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# **The 13+ Club: An Index for Understanding, Documenting, and Resisting Patterns of Non-Promotion to Full Professor**

CHERYL GEISLER, DEBBIE KAMINSKI, and ROBYN A. BERKLEY

*Despite increasing access to some faculty ranks, women faculty members continue to encounter a glass ceiling when it comes to achieving the rank of full professor. In this article, we introduce the 13+ Club Index as a way to understand, document, and resist patterns of non-promotion for women. Despite the utility of metrics for documenting issues in women's advancement, many are difficult to come by and hard to interpret. As a result, women at an institution may feel that they can make no real progress because they do not have access to the data required to make their case. Using the concept of the 13+ Club—the faculty cohorts at an institution who are thirteen or more years past degree—we have developed an index to document patterns of non-promotion that overcomes these difficulties by relying exclusively on publicly accessible data. In the first part of this article, we introduce and describe the 13+ Club Index and detail some of the logistics of acquiring and constructing an index of non-promotion. Then we describe the way we have used this index at Rensselaer first to initiate and then to monitor change. We conclude with thoughts about how the 13+ Club Index can challenge institutions to examine the full scope of improving women's advancement.*

**Keywords:** women's advancement in academia / glass ceiling / metrics

## **The Glass Ceiling in the Academy**

Despite increasing access to some faculty ranks, women faculty members continue to encounter a glass ceiling when it comes to achieving the rank of full professor. In industry, the glass ceiling effect has been well documented since the first Federal Glass Ceiling Commission in 1995. A recent look suggests that women in industry are making progress. Data from the 2002 Equal Opportunity Commission (EEO) Survey of Private Firms in Private Industry report, for instance, that 36.4 percent of those serving as officials or managers in 2002 were women, up from just over 30 percent a decade earlier (Federal Glass Ceiling Commission 2004). By contrast, the percentage of women at the full professor rank in academia had only reached 20.9 percent by 1999–2000, up from just over 10 percent in 1981–82 (American Association of University Women 2005).

A comparison between the advancement of women to the senior ranks in academia and in industry has several benefits. It highlights the earlier and greater recognition that the problem has received in industry compared to the university setting, and it also suggests that academia may have something to learn from industry about techniques for improving advancement. Nevertheless, important differences in organizational structure between industry and the academy must be acknowledged. Specifically, while most industries share a simple hierarchical structure in which advancement is controlled top-down, the structure of the university is a matrix organization where a hierarchically controlled advancement system (chair, dean, provost) coexists uneasily with a peer-review advancement system (assistant, associate, and full professor). The exact relationship between these two advancement systems varies from institution to institution, but it is generally the case that hierarchical advancement is controlled locally whereas peer-reviewed advancement is managed, at least in part, nationally and internationally through the academic professions.

Our focus in this article is on discrepancies in advancement within the peer-review system, the system least resembling the industry model. Interestingly, however, the concept of glass ceiling may have even greater cogency here. Unlike industry, the academic ladder has only three rungs; differential movement of men and women up that ladder may, therefore, be easier to identify. And if, as some scholars have suggested (Cotter et al. 2001), a glass ceiling effect must reflect an *increasing* inequality of chances for advancement, a glass ceiling may be even more likely in academia than in the industrial arena. With only three rungs to the advancement ladder, it becomes harder to account for the undeniable differential representation of women in the senior ranks in academia through a model of constant cumulative disadvantage. That is, the evidence suggests it is not *just as difficult* to achieve the rank of full professor as to achieve the rank of tenured assistant professor, but rather that it is *more difficult*. This increase in difficulty at the higher rank is in the nature of a true glass ceiling effect.

The historic discrepancy between men and women faculty in terms of their representation at the rank of full professor is undeniable (Valian 1998). Data for select institutions have shown a range of women full professors from 10.3 to 17.2 percent in 2000 and from 12.5 to 19.7 percent in 2002 (Hornig 2003). Individual schools show similar patterns. For example, only 11 percent of the full professors at the University of Illinois at Urbana-Champaign were women in 1999 (Greendorfer et al. 1999). At Johns Hopkins, women made up 12 percent of the full professors in the same year (Weiss et al. 1999). Nationally, although the percentage is slowly improving, women are still less than half as likely as men to be promoted to full professor at doctoral granting institutions (Curtis 2005).

