

Minutes\*

**Senate Committee on Faculty Affairs  
Tuesday, March 27, 2012  
2:30 – 4:30  
238A Morrill Hall**

Present: George Sheets (chair), William Beeman, Ben Bornsztejn, Jennifer Fillo, Kathryn Hanna, Joseph Konstan, Frank Kulacki, Theodor Litman, Christine Marran, Benjamin Munson, James Wojtaszek

Absent: Kathryn Brown, Haojun Caoxu, Arlene Carney, Dann Chapman, Randy Croce, Barbara Elliott, Geoffrey Sirc, Pamela Stenhjem

Guests: Kate McCready (University Libraries), Peggy Sundermeyer (Office of the Vice President for Research); Professors Caroline Hayes and Rebecca Ropers-Huilman (Women's Faculty Cabinet); Cynthia Murdoch (Office of the Vice Provost for Faculty and Academic Affairs)

Other: Jon Steadland (Office of the President)

[In these minutes: (1) networking tools and faculty expertise database; (2) gender-equity faculty salary study; (3) faculty appointment data; (4) statement on faculty productivity]

**1. Networking Tools and Faculty Expertise Database**

Professor Sheets convened the meeting at 2:30 and welcomed Msses. McCready and Sundermeyer to report to the Committee about SciVal, a system that it is proposed to replace the faculty database (UData) the Committee discussed about a year ago.

Ms. McCready began by explaining that University Libraries and the Office of the Vice President for Research are co-sponsoring SciVal Experts, Scopus, and SciVal Funding, an effort driven by the deans and research associate deans, the costs of which are being shared by the Libraries, the Vice President's office, and 11 colleges on the Twin Cities campus (CBS, CSE, CFANS, CLA, CEHD, and the 6 schools/colleges of the AHC).

[The following excerpt from the March 5, 2012, minutes of the Senate Research Committee present the background and initial comments from Ms. McCready. The discussion at this meeting follows the excerpt.]

Ms. McCready provided a handout with additional information (between the \* \* \*).

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\* These minutes reflect discussion and debate at a meeting of a committee of the University of Minnesota Senate; none of the comments, conclusions, or actions reported in these minutes represents the views of, nor are they binding on, the Senate, the Administration, or the Board of Regents.

SciVal is a suite of products including an extensive database of publication citations (Scopus), a tool for collaboration and scholarly networking (SciVal Experts), and a funding opportunities database (SciVal Funding) from Elsevier. The project is co-sponsored and implemented by the Office of the Vice President for Research and the University Libraries.

The University of Minnesota's instance of SciVal Experts, called **Experts@Minnesota**, will create Web-accessible profiles of University faculty based upon their collegiate and departmental affiliations as well as their publications. It will be an upgrade to the current <http://www.experts.umn.edu> website that profiles some of our faculty. The University will provide SciVal with public data on faculty (names, contact information, department and college affiliations, and grant information) to form the basis for these profiles. This public data from the University will be matched with publication and funding data harvested from the Scopus and SciVal Funding databases. Once the profiles are completed, relevant and timely funding opportunity recommendations will be matched to individual scholars/researchers in the system. If they choose, they will receive email alerts, on an ongoing basis, based on their profile information and customizable descriptions of research interests. Note that these funding recommendations include federal, foundation, and non-US sources of funding.

**TIMING:** This is a three-year pilot implementation.

**WHO'S COVERED:** The proposed implementation will create profiles for 4,400 UMN-Twin Cities faculty and postdocs. It contains profiles for those people whose primary position categorization on campus is that of "Faculty" (which excludes, teaching specialists, lecturers, and grad students in teaching roles). Research associates (still in planning stage), librarians, and administrators with tenure or on the tenure-track who also have faculty positions, will be included. Visiting faculty are not included.

**FUNDING:** OVPR and University Libraries will provide base support. Selected colleges will cost-share support based on a tiered model of impact/benefit (CBS, CEHD, CFANS, CLA, CSE and the schools/colleges of the AHC). The Libraries will provide ongoing funding for the citation database, Scopus.

More information can be found here: <http://www.lib.umn.edu/about/experts>

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Ms. McCready outlined the licensing of the SCOPUS citation database. It "indexes peer reviewed publications in all discipline areas, contains 46 million records, 70% with abstracts, includes materials from 19,500 titles, includes over 4.6 million conference papers, provides 100% Medline coverage," and has other features as well. It is stronger post-1996 (the period since then accounts for about 25 million of SCOPUS's records). It is available to all campuses of the University. The Libraries have also coordinated the licensing of the SciVal Funding database—which will also be available to all campuses of the University. SciVal Funding provides information on federal, state, and private foundation opportunities and also allows grant coordinators to manage/track announcements. These two databases are integrated and feed into the third product that was licensed, SciVal Experts.

