



How Do You Solve A Problem Like Recruitment? On The Hiring and Retention of Computing Academics

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Abstract

This paper critically examines persistent inequities in existing computing faculty hiring and retention practices, which gravely impact computing educators from marginalized groups. Throughout these processes, applicants fight against multiple systemic barriers, including but not limited to, biased job ads and discriminatory interview practices. The increasing use of generative AI tools to aid in tasks connected to the hiring process, such as writing recommendation letters, exacerbates these biases. The inequities persist despite global initiatives and legal mandates and serve as a direct contradiction to widespread institutional commitments to diversity and inclusion. By building on literature and the lived experiences of the SIGCSE community represented in a recent Technical Symposium session, we raise concerns about the different stages of this process, highlighting the importance of clear expectations and adequate support. The paper concludes with a call to align hiring practices with inclusive institutional values, requiring the academic community to reflect on and revise hiring policies for a more equitable future. It is of paramount importance to address the role of these practices in the erosion of marginalized communities from the computing education community, a marginalization that occurs in many different contexts and negatively impacts everyone involved.

CCS Concepts

• **Social and professional topics** → **Computing education.**

Keywords

CS academics, recruitment, retention

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1 Introduction

Despite the commitment of academic institutions to fostering diversity, internationalization, and inclusive faculty representation [4], a disturbing and recurring trend becomes apparent: the majority of hires, particularly in computing, often exclude individuals from historically marginalized groups [22, 23] in favor of predominantly middle-class white men from privileged countries, thereby limiting the realization of diversity objectives. This issue is specifically prevalent in computing as a direct consequence of corporate cultures preferring certain groups while marginalizing others [31].

Over the last few years, there have been significant efforts by governments, academia, and industry to address inequities in computing. These have included cluster hiring, shadowing and mentoring programs, key policy recommendations for the G20 [20] to the promotion of equality, diversity, and inclusion at an institutional level, or in accreditation (e.g., ABET [1]). However, the impact of these efforts on the current situation in academia is limited [12].

University mission statements often emphasize the value of varied experiences and backgrounds irrespective of gender, race, or country of origin, e.g., as stated in Harvard University’s guidelines for best practices for faculty searches [9]. Universities in Hong Kong, Singapore and Switzerland aim to recruit approximately half of their faculty from the international market [30], whilst universities in China and Russia have allocated financial resources and offered incentives to attract international talent. There is also widespread use of position announcements that encourage individuals from underrepresented groups, with a particular emphasis on visible minority applicants. Despite all of these efforts, a noticeable dissonance emerges when evaluating actual hiring practices. This incongruity underscores a critical challenge wherein the rhetoric of inclusivity is not fully translated into equitable hiring outcomes.

2 Current concerns in academic hiring and retention policies

There is a troubling pattern of underrepresented groups either losing interest in academic careers during their postgraduate studies or leaving academia altogether for industry positions or other opportunities [15, 28]. This phenomenon has been greatly exacerbated during the COVID-19 pandemic [5] as the lack of support during that period had a significant impact on their well-being. This situation has detrimental social, economic, and ethical implications for

faculty underrepresentation in computing, which in turn, has an effect on the gender ratio of newly enrolled students.

Scholars in the current academic world are expected to have international experience, to the point where mobility is an expectation or even a requirement (e.g., by demanding that “Applicants should have worked scientifically outside [this University] for at least two years.”). However, mobility is not economically viable, or generally accessible – it may not even be desirable. For instance, Latine scholars in the US may be less likely to move because of *familismo*, prioritizing geographical closeness to family [25]. Early career academics from different identities, backgrounds and walks of life experience the application process differently. This can include different levels of knowledge about the process and its (sometimes hidden) rules, barriers, and strategies to overcome them.

In this paper we present perspectives on equity, focusing on the different stages of academic hiring processes. We discuss issues related to *position advertisement*, the *application process*, *interview process*, and *maintaining one’s first academic role*. **The goal** is to spark a discussion on policies and approaches. We further aim to highlight and discuss differences with respect to geographical location and culture, gender identity, and what an equitable academic search for faculty in computing education might include.