The problems with women's advancement in academia appear to be particularly pernicious in science and engineering. Since Massachusetts

Institute of Technology's (MIT) pioneering study of the status of women in the faculty of science (Hopkins et al. 1999), many leading technological universities have documented problems. Princeton, for example, found that the time to promotion to full professor for women in the natural sciences was 1.4 years more than for men (Zakian et al. 2003). Analysis of National Science Foundation (NSF) data on doctoral recipients indicates that even when background variables are accounted for, women are still less likely than men to occupy the senior ranks in departments in science and engineering (Long 2003). Indeed, many have expressed a concern that women scientists and engineers appear to be opting out of academic careers (Rosser 2004). In particular, although the numbers of women earning doctorates in scientific and technical fields have been on the rise, these increases have not been reflected in the percentages entering academic ranks. As a result, the representation of women full professors in science and engineering at research universities appears to be only a little over a quarter of what the figures show for academia generally—that is, compared to the 20.9 percent of *all* full professors who are women (American Association of University Women 2005), in science and engineering faculties at research universities, women represent only 5.6 percent of the full professor rank (average computed based on data from Nelson and Rogers 2004, Table 4).

Institutions wanting to improve their overall record on the participation of women have reason to look specifically at the advancement of women to the senior ranks. Research suggests that the overall climate for women depends upon the presence of senior women. Ely found that gender stereotyping is less common in organizations with more women in the senior ranks (1995). Work by Foschi has shown that women are, in general, held to a stricter standard of competence than men unless assessors are held accountable for their evaluations (1996). Recent work by Heilman and her colleagues has found that negative evaluations of women's competence occur only in domains considered unsuitable for women. Even when women are demonstrably competent, they may be negatively rated because they are disliked (Heilman et al. 2004). Tipping the gender balance at the senior levels, it is thought, may affect this perception of unsuitability and thereby lead to more fair and favorable assessments for women at all levels.

## **Metrics for Monitoring Advancement**

Given the likely benefits of increasing the numbers of women in the senior ranks, efforts are being made to monitor advancement. Benefits for monitoring are two-fold. First, and most obviously, monitoring women's advancement can make institutions accountable. It is a well-established principle in the literature on diversity that holding organizations

accountable for their performance using diversity metrics is crucial to bringing about change (Bensimon 2004; Minority Corporate Counsel Association 2007). Second, and more subtly, monitoring women's advancement can provide women themselves with the understanding and motivation to seek change. At MIT, for example, senior women in science saw the importance of monitoring data in countering their collective ignorance: "Only when women came together and shared their knowledge, only when the data were looked at through this knowledge and across departments, were the patterns irrefutable" (Hopkins et al. 1999).

## Salary Metric

Despite the importance of monitoring advancement, significant problems exist for women trying to use traditional metrics to document and effect change at their own institutions. Historically, the American Association of University Professors (AAUP) has used salary data to show gender inequities in the ranks (2002). Salary data, however, are often difficult to come by at a specific institution and problematic to interpret. Even at MIT, salary information was considered confidential and was therefore not provided to the Committee on Women Faculty for their landmark report (Hopkins et al. 1999). Salary data can, furthermore, be difficult to interpret; women who have been held back in lower ranks will often have salaries that do not look out of place in terms of rank. Salary data alone can thus mask serious advancement issues.

## Representation Metric

A more common approach to tracking advancement looks directly at the representation of women by academic rank. The AAUP added a representation metric to their annual study of the economic status of the profession in 2004, measuring for the first time the proportion of full-time faculty at the rank of full professor (Curtis 2005). As indicated by the earlier review, knowing the percentage of women holding the rank of full professor at an institution can be the first step in building awareness of problems or documenting progress. A representation metric alone, however, does not demonstrate the existence of an institutional problem. Given the historically low representation of women in academic fields, particularly in science and engineering, many institutions can and do argue that the lower representation of women at the senior ranks is a national pipeline issue over which they have no control. With fewer women available to hire, so the argument goes, there are inevitably fewer women to promote.

One answer to this pipeline argument has been supplied by the recent analysis of Nelson and Rogers who showed how the recent growth of women Ph.D.s in scientific and technical areas nationally has not been matched by an increase in hires into academic positions (2004). Here, by comparing representation data at two points along the national pipeline, one can demonstrate leakage in a way that substantiates a call for action. Such arguments can only work, however, as a snapshot of the level of the national marketplace. At a local institution, discrepancies in the representation of women across the ranks can continue to be excused on the grounds of marketplace shortages.

### **Years-in-Rank Metric**

More direct metrics of advancement look at years in academic rank. Used by Princeton, this metric showed a significant difference between men and women in the number of years between promotion to associate professor and promotion to full professor (Zakian et al. 2003). Like the salary metric, the years-in-rank metric can be both difficult to access and difficult to interpret. In terms of access, a years-in-rank metric requires complete promotion histories, in particular, the year of promotion to associate professor and the year of promotion to full professor. Although not considered as confidential as salary data, this kind of promotion data is not typically made public. In some cases, administrators may be able to provide figures from a single database; but in many institutions, promotion histories are buried in the files of individual faculty members, making access highly problematic. In terms of interpretation, a years-in-rank metric also poses difficulties. If the focus is only on those already promoted to full professor, as the Princeton study appeared to be, the metric may overlook faculty who are still languishing at the associate professor level.