SciVal Experts "creates profiles, 'seats', for all UMN TC primary faculty, & post-docs. Publication data from Scopus is matched with local data (e.g. public directory information, grant awards) to create a public display of UMN expertise to anyone on the Web. SciVal Funding is then integrated & sends opportunities to seat holders."

There are two other expert databases at the University, Ms. McCready said, one of which is outdated (has not been updated since 2007) and one in the Academic Health Center that pulls information from PubMed—and cannot be expanded beyond that. SciVal Experts pulls data from SCOPUS and SciVal Funding (Elsevier products), to create profiles that matches expertise with funding opportunities (one can opt into notifications of these matched funding opportunities; it is not automatic).

Before the system is activated, there will be individual email messages to all 'seat' holders in April. The message will explain what the profile will look like, provide opportunities to make changes, or to opt out of the system. There are three possible changes someone can make: (1) a link to a CV, (2) a link to a home page, and (3) add a statement of about research interests. This is all to be completed by April (but anyone can make changes later as well).

[End of excerpt from the Senate Research Committee minutes.]

Professor Sheets asked how far back the Scopus database goes. There are about 25 million records from 1996 forward, Ms. McCready said, and before that, there are about 20 million records going back to 1960. The Web of Science is stronger historically but it only covers about half the number of journals.

Ms. McCready again reviewed the other databases that have been in place at the University and concluded that SciVal Experts is the best platform (in comparison to other expertise and research networking platforms in existence) to include everyone, from all disciplines, on campus. Staff at the University send to the technical staff at SciVal directory information about people who want a profile; the SciVal staff then do an automated search and human review of the results (to check the accuracy of the names, insure there are no mistakes, etc.) and the create a profile. SciVal experts can be used in a couple of ways by faculty members to find potential collaborators and they can also find out information on funding opportunities. The system also allows administrative access in order to send funding opportunities to faculty members who may not receive the regular updates.

They are phasing in the system with 3000 faculty, Ms. McCready reported, a little more slowly in the College of Design and the College of Liberal Arts, and they are sampling in humanities areas in order to be sure that the system has features that allow robust profiles and to identify ways to enhance the system so that faculty members can include a statement of their research interests and a link to a homepage. Faculty members will also be allowed to opt-out.

Professor Kulacki inquired about the cost of the system and related questions. It will be \$750,000 over three years for the pilot. The costs are not being shared equally among the offices/colleges that are contributing and it has taken part of her time for about six months to implement the system. Professor Kulacki also asked if there are criteria by which to judge whether the system is effective. There are, Ms. McCready said.

Ms. Sundermeyer reported that they will be assessing three competing tools available on campus (SciVal Experts, SciVal Funding, and Proquest Pivot) at the same time, but they see these tools as either/or and will sunset the ones they decide are not used by faculty or research staff.

Professor Beeman said that one gigantic flaw in SciVal is that it is virtually useless for the humanities and social sciences because it does not cover books, textbooks, and chapters in books. The system is biased toward the physical and biological sciences. Conference papers, which SciVal includes, do not count as heavily in the humanities and social sciences as do other publications. There will be no way to get humanities and social science citations—but Amazon and Google can get them. Why not use them?

Ms. McCready said that they have talked with the SciVal staff about this problem; they say they are working on other data sources. These are young systems, she observed, and will develop. But Amazon can already do it, Professor Beeman pointed out, so it can be done.

Professor Sheets suggested there be a disclaimer that notes the limitations of the system for faculty members in the arts and humanities. Such a disclaimer could also serve as a spur to a speedier development of a remedy. Ms. Sundermeyer said there is a separate landing page for the public and it would be especially important that the disclaimer appear there because it would affect reactions. That is also why they are urging faculty members to include a statement of their research interests, because that is a searchable field. Faculty members in the Academic Health Center (AHC) report that the system they use makes it difficult to find research collaborators outside the AHC.

Professor Marran posed several questions. Has the system been adopted at other universities, and if so, have they talked with people at those institutions about the pluses and minuses of the system? Why use a database that is not set up for the humanities and social sciences? Are other systems available? Why not do this internally rather than buying a system? The name "SciVal" is a hint that it does not include the humanities and social sciences; why not find a system that does? All faculty members could use help updating their websites and one could find colleagues if that work were done.