2.1 Position advertisement

A study of Computer Science (CS) faculty recruitment found that women submit fewer applications for their first job than men do [28]. Yet, it is important to diversify the pool of applicants. Doing so impacts the gender and race/ethnicity of the candidate(s) offered positions [4]. To improve the faculty’s gender balance, institutions should ensure their materials reach as many people as possible. Unfortunately, academic positions tend to be poorly advertised. They are either mostly accessible by internal candidates (giving them a competitive advantage) or publicized on a small scale with a one or two weeks turnaround period. The advertisements may use discriminatory language, exclusive or gender-biased imagery, and contain unclear or impossible requirements for first-time applicants.

Academic job ads also fail to include details about the recruitment process (i.e., who is involved and why, how many interviews will take place, are presentations expected, etc.), the decision period, and the actual starting date. The latter can deviate from the desired date depending on bureaucratic processes. Additionally, the potential salary (range) may either remain undisclosed or poor without providing relocation costs or other forms of financial support. Similarly, universities rarely support a partner’s relocation or assist with finding daycare, schools, or nursing homes for the family in a new city or country. This aspect particularly disadvantages individuals with caring responsibilities (disproportionately women) who are just starting their careers, but also people from low-income families without savings, access to generational wealth, or additional housing options. Relocation is thus a critical career aspect, especially since some institutions expect applicants to have worked elsewhere before offering a permanent faculty position.

2.2 Application process

Applications for academic positions are often lengthy and involved, requiring multiple written statements of two or more pages each.

These statements can include research and pedagogical qualifications, and visions for future work and activities. A diversity statement may also be required, which is particularly problematic for candidates from marginalized groups. It places the burden of addressing the diversity and inclusion problem on the ones experiencing the issues. This may in part explain why women submit fewer applications in their initial academic job search than men [28].

Typically, multiple reference letters are required which may prompt some to use generative AI tools that are trained on historically biased data, thus perpetuating stereotypes and producing generic, less personalized letters that fail to adequately highlight the unique qualifications of the candidate. In addition, providing at least two or three reference letters from previous employers or colleagues may be difficult if the candidate is applying to multiple positions, does not want to disclose their intention of leaving, or is in a situation where this can be misused by the letter writer, e.g., by threatening not to write the letter. The application itself may request repetitive, irrelevant, or inapplicable information via web forms without providing an opt-out or “prefer not to disclose” option. Online forms may further contain broken links, restrictive fields, and word counts, and they may not be accessible to individuals with disabilities.

Another factor concerns the inherent disclosure of personal information, such as name, age, place of birth, residence, perceived race or gender via adding a photo. Sharing this personal information can have detrimental effects for marginalized applicants. In 2012, a study investigated the role of gender in the hiring process of 127 science faculty members. Test subjects received identical applications, but evaluated those with traditionally male names with higher scores than the ones with traditionally female names [17].

2.3 Interview process

There are (unconscious) biases involved in the interview process, such as elitism, affiliation bonus (favoring candidates in one’s networks), cloning (when the candidate is similar to oneself), stereotyping, etc. [4, 16]. The literature is replete with evidence, notably involving gender during academic job interviews for computing positions [17, 29]. These biases include having an all-men (or single-man) panel, perceiving character traits in women as flaws whilst celebrated in men (e.g., assertiveness or likeability) [10], or asking questions related to marital status, age, and family responsibilities. Even though discriminatory questions are prohibited by law in some European countries [8], it is still common to ask them.

Even though hiring committees are cognizant about diversifying their faculty pool, that goal is often replaced by their search for the “ideal academic”. Such assessment criteria tend to work in favor of the kinds of research, experiences, and achievements predominantly found in men. Women are more likely to be assigned teaching activities or administrative responsibilities [21]. Moreover, women engage in research areas or employ methodologies that have lower odds of publication in prestigious journals. Studies in other STEM fields showed that overall, men have a higher h-index than women [11, 19], are more frequently listed as prestigious first or last author and have more single-author publications [32].

For online interviews, not (reasonably) accommodating time zone differences, disabilities, or other personal factors can put some

candidates at an additional disadvantage. Finally, some positions require a medical certificate from a specific health professional (who cannot be freely chosen) confirming the applicant's abilities.

2.4 Maintaining the first academic role

Recruiting faculty involves significant time and expenses. Ensuring that new faculty members have the resources and support they need is important to make that investment worthwhile. Thus, providing training and mentoring for newly hired faculty is crucial, since faculty who are dissatisfied with the level of support they receive are more likely to leave. This is especially problematic in fields where recruitment is already an issue, like in CS [6]. The literature shows that some types of support are particularly important for faculty to be productive in research and to meet requirements that may be present for retention and/or promotion [14, 26]. However, there may be a mismatch between the expected requirements and the support provided for achieving them [13]. Clarity of expectations is also important but can sometimes be lacking.