### **Years-by-Rank Metric**

One metric exists that takes into account years of experience across the full spectrum of academic ranks, the years-by-rank metric. The years-by-rank metric looks at academic rank by the number of years since earning the doctorate. Such a metric, in effect, creates cohorts of faculty by year since degree and then looks at the distribution of academic rank within each cohort. In a literature review on gender differences in science and engineering, Bentley and Adamson suggest that years since degree was the most commonly used measure of experience (2003).

As Bentley and Adamson suggest, looking at a years-by-rank metric can reveal significant effects for gender. Comparing data across years can

create a picture of what an institution looks like in terms of advancement at a given period and how that picture can change over time. Shown in Figure 1, for example, is a graphic representation of years-by-rank data for women faculty at Rensselaer Polytechnic Institute in December 2001; Figure 2 shows comparable data two-and-one-half years later, in May 2004. To the right of the vertical line, we find those women with 13 or more years since highest degree. Those shaded in black have reached the rank of full professor; those in medium gray are still at the rank of associate professor; those in light gray are assistant professors.

We can see here two interesting developments with respect to advancement to full professor. First, noticeable shifts in rank have occurred between 2001 and 2004. In 2001, only 12 of the 24 women with 13 or more years since highest degree were full professors; 11 of the others were still associate professors; 1 was an assistant professor. Two and one-half years later, we find 17 women full professors, an increase that has come entirely from the promotion of 5 women from associate to full. Second, the rank of full professor (in black) appears two years earlier in 2004 (at 13 years from highest degree) than it had in 2001. Overall, then, years-by-rank data can point to institutional change. In this case, such data suggest that in 2004 women at Rensselaer were being promoted to full professor both more frequently and earlier than they had been in 2001.

### **The 13+ Club Index: A New Instrument for Institutional Change**

Despite the utility of most of the metrics reviewed above, women working for change at their institution can find data about salary and promotion history difficult to come by. As a result, the women faculty at an institution may feel that they can make no real progress on advancement because they do not have access to the data required to make their case. This was certainly the feeling among women at Rensselaer when we first began to discuss advancement issues in December 2001 in the wake of the MIT report (Hopkins et al. 1999) and the imminent arrival of a president considered to be one of the new women shattering the glass ceiling in science (Gwynne 2003). Our informal discussions suggested something was amiss in the advancement of women, but requests for a salary study had led nowhere, and we were looking for a way to move forward.

Our solution was the 13+ Club Index. The 13+ Club Index, building on the years-by-rank metric described in the last section, focuses on those with thirteen or more years since highest degree. Thus the 13+ Club, in effect, combines the years-by-rank cohorts with thirteen or more years since highest degree. With thirteen years from degree, we assume women to be eligible for promotion to full professor, considering six years as the

### Years-by-Rank Data for Women in 2004

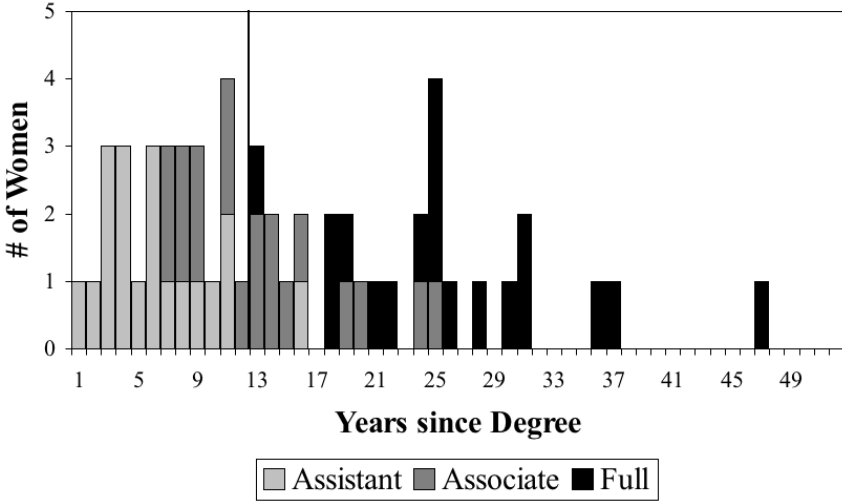


Fig.1. Years-by-rank comparisons for women faculty at Rensselaer Polytechnic Institute in December 2001.