Ms. McCready said development of U MN Profiles was driven by the CTSI faculty and staff but it can only harvest PubMed data. There are a number of other "research networking" platforms (e.g., VIVO, etc.) but SciVal Experts is the only one that has a large citation database and funding opportunities database integrated (Scopus and SciVal Funding); the other platforms are smaller and more focused on the sciences. This is a work in progress, she said, a pilot, and it has room to grow. They will constantly evaluate other platforms and databases.

It seems strange to spend so much money on a system that does not cover so many faculty members and only goes back to 1980, Professor Marran commented. Ms. McCready reported that Scopus is \$100,000 per year for the citation database—that is the largest part of the expense.

Professor Konstan said he did not believe 1980 is a problem if one is looking for current expertise. But he said he does have a problem in that there is nothing said about handing money to Elsevier, which is the company that owns SciVal. Elsevier has a low reputation among many in academe and it has its heart in the areas where it can extort the most money—which is the physical and biological sciences, not the humanities, where people are either too poor or too sensible not to spend money on Elsevier. [Ms. McCready later responded that there is language in the handout and on the FAQ site

noting the Elsevier ownership. She also noted that, as a librarian, she also holds personal opinions about Elsevier but this is the best product available at this time.]

The cost is not that high, Professor Konstan said, because it would cost just as much or more for the University to hire people to set up its own system. The University has gone through many expertise database projects and in each case they've failed--perhaps this is because there isn't a real need for or faculty desire for this database rather than a problem with the specific implementation. The faculty needs to have a serious discussion after two years (in time to decide whether to continue this pilot) with this committee and the Senate Research Committee in order to really assess whether SciVal is making life better. If not, there should be a 15-year moratorium on expertise databases and people can just use Google.

Professor Hanna asked about the relationship between SciVal and the database the Committee talked about a couple of years ago. That one would create annual activity reports. Ms. Murdoch reported that her office was involved in work on UDATA. UDATA was intended to be a hub which would pull in existing data from University sources, and also allow new faculty activity information to be entered about books, performances, media appearances, etc.—all the ways that scholars do their work. UDATA was always intended to have an expertise component. Ms. Murdoch and Ms. McCready believe that SciVal and UDATA could work together, sharing data and allowing more robust faculty profiles to be produced. The UDATA project is pending, however, along with other projects in the Office of Information Technology which are competing for OIT resources. Ms. McCready said that they made sure, in the contract negotiations with Elsevier, that the University can harvest data from Scopus to put it into other systems.

Ms. Fillo asked why postdocs are included, who are at the University only two years, but graduate students are not, who may be here five or six years. Both may publish while they are here. Ms. McCready said that the Office of the Vice President for Research urged that postdocs be included. The site is open so anyone with an Internet connection can look at profiles. Ms. Fillo said it would be beneficial if graduate students could have a profile on SciVal when they are out on the job market, one that would allow people to search for them. In their view, Ms. Sundermeyer reported, postdocs had to be included for the reasons Ms. Fillo stated. They could extend the system to include graduate students, but there was a cost consideration. This is a pilot, she reminded the Committee; if the University finds it of value, it can decide to expand the system to graduate students.

Could SciVal also be integrated with Google Scholar, Professor Sheets asked? It could not, Ms. McCready said. They are competitors, Ms. Sundermeyer added, and their proprietary interests probably preclude collaboration. What about Ebsco Host, Professor Sheets asked? That is similar to Scopus, Ms. McCready said, and repeated that they will look at other platforms. If they find one that can integrate Scopus, Ebsco, etc., that would be better. Professor Sheets suggested that any disclaimer could also note these alternative sources of information in order to reinforce the incompleteness of Scopus. Ms. Sundermeyer said that they would be glad to work with the Committee on the wording of a disclaimer.

Professor Hanna said that she works with freshmen; if a student wanted to find someone doing research on breast cancer, would that be easy to do with SciVal? Ms. McCready said it would; it is a low-barrier system. How often is it updated, Professor Hanna asked? Do faculty members have a chance to update it every three months or so? They can update it every day if they wish, Ms. McCready said, and Human Resources will update the system every quarter. Scopus updates the citation database weekly.