A study of CS faculty at Ph.D. granting universities in North America [14] found that tenure requirements included significant collaborative activities, including conference attendance. At the same time, faculty believed that their institutions were not providing sufficient support for the stated requirements. The study also found that faculty believed many requirements for tenure were not explicitly stated in policy documents. Further, the study found that untenured faculty had less staff support, funding for summer salaries, training, and for improvements to facilities than their tenured colleagues [14].

A systematic literature review found that faculty research productivity is impacted by institutional support and mentoring, including fewer course preparations, staff support, and peer recognition [13]. A study examined factors that should be provided to faculty to enable research productivity [26]. They identified nine aspects institutions should provide: time for research, facilities and access, financial support and funding, staff assistance, a constructive working environment, and a fair career system.

Research examining academic institutions in broader geographic locations, e.g., Saudi Arabia [3], Cambodia [7], Uganda [18], and Indonesia [27] indicates that government and institutional support, including fostering a research atmosphere, collaborating with foreign co-authors, and offering scholarships and study abroad programs, have a positive impact on research and publication output.

Institutions interested in retaining faculty need to carefully align support with retention and promotion requirements, make explicit the requirements faculty must meet to be promoted and retained, provide adequate support for conference travel, encourage collaboration among faculty, and provide needed staff support. Without careful attention to these issues, academic institutions risk losing faculty early in their career which harms both the impacted faculty and the overall success of the institution [28].

3 Positionality statement

The author group is comprised of international women and queer non-binary academics with varied experiences of sexism, racism, xenophobia, transphobia, and queerphobia in the workplace and

job market. We have also encountered barriers connected to neurodiversity and mental illness, and lack of financial support when expected to move (as a parent of small children). Holding citizenships from - in alphabetical order - Germany, Saudi Arabia, Spain, the United Kingdom, and the United States of America, we have different (lack of) passport privileges. In different roles, the authors have been on both sides of the hiring process during various stages of their careers. To expand our knowledge of lived experiences outside the ones represented by our group, we turn to the literature and listen to communities including the SIGCSE attendees at our session [2] and others we encounter in our different roles, e.g., union representative. We are all part of strong computing education research communities in the Western world, which entails an extra effort to use literature from outside dominant groups and unlearn our assumptions about which kind of knowledge is legitimate [24].

4 Implications for the community

It is imperative to scrutinize and reform hiring practices within a system marred by exploitation and exclusivity. By admitting the oppressive nature of this system and drawing attention to its flaws, we pave the way for collaborative efforts to devise inclusive solutions. Doing so is especially important in computing, as it has been observed that the hiring process is long and the success rate for hiring faculty is low [28]. Both academic institutions and computing faculty would benefit from reforms in the recruiting process.

Individuals in power positions must take responsibility to instigate change through policy revision and promoting equity in hiring practices. Those overseeing hiring often seem unaware of the obstacles international scholars face (e.g., financial and emotional costs of visa applications and family duties, particularly affecting underrepresented groups). Heightened awareness is necessary, grounded in research, to inform reforms in hiring policies.

Some concrete steps can improve interviewing and hiring processes. Rather than viewing a diversity statement solely as a way for a candidate to describe how they would support marginalized groups, such a statement could be a way for candidates to discuss their personal experiences. For example, they could discuss how diversity policies have benefited them, how they might expand on policies they have personally experienced, and how they feel existing policies may have gaps. To enable more flexibility for applicants, recommendations from peers rather than supervisors could be considered, helping to limit the unequal power dynamic that can result from requests for letters. Previous work has suggested other broader reforms for faculty searches, including a proactive rather than passive model, creating a more inclusive process, explicitly training participants in the process and then holding them accountable for outcomes [4].

For individuals without the ability to directly enact change, their contributed awareness is integral to the collective call for action. It is essential to emphasize that we recognize those individuals, and we want to convey that you are seen and your voices are heard. Questioning the necessity of international experiences becomes crucial amid a climate crisis as it raises valid concerns about the importance of upholding international experiences as a hiring requirement. Examining and possibly revising requirements like this can steer us towards a more equitable and sustainable future.

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