### Years-by-Rank Data for Women in 2001

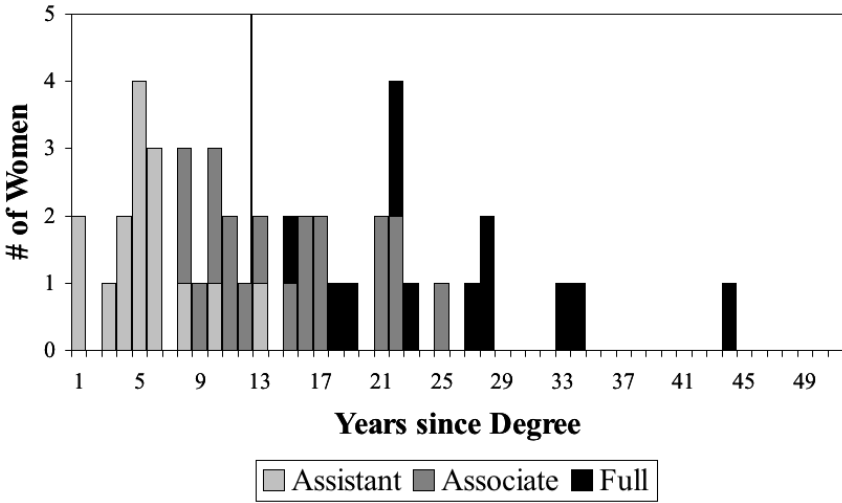


Fig. 2. Years-by-rank comparisons for women faculty at Rensselaer Polytechnic Institute in May 2004.



time period to associate and roughly another six to full. This choice of the thirteenth year is somewhat artificial but not without reason. Of course, some faculty members are promoted to full professor before their thirteenth year; others achieve promotion some time after the thirteenth year. By choosing the thirteenth year as the threshold for being included in the club, however, we sought to look at the members of the faculty who, in terms of years from degree, were often seen as eligible for promotion to full professor.

Using the 13+ Club Index involves examining an index of non-promotion, that is, the ratio between the percentage of women in the 13+ Club who have not yet been promoted to full professor and the percentage of men in the same situation. If the women and men at an institution in the 13+ Club are being promoted at the same rate, this index will be one. If women are being promoted more slowly, the index will be greater than one. In our experience, this index has been a sensitive indicator of an institution's progress on women's advancement. In the next section, we detail the specifics of calculating the 13+ Club Index and then, in the following two sections, describe its use at Rensselaer in 2001 and 2004.

## Calculating the 13+ Club Index

From our perspective, the 13+ Club Index has the benefit of being relatively easy to calculate for a particular institution. As we detail below, a list of the faculty along with academic rank is usually public. The basis for calculating years since degree is also relatively easy to find. And the analysis is not complex; for the two studies that have been conducted at Rensselaer, two days were required to research and analyze the data.

With respect to constructing a list of the faculty, faculty senates may provide the best route for accessing faculty membership rolls. At our institution, the Faculty Senate keeps a roll of the faculty for voting purposes, and this roll contains rank information as well. For those working at institutions where faculty rolls are not available through a senate, college catalogues may provide an alternative source for a faculty list; catalogues will provide information about current rank as well.

The year of terminal degree for each faculty member can be determined through a combination of methods. For those completing dissertations, *Dissertation Abstracts* can provide an authoritative source. For those in fields without dissertations (arts and architecture) or those obtaining degrees abroad, we consulted vitae published on personal or departmental websites, or, as a last resort, consulted with the faculty members themselves. Using this combination of methods, we were able to get data for all but three members of our faculty in the 2004 study, a rate of 99 percent.

1	2	3	4	5	6	7	8
LAST NAME	FIRST NAME	Year of Terminal Degree	Female	RANK as of 12/2001	Years from Degree in 2001	RANK as of 5/2004	Years from Degree in 2004
Geisler	Cheryl	1986	1	PROF	15	PROF	18

Fig. 3. Sample data record for a 13+ Club database.

Once a database is constructed, it can be maintained and updated on a regular basis. A sample data record from our database is shown in Figure 3. The first two fields (fields 1 and 2) identify the faculty member by name, which is held confidential. Although we never provide names in our reports, we do keep this information so that we can track new information year to year. The next field (field 3) shows year of terminal degree; this needs to be determined through the research described above. Information about gender (field 4) also must be determined through research or first-hand knowledge. Figure 3 shows, then, that the first author of this article received her highest degree in 1986 and held the rank of full professor at the time of both the 2001 study and the 2004 study.

Other data may be included in the database if available. Information about school and department can be included and used to examine disciplinary differences. In the analysis described later, for example, we looked at differences by school but decided that the numbers were too small to look at differences by department. Information about years since hire and rank at hire also may be included if known. At our institution, this information is not public and so was not included in our analysis. If known, however, the metric of years since hire and rank at hire can be used to examine disciplinary differences arising from the prevalence of career-delaying factors like post-docs.

Next come the data required for each 13+ Club study: rank and years since degree. Fields 5–6 and 7–8 show the data pairs used in the two studies we have conducted at Rensselaer. The first field in each pair (fields 5 and 7) shows information about rank. The last field in each pair (fields 6 and 8) shows information about years from degree. This is calculated by subtracting the year of terminal degree (field 3) from the year of the study: in this case, from 2001 for the 2001 study and from 2004 for the 2004 study.