Professor Bornshtein asked how much the current “Experts@Minnesota” system was used, if SciVal is to replace it. And how is SciVal different from PubMed to search for (Professor Hanna's example) breast cancer research at Minnesota? Ms. Sundermeyer said that the current “Experts@Minnesota” system is part of EGMS and the backend will still be available, but the public facing data will not be. She reported that the backend is used quite a bit, with more concentrated use in some departments than others. Some never use it. It will be maintained, she said.

Professor Sheets thanked Ms. McCready and Sundermeyer for their report.

## **2. Gender-Equity Faculty Salary Study**

Professor Sheets turned to Professors Hayes and Ropers-Huilman for a report on the gender-equity study.

Professor Ropers-Huilman began by noting that she is a member of the Women's Faculty Cabinet (WFC) and that she and Professor Hayes bring different vantage points and disciplines to the results of the study. This year she also chaired the WFC subcommittee that looked at gender equity, something that Professor Hayes has worked on for about five years.

About two years ago, the WFC looked at salary equity across the campus; their study indicated there was reason to be concerned, Professor Ropers-Huilman said. They showed the study to then-Provost Sullivan, he agreed there could be problems, and asked for a third-party review. The University received the report with his fleshed-out recommendations from the consultant, Professor Murray Clayton at the University of Wisconsin-Madison, in December of 2011. In June of 2011, Professor Clayton concluded that the data suggested that overall there was a 2.2% salary inequity in favor of men, but he explicitly did not suggest an across-the-board salary increase for women faculty members because the problems varied by college. In one college, the discrepancy favored the women while in the others it did not. Provost Sullivan asked Professor Clayton for recommendations on how the University should deal with the issue; and the WFC has largely been pleased by the recommendations posited in the second (December, 2011) report from Professor Clayton. [A copy of which is appended to these minutes.]

The WFC prepared its own recommendations [also appended to these minutes]. They recommend appointment of SEACs [see the WFC recommendations at the end of these minutes] and also believe, along with Vice Provost Carney, that there should be an institutional layer, Professor Ropers-Huilman said. They have met with Vice Provost Carney, President Kaler, Provost Hanson, and now this Committee, and feel that there is a strong commitment at a number of layers in the administration to address the problems.

It is still possible to provide advice and recommend changes, Professor Hayes said, but the University can debate for a long time about the perfect process. They have been looking at this for 4-5 years and the University must choose some process and move ahead. One concern that has been expressed by members of the Faculty Consultative Committee is that if a department created salary inequities, and it must provide a big part of the cost of fixing it, that situation may create an incentive for department-based SEACs *not* to find inequities—so the existing biases might be repeated. For these reasons, the WFC has recommended that departmental SEACs include one faculty member from outside the department. This will provide a combination of the disciplinary expertise needed from inside with an

outside perspective. But some departments encompass such a broad variety of subdisciplines that one's own colleagues may not be expert in one's field.

Professor Kulacki said the study looked at starting salary, degree, range of salaries in a unit, time in rank, and so on, but this is a difficult problem because the judgment factor is strong.

There are so many things that distort salary schedules, Professor Beeman observed. Chairs tear their hair out every year because they have no funds to manage equity. They have people every year who say they have not been treated fairly, and he agrees with them and tells them to get an outside job offer—which, if they do and the University increases the person's salary in order to retain him/her—only distorts the salary schedule even more. Some faculty members have received offers and gotten raises but some, who are equally stellar, refuse to play that game, and they have fallen behind. He can do nothing about the situation. He said he wished there were an equity pool as well as a retention pool; perhaps some funding should be subtracted from the raise pool for that purpose before raises are delivered next year.

Professor Ropers-Huilman said that Provost Sullivan talked about that possibility before he left office. He said he believed the cost should be born both by central administration and by the college. An important part is to fix the problem, but then it should be left to the college to fix it if it arises again. If someone receives a salary offer from outside, that has implications for the entire department and can introduce an entirely new level of inequity. It is men who mostly seek outside offers; if the University is willing to provide a counter-offer, what are the implications for the department? And if it does not, it risks losing the person, Professor Beeman pointed out. If the person is really important to the department, it risks losing someone for a few thousand dollars in salary distortion.

