting them can lead to defensive behaviors opposed to innovation.	Satisfaction of PoTs' autonomy, competence, and relatedness needs correlates with influence on their colleagues' teaching beliefs, practices and knowledge (McMurran et al., 2024).	Enact policies and practices that treat TFF similarly to their research focused colleagues.
Knowledge	A faculty's deep knowledge of pedagogy, course content, and their students' backgrounds significantly influences their effectiveness, as it helps them understand and adapt to the classroom context and students' individual needs.	PoTs have advanced conceptions of teaching and learning (Rozhenkova et al., 2023) and are more likely to engage in professional development and adopt novel educational technologies (Williams & Sato, 2021). Despite being expected to serve as pedagogy experts, PoTs and research-focused faculty have similar prior training (Harlow et al., 2020).	Provide education-focused professional development to enable TFF to develop their pedagogical knowledge and the resources/incentives to support their participation. In hiring, consider the importance of a candidate's education-focused training (in addition to disciplinary research training).

Skills	Faculty are influenced by their range of teaching strategies and their ability to engage in a learning cycle of activity, reflection, meaning-making, and planning.	PoTs are more likely to implement active learning practices (Denaro et al., 2022) and create a student-centered learning environment (Rozhenkova et al., 2023).	See recommendations in "Knowledge."
Motivation to learn	Faculty need to be motivated to embrace change. They need a clear reason or sense of urgency, such as realizing their current approaches are ineffective. Instructors are more likely to learn new strategies if they are practical and relevant to their specific classroom context.	The PoT merit and promotion process encourages them to participate in relevant professional development and to continuously innovate in the teaching space (Harlow et al., 2022; McMurran et al., 2024).	See recommendations in "Knowledge." Fostering TFFs' autonomy and sense of belonging can increase their motivation. Thus, provide TFF with decision making power in their pedagogical activities and work to integrate TFF within the department.
Confidence that faculty can make a real difference	It is important for faculty to be confident that their actions can significantly impact student progress.	PoT confidence in their ability to perform their job is related to institutional support structures (e.g., faculty mentors). This confidence positively correlates with their perceived influence on their colleagues' teaching (McMurran et al., 2024). Administrators credit PoTs with being innovators and pedagogical resources for their colleagues (Harlow et al., 2022).	Administrators should ensure that TFF prior training is aligned with expectations of the job, particularly with regard to scholarship. Establish sufficient support for TFF professional development and maintain access to these opportunities throughout their career.
Sense of interdependence	Faculty benefit from connections and support. Many recognize the value of collaboration and are willing to adjust their relationships to achieve it.	PoTs' relatedness to their department correlates with their perceived influence on their colleagues' teaching (McMurran et al., 2024). PoTs are influential in departmental discussion and influence networks in regards to teaching and DEI in education (Wilton et al., 2024).	See recommendations in "Emotional Well-Being." Provide emphasis on creating venues for community building. Incentivize (e.g., through merits & promotions) and provide the means to establish collaborations.

Table 2. Capacity building Influence 2 - the institution's social and structural learning context. For each factor, relevant PoT-related research is presented to highlight TFF's potential for increasing an institution's internal capacity along with recommendations for how institutions can enable TFF to increase their impact on capacity building. The examples discussed in the text are in bold.

Table 2. Institution's Social and Structural Learning Context (Influence 2)