Once we have the data on rank and years from degree, it is a simple matter to identify the members of the 13+ Club and then to construct the 13+ Club Index of non-promotion. As shown in Figure 4, we first calculate the percentage of the members of the 13+ Club who are still at the level of associate professor. In the example in Figure 4, these percentages are 23 percent for women and 21 percent for men. Then we divide the percentage

	% of Associate Professors in 13+ Club
Women	0.23
Men	0.21
13+ Club Index	1.1

Fig. 4. Sample calculation of the 13+ Club Index of non-promotion.

for women by the percentage for men. In our example, this yields an index of 1.1, which would indicate near parity between men and women in the rates of non-promotion.

## Using the 13+ Club Index to Bring about Change: The 2001 Study

In this section, we describe the way the 13+ Club Index was used in an initial study at Rensselaer in 2001 to bring about institutional change. As we mentioned earlier, motivations leading up to the 2001 study included a sense that something was amiss in terms of women's promotion at Rensselaer. Informally, we knew that many among the women faculty had not yet been promoted, but like the women at MIT, each thought the issues were individual. We all knew of many men in similar circumstances. Thus, when we undertook to look at the 13+ Club, we were not prepared for the magnitude of the differences we found.

Figure 5 shows the patterns for the 13+ Club data for Rensselaer as a whole and for individual schools. Overall in 2001, 48 percent of the women in the 13+ Club at Rensselaer had not yet been promoted; the comparable percentage for men was 21 percent. In other words, women in the 13+ Club were 2.3 times less likely to have been promoted than men.

As Figure 5 also shows, data by school were largely consistent with this overall pattern:

- In Engineering, 50 percent (1 of 2) of women who were 13 or more years since highest degree had not been promoted vs. 20 percent (18 of 90) of men;
- In Humanities and Social Sciences, 64 percent (7 of 11) women who were 13 or more years since highest degree had not been promoted vs. 22 percent (5 of 23) of men;
- In Architecture, 100 percent (1 of 1) of women who were 13 or more years since highest degree had not been promoted vs. 50 percent (4 of 8) of men;
- In Management, 100 percent (2 of 2) women who were 13 or more years since highest degree had not been promoted vs. 36 percent (4 of 11) of men.
- In Science, women actually appeared to be doing slightly better than men at advancing: 0 percent (0 of 7) women who 13 or more years since highest degree had not been promoted in 2001 vs. 14 percent (9 of 63) of men.

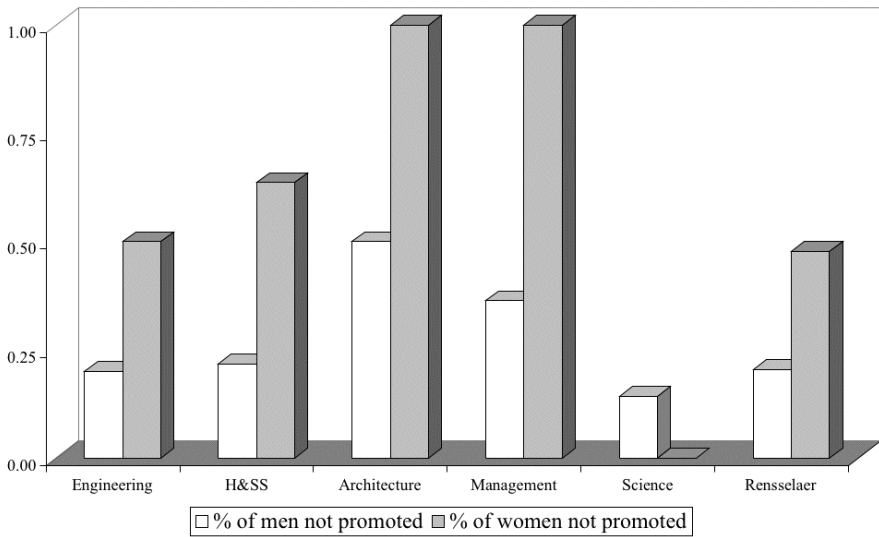


Fig. 5. Promotion patterns revealed by the 2001 study of the 13+ Club.

As these numbers indicate, the actual numbers of women in some of the schools were very small in 2001, reflecting historic problems in hiring and retention. As mentioned earlier, this kind of low representation can often make it difficult to identify specific problems in advancement processes over and above any problems that might exist in hiring and retention. By using the 13+ Club Index, however, we can point to problems that are specific to advancement. In the case of this data, for example, we were able to show that even for the sometimes few women who had been hired, tenured, and retained by Rensselaer, the likelihood of being promoted to full professor was far smaller than for their male colleagues.