Professor Konstan said that sometimes there is the flip decision. He mentioned a case in his department where a faculty retention case was used to make a case for significant equity raises for many faculty in the department—in this case, the cost of the retention factored in the cost of salary equity, which is a good thing. Everything depends on where the money comes from and how it is allocated. The process should spell out, for example, what percentage of the pay increase pool is dedicated to addressing historical inequity. Will each faculty member have a target pay rate, and collect from that percentage (plus regular merit pay) until they hit it? It is important to understand these details to get faculty buy-in. He said he applauded the report, however, and said it addressed a number of problems. He pointed out that the review processes would be very labor intensive and that the money for corrections needs to be lined up or the effort will be a waste of time. He offered a criticism of use of "years since degree" in 4(i). Someone is of value to a department not because of the years since they obtained their degree but because they are a Fellow in their field or have stature in the discipline—that is buried under the performance umbrella so it would be possible to have the wrong comparables. He also said it is not workable as a process to get to what is meaningful, and he urged the WFC to spell out what would work at the department level.

Professor Hayes said she had a number of responses. With respect to Professor Beeman's observations, there is a widespread perception that women seek and receive fewer outside offers, but a recent National Academy of Sciences report found that men and women receive outside offers in about equal numbers in six selected science and engineering fields. Some chairs may assume "she'll never seek an offer," but that is false in science and engineering. It may be equally false in the liberal arts, she surmised. With respect to Professor Konstan's point that the reviews are labor-intensive, that point was raised by author Lois Haignere in her book *Paychecks*. Haignere also felt that doing individual merit-

based adjustments is labor-intensive; and that it could be that it would be more expeditious to make a mass adjustment (which would not deal with all the problems but it would be quick, and it would be possible to do subsets of faculty). Hayes found it an interesting point that Professor Clayton did not recommend a combination of across-the-board and individual adjustments, as happened under the Rajender consent decree. However, there may be approaches through which individual adjustments can be made relatively expeditiously.

Professor Hanna recalled that she had been covered by the Rajender decree. It was simple at the case-by-base level but there was a pool of money to correct inequities. If there is no such pool of funds this time, the perception will be that the University is taking money away from "Peter" to pay "Susan." There needs to be a pool of funds to make the process acceptable to everyone.

Professor Hayes noted that this question had come up in a discussion at the Faculty Consultative Committee with Provost Hanson; the provost commented that it goes against the grain to reward bad behavior, and she's right about that, Professor Hayes concluded.

Professor Munson said that (1) all criticisms aside, this is something the University must do; the question is how; (2) the unit of analysis is too small if it is the department (and in his case there are two people, one man and one woman, who are clearly considerably underpaid when compared to their peers at peer institutions), so there should be pooling at the college level; (3) another possibility is that they get the results of the regression model that shows the effect that gender and other variables have on salary, and the administration could use this to remove the effect of gender on individual salaries while controlling for the other factors that are known to affect salary.

Professor Hayes said that it may be possible to ask Professor Clayton to send his regression analyses in order to find people who are "below the line" and correct their salaries; however, people deserving adjustments are not just those "below the line." There may be extraordinary performers with average salaries who deserve more. There are also reasons not to make adjustments, Professor Konstan said, because they are below the line for reasons not included in the model. The model does not include merit, Professor Hayes agreed. Which is a major factor in salary decisions, Professor Konstan pointed out. It would be possible to do an analysis based on merit if merit could be defined or articulated, Professor Hayes said. A department can't use arbitrary criteria for any position, Professor Beeman observed.

This Committee has gone on record, and the President apparently concurs, that part of the money in the salary pool should be across the board, Professor Kulacki said. A merit-only system, in his view, led to the kinds of problems identified in the report; without cost-of-living increases divergent salary patterns emerge—and then units have problems that are more expensive to fix. He agreed, however, that there is a cloud around how merit decisions are made.

Ms. Fillo said that controlling for merit when evaluating the extent of the discrimination is in effect controlling for the very thing one is trying to measure. The research shows that women receive lower evaluations than men even when they have the same levels of performance. So there is already discrimination going on in the things they are trying to use to evaluate whether discrimination has occurred. Additionally, the document mentions training for SEACs and department heads, but have they thought about providing women with training or tools to help them successfully navigating negotiations, outside offers, and so on?



Professor Ropers-Huilman said that it is not only or always that women who are doing the same work are evaluated differently. There is research showing that women are doing more teaching and/or service work, and if they are the ones who always take on the extra class or extra advisees, as the chair asks, they will pay a penalty if research and teaching/advising are not equally valued. In terms of helping women develop negotiating skills, she said she hoped the University would also help educational leaders learn how to be fair without being asked.