Factors	Definition	Relevant PoT-specific research findings	Recommendations to enable TFF to positively influence internal capacity
Particular mix of students	The composition of an institution's student body—including factors like size and diversity—plays a crucial role in shaping the university culture and functioning. Faculty must be capable of supporting students regardless of the particular student body.	PoTs are more likely to implement active learning pedagogies which are known to benefit minoritized students (Denaro et al., 2022). PoTs have more advanced conceptions of teaching and learning which can equate to more inclusive classrooms (Rozhenkova et al., 2023).	Provide TFF with the resources and incentives to: 1) participate in professional development opportunities that would support the learning of diverse students and 2) facilitate dissemination of such knowledge to colleagues.
Relationships between faculty	Productive collaboration in universities depends on positive relationships among faculty, as dysfunction can hinder improvement efforts, while healthy relationships foster a supportive learning environment.	PoTs play a central role in departmental discussion and influence networks in teaching conversations (Wilton et al., 2024). Teaching discussions are much more likely to occur between two PoTs than two non-PoTs. PoTs are also more likely to interact across departments (Grunspan et al., 2021).	Place TFF on committees (department, campus, admin) where they can provide input on teaching matters and priorities. Physically integrate TFF into the department (e.g., location of their offices) and provide opportunities for collaboration within and across departments.
Morale	Faculty morale can vary significantly between universities, even under similar external conditions, with some institutions fostering higher satisfaction and a more positive working environment than others.	Administrators note PoTs can be seen as second-class citizens relative to research-focused faculty (Harlow et al., 2022). Certain resources or opportunities (e.g., voting rights) can impact PoT perception of fit within the department. (McMurran et al., 2024).	Distinctions made between TFF and research faculty can negatively impact TFF morale. Thus it is incumbent upon university leaders to identify these distinctions and evaluate whether their value outweighs potential negative implications for TFF.
History	Universities experience life cycles where they may be more or less open to change, influenced by factors such as leadership or faculty dynamics. An institution's history can impact its ability to innovate and adapt.	PoT hiring has increased significantly over the past decade although the rationale for this hiring has not been driven by long term needs (Harlow et al., 2022; Paine et al., 2024).	TFF hiring should be aligned with the campus' strategic plans with sufficient resources and support structures in place to maximize their success and impact.
Culture	Institutional culture impacts how ready a university is for change. It encompasses beliefs and assumptions that shape the institution's reality and approach to	PoTs are seen as valuable resources based on administrator perspectives and their central positioning within department	See recommendations in "Morale."

	work. This culture is sometimes only apparent through observable behaviors, such as whether faculty work in isolation or collaborate. A culture that prioritizes student success and values innovative pedagogical approaches is more likely to address students' needs.	teaching networks (Harlow et al., 2022; Wilton et al., 2024). Signs exist that highlight PoTs' lack of equity with research-focused colleagues - including office spaces that are separate from the rest of the department's faculty or access to fewer resources. This signals a culture that values research over teaching (McMurran et al., 2024).	Increase the visibility of the institution's commitment to teaching (e.g., through public facing documents such as university strategic plans or job advertisements). Provide resources to support TFF and the institution's teaching mission.
Power issues	Institutions often are home to complex internal politics with faculty making strategic decisions based on their context and personal ambitions. Educational reforms often fail when institutions overlook changes in power dynamics	While there are many instances of PoTs' value highlighted by departmental colleagues, there are also perceptions of PoTs as second class citizens relative to their research-focused colleagues, which can lead to issues with power dynamics (Harlow et al., 2022).	Provide opportunities for TFF to have access to faculty power structures, for example by providing them with equal voting rights to their research focused colleagues or by making them eligible for administrative positions.
Support staff	In addition to faculty, staff who contribute to the university's educational mission can significantly impact the internal capacity through their involvement, interest, and facilitation of learning.	PoTs frequently interact with relevant non-faculty members of the teaching team (e.g., course coordinators) often lead TA training sessions, and are frequent adopters of learning assistant models in their courses.	Ensure mechanisms are in place to incentivize TFF to foster relationships with staff (e.g., in merits & promotions).
Structures	University structures, such as departments or the size of classes, shape an institution's ability to learn and adapt. While these structural aspects can limit faculty control, they influence the capacity for collaboration and change.	PoTs are more likely to teach large enrollment, introductory courses, which present unique challenges (Kye et al., 2024). PoTs are more likely to interact across departments relative to research-focused faculty (Grunspan et al., 2021).	Create a standardized means to assign teaching credit so that TFF are incentivized to teach more labor-intensive courses. Provide opportunities for informal or formal interactions at an institutional level to discuss education-related issues.
Leadership	Positive leadership is crucial for institutional effectiveness, significantly impacting faculty morale and motivation. Effective leaders foster a positive environment, while less approachable or autocratic management styles can have the opposite effect.	PoTs are increasingly found in leadership positions at UC campuses, including as central administrators (Associate Deans), departmental vice chairs, teaching and learning center directors, and committee chairs, among other related roles.	Elevate qualified TFF for relevant leadership positions at a departmental and institutional level. Provide them with opportunities to engage in leadership training.

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