One additional notable feature of these data is how much better women in the School of Science had fared in comparison with women from the other schools at Rensselaer. In fact, the success of this cadre of women scientists at Rensselaer was dramatically higher than the national figures. A study done in 1993 showed only 31 percent of women in science who earned their degrees before 1985 were full professors compared with 59 percent of the men (Valian 1998, 223).

A closer look at our data suggests, for reasons about which we can only speculate, that the 13+ Club women in science appeared to be made up of a more senior cohort than the rest of Rensselaer women. In the School of Science, the average time from terminal degree of the 13+ Club was 28 years; in the university as a whole, it was 22 years. This is a six-year difference, in effect, one tenure-generation. Looking for the earliest date

of degree shows the generational difference even more clearly. The most senior woman in science had earned her degree 44 years before our analysis. The most senior woman in the rest of the university earned her degree a full sixteen years later. As we mentioned earlier, research suggests that the presence of senior women will improve the overall climate for women. Though our data here are only suggestive, it may be that the earlier appearance of women in the School of Science improved the prospects for the women who came after them.

Subsequent to the distribution of the report of this first study, numerous changes took place, both institutional and individual. Institutionally, the women faculty met several times with the provost to discuss changes in policy and procedure that could improve the advancement picture for both men and women. In response, the provost did make procedural changes, requiring each department to review all associate professors before putting any single individual up for promotion. In addition, as a group, the senior women faculty organized to ensure that a woman was nominated to serve on the faculty committee on promotion and tenure, something that had not generally been the case before 2001 but has been true since.

At the individual level, five of eleven women, who for the first time realized that they were members of the 13+ Club, put themselves up for promotion. In some cases, they encountered resistance from department chairs who initially discouraged their requests; with the results of the 13+ Club study in mind, however, the women faculty refused to give in. In another case, there was a resort to an appeal. Nevertheless, by 2004, all five had been promoted, achieving an increase in rate of promotion for women at Rensselaer that was more than three times the rate for men in the same period and increasing the number of women full professors on the faculty from 12 to 17.

## **Using the 13+ Club Index to Monitor Progress: The 2004 Update**

Once the 13+ Club Index has been used to document problems with advancement at an institution, it can be used again to monitor institutional progress. In fall 2004, we undertook to update the 2001 analysis to examine the impact of two significant changes that occurred at Rensselaer relevant to the advancement of women. First, as mentioned above, a significant number of the women in the 13+ Club had now been promoted. Second, the size and composition of the faculty at Rensselaer had changed. The size of the faculty had increased by 12 percent and turnover had reached 21 percent. As a result, of the faculty on campus in our original study, 6 percent had either left or retired and of the faculty on campus

## Change in the 13+ Club Index 2001 to 2004

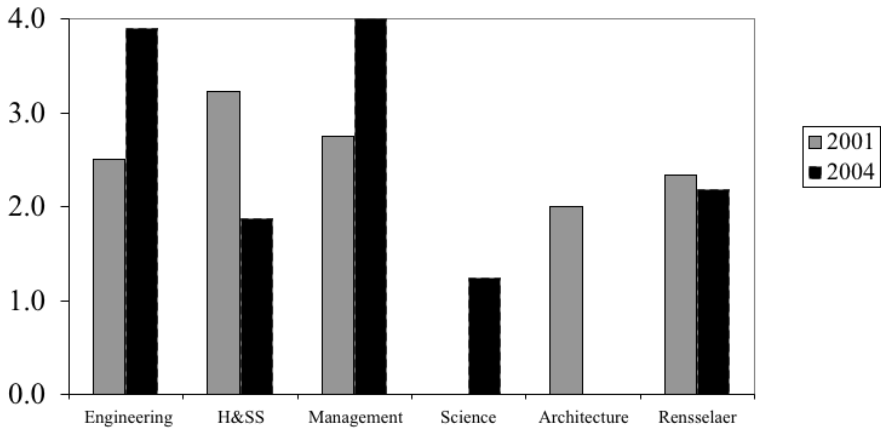


Fig. 6. Change in the 13+ Club Index, December 2001 to September 2004 by school and overall.

in 2004, fully 17 percent had arrived in the previous two years. Taken together, these changes meant that of the 363 members of the faculty in 2004, only 303 had been included in our original 2001 13+ Club study.

Figure 6 shows the result of our comparison. At Rensselaer overall, the 13+ Club Index declined from the 2.3 in 2001 to 2.2 in 2004. This change, though in the right direction, was lower than we expected given the level of institutional and individual activity described earlier. A look at the patterns for individual schools began to show us why. The overall decline in the index for Rensselaer came from decreases in just two schools, Humanities and Social Sciences and Architecture. In the Sciences, Engineering, and Management, the 13+ Club Index actually increased over this time.

As we probed further into the developments underlying this overall change, we began to illuminate both institution-specific problems in the advancement of women and more general issues. In the case of Rensselaer, the relatively small change in the index was the result of four interacting forces:

- **Promotions among Women in the 13+ Club:**

First, as we noted earlier, five of the women in the 13+ Club in 2001 had sought and received promotion by 2004, leading to an overall decline in the rate of non-promotion from 48 to 36 percent. This factor was the major positive force in bringing the 13+ Club Index down over 2½ years from 2.3 to 2.2.

- **Promotions among Men in the 13+ Club:**

Second, the rate of non-promotion for men also declined during this period, going from 21 to 16 percent. This factor actually lessened the impact of the overall decline in non-promotion for women on the 13+ Club Index.

- **Promotions from Pipeline:**

Third, nearly all of the women coming up through Rensselaer's pipeline to join the 13+ Club after 2001 were not promoted. Specifically, of the six women who crossed the thirteenth-year threshold between 2001 and 2004, only one was promoted to full professor. Thus, the five women from the club who had been promoted by 2004 had been replaced by five new women from the pipeline. The overall effect, then, was to keep the total number of unpromoted women at a steady state.

- **Senior Hires:**

And finally, hires into the full professor ranks, aggressively pursued at Rensselaer in this period, were all men. While 35 percent of the male hires were at the rank of full professor between 2001 and 2004, none of the women's hires was at this advanced rank.

## Conclusion

As our case study suggests, four forces combine to influence the 13+ Club Index in ways that challenge institutions to examine the full scope of improving women's advancement: promotions from the 13+ Club for women, promotions from the club for men, promotions from the pipeline, and senior hires. Focusing on one to the exclusion of the others can lessen the impact of an institution's efforts. In the case of Rensselaer, our efforts had been on improving the promotion rate for women already in the 13+ Club in 2001; in this we succeeded. But other factors came into play in the same time period to make the change in the 13+ Club Index less than we had anticipated.

Understanding these factors is instructive for any institution concerned with equity in women's advancement to full professor. To begin with, it appears that whenever the climate at an institution improves with respect to advancement, men will benefit as well as women. At Rensselaer, the rate of promotion for men in the 13+ Club during this period, while not equal to that of women, was still very high. Next, pipeline issues are notoriously difficult to ameliorate. While it may be possible to reduce the rate of non-promotion of women already in the 13+ Club relatively quickly, reducing the flow of the pipeline into the ranks of the non-promoted may be a longer term project (Williams 2004). And finally, achieving equity in senior hires is particularly difficult. While processes can be put into place to ensure a diverse pool of applicants, the pool of available women applicants at the senior rank is still limited. Institutions may want to consider novel solutions to hiring qualified senior women,

including recruiting from industry or national laboratories, where, as we noted in the introduction to this article, women's advancement seems to have been more successful.

Taken together, the case study at Rensselaer suggests the ways that the 13+ Club Index can be used by women faculty to understand, document, and resist patterns of non-promotion to full professor. Two limitations ought, however, to be kept in mind whenever the index is constructed and used. First, any institutional portrait is true only at the moment it is taken. The hires and promotions that take place in any given year or semester may have significant impact upon the overall picture. Second, if, as at Rensselaer, a policy allows for a part-time tenure track, this may intentionally delay a candidate's promotion. A woman who works half time, for instance, may not be considered eligible for promotion until her twelfth year. If such a policy is used more often by women than by men, it could eventually inflate the index.

Nevertheless, the 13+ Club Index, relying on relatively easy-to-access public data, can provide women at a wide range of institutions with a real tool for bringing about institutional reform. The index also has the potential to serve as a cross-institutional benchmarking tool that can provide women with good grounds for either joining or declining to join a specific institution. Overall, then, we suggest that the 13+ Club Index has the potential for becoming a useful addition to the arsenal of tools available to women working to transform academe.

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## References

- American Association of University Professors. 2002. *Paychecks: A Guide to Conducting Salary-Equity Studies for Higher Education Faculty*. Washington, D.C.: AAUP Press.
- American Association of University Women. 2005. *Tenure Statistics*. Retrieved from [http://www.aauw.org/laf/library/tenure\\_stats.cfm](http://www.aauw.org/laf/library/tenure_stats.cfm).
- Bensimon, Estela Mara. 2004. "The Diversity Scorecard: A Learning Approach to Institutional Change." *Change* 36:44–52.
- Bentley, Jerome T., and Rebecca Adamson. 2003. *Gender Differences in the Careers of Academic Scientists and Engineers: A Literature Review*. Special report prepared for the National Science Foundation. Retrieved from <http://www.nsf.gov/sbe/srs/nsf03322/start.htm/>.
- Cotter, David A., Joan M. Hermsen, Seth Ovadia, and Reeve Vanneman. 2001. "The Glass Ceiling Effect." *Social Forces* 80:655–81.
- Curtis, John. 2005. "Inequities Persist for Women and Non-tenure-track Faculty: The Annual Report on the Economic Status of the Profession 2004–2005." *Academe* 91:20–30.
- Ely, Robin J. 1995. "The Power in Demography: Women's Social Constructions of Gender Identity at Work." *Academy of Management Journal* 38:589–634.

- Federal Glass Ceiling Commission. 2004. *Glass Ceilings: The Status of Women as Officials and Managers in the Private Sector*. Washington D.C.: U.S. Equal Employment Opportunity Commission.
- . 1995. *Good for Business: Making Full Use of the Nation's Human Capital*. Washington DC: The Bureau of National Affairs, Inc.
- Foschi, Martha. 1996. "Double Standards in the Evaluation of Men and Women." *Social Psychology Quarterly* 59:237–54.
- Greendorfer, Susan, Joan Alster, Susa V. Anderson, Bonnie Armbruster, Evelina Bozek, Victoria Gonzalez, Samantha King, Jane Leuthold, Crystal Marshall, Rychetta Watkins, Emily Watts, and Joyce Wolverton. 1999. *The Status of Women at the University of Illinois at Urbana-Champaign*. Retrieved from <http://www.oc.uiuc.edu/csw/report/>.
- Gwynne, Peter. 2003. "Women in Science: Shattering the Glass Ceiling." Advertising Supplement. *Science* 299 (5608). Retrieved from [http://sciencecareers.sciencemag.org/feature/advice/foc\\_02\\_07\\_03.shl](http://sciencecareers.sciencemag.org/feature/advice/foc_02_07_03.shl).
- Heilman, Madeline E., Aaron S. Wallen, Daniella Fuchs, and Melinda M. Tamkins. 2004. "Penalties for Success: Reactions to Women Who Succeed at Male Gender-typed Tasks." *Journal of Applied Psychology* 89:416–27.
- Hopkins, Nancy, Sallie W. Chisholm, Jerome Friedman, Daniel Kleitman, June L. Matthews, Mary C. Potter, Paola M. Rizzoli, Leigh Royden, Robert J. Silbey, and JoAnne Stubbe. 1999. *A Study on the Status of Women Faculty in Science at MIT: How a Committee on Women Faculty Came to be Established by the Dean of the School of Science, What the Committee and the Dean Learned and Accomplished, and Recommendations for the Future*. Retrieved from <http://web.mit.edu/fnl/women/women.html>.
- Hornig, Lilli S. 2003. *Equal Rites, Unequal Outcomes: Women in American Research Universities*. New York: Kluwer Academic.
- Long, J. Scott. 2003. "The Presence and Participation of Women in Academic Science and Engineering: 1973–1995." In *Equal Rites, Unequal Outcomes: Women in American Research Universities*, ed. Lilli S. Hornig, 145–74. New York: Kluwer Academic.
- Minority Corporate Counsel Association. 2007. *Metrics for Success: Measurement in Diversity Initiatives*. Retrieved from <http://www.mcca.com/index.cfm?fuseaction=page.viewpage&pageid=615>.
- Nelson, Donna, and Diana C. Rogers. 2004. *A National Analysis of Diversity in Science and Engineering Faculties at Research Universities*. Retrieved from [http://www.now.org/issues/diverse/diversity\\_report.pdf](http://www.now.org/issues/diverse/diversity_report.pdf).
- Rosser, Sue V. 2004. *The Science Glass Ceiling: Academic Women Scientists and the Struggle to Succeed*. New York: Routledge.
- Valian, Virginia. 1998. *Why So Slow? The Advancement of Women*. Cambridge: The MIT Press.
- Weiss, Susan, Ann Arnold, Toby Ditz, Robin Fox, Linda P. Fried, Leslie Hall, Linda Rose, and Linda Tsantis. 1999. *Recruitment, Retention, and Professional Development of Women Faculty: A Report from the Academic Issues Subcommittee of the Provost's Committee on the Status of Women*. Baltimore: Johns Hopkins University Press. Retrieved from [http://www.jhu.edu/news\\_info/reports/womenfac/](http://www.jhu.edu/news_info/reports/womenfac/).
- Williams, Joan C. 2004. "Hitting the Maternal Wall." *Academe* 90:16–20.

Zakian, Virginia, Bruce Draine, Lin Ferrand, Joan Girgus, Ruby Lee, Christina Paxton, Catherine Peters, Dan Rubenstein, Sandra Troian, Suzanne Walker, and Bess Ward. 2003. *Report of the Task Force on the Status of Women Faculty in the Natural Sciences and Engineering at Princeton*. Retrieved from <http://www.princeton.edu/pr/reports/sciencetf/sciencetf-9-19-03.pdf>.