Professor Bornsztejn asked if the total population of women faculty was used. It was, Professor Hayes said, although the study did not include the health sciences, because the faculty there have a much more complicated salary structure. Since the report was completed, however, Ann Joseph, a professor in Medicine, has done a study on how to evaluate salaries in the health sciences.

Professor Bornsztejn also asked how much money would be required to cover the 2.2% difference identified in the study. Professor Konstan did a quick calculation and guessed that it would be between \$1.6 and \$2.0 million, which, he said, is not a lot of money in the scale of the University's budget.

Professor Marran said that department-by-department analyses would not take into account discipline-based inequities. And many arise from the point of initial hire, Professor Hayes added. If the starting salary is fair, one would expect the person to track with department increases, Professor Kulacki said. But one can do the analysis with 20 or 30 people in a department, not with 6 or 7. Professor Marran said it is a common practice in CLA to join particular departments or disciplines, and the salaries are based on the market value of that discipline. Economics and Psychology significantly affect the salaries in CLA, Professor Beeman said. Professor Hayes said that there are CIP (Classification of Instruction Program) codes that Professor Clayton used to account for disciplinary variations. What can be obtained from his data is where one would expect person X in discipline Y to be in salary, apart from merit.

Professor Hanna said that in the case of the Rajender consent decree, they had access to the individual regression analysis data for themselves. Professor Hayes said that the WFC have never had the actual data nor did Dr. Clayton; Dr. Goldfine in the Office of Planning and Analysis worked with Professor Clayton to produce the results. Should they? Gender is not a publicly-available variable. Professor Hanna commented that people should be able to obtain at least their own regression point to see where they stand relative to everyone else.

Professor Beeman said the effects of salary compressions are awful. In the five years he has been at the University, starting salaries of new assistant professors have increased by 20%. He said he did not know if that was a gender-based problem, but it is a serious issue for women and other faculty members hired 10-15 years ago whose salaries have been eclipsed. Professor Hayes said she did not know, either, the extent to which that is a gender-based problem. The current remedy to salary compression is to get a retention offer. One faculty member said the University of Minnesota should not be seen as a farm team in sponsored research and have its faculty members picked off.

Professor Konstan said that there should be an entirely separate discussion of salary compression, beyond issues of gender equity, especially with the provost. Professor Kulacki said that the market does not recognize that state institutions have been giving no salary increases, which combines with the gender-equity issue.

Professor Sheets thanked Professors Hayes and Ropers-Huilman for joining the meeting.

### **3. Faculty Appointment Data**

Professor Sheets asked Committee members to examine the appointment data that Dr. Goldfine (Office of Planning and Analysis) had provided earlier in response to Committee questions. Dr. Goldfine believes he addressed the issues raised when the data were last presented to the Committee; are there any additional questions? The Committee asked to have the Excel spreadsheets to look at before deciding on what next to do.

### **4. Statement on Faculty Productivity**

Professor Sheets turned now to the draft statement prepared by Professors Beeman and Konstan—and he thanked them for the work they did in drafting the statement. He recalled that the Committee had been asked by Professor Cramer, the chair of the Faculty Consultative Committee, to draft statement, and apart from the intrinsic merits of writing it down, it may be that the president and provost and others will find the statement useful. (Professor Beeman thanked Professor Konstan, who, he said, produced the narrative.)

The statement was not what either of them set out to write, Professor Konstan commented. They thought they had a mandate to draft a statement on what decision-makers should know. They had a lot of notes as a result of their discussions, but they did not envision their draft replacing the statement on faculty workload produced by the Faculty Workload Task Force in 1992 (<http://conservancy.umn.edu/bitstream/48661/1/Report%20of%20the%20Faculty%20Workload%20Task%20Force.pdf>). The question is whether the statement they drafted is a useful way to explain what faculty members do—in a way that has not been written down before.

Professor Beeman said that there is a study from the University of Delaware that tried to articulate faculty productivity in a statistical way, but it is a laundry list. What is more satisfying and more comprehensible is the philosophical basis for generating faculty activities.

The case is strengthened when the University has mechanisms to assess performance, Professor Sheets said. Professor Konstan agreed. The core message, he said, is that if one wants to measure faculty productivity, one must start with the mission of the institution, so they composed language that speaks to the research, teaching, and service missions of the University. The University as an entity works because it puts people across disciplines together to collaborate, but doing that requires resources. If it cannot do that, the efficiency of the institution is reduced. The greatest thing the University could do is open a faculty-postdoc cafeteria and allow people to eat there for no charge if they agree to sit down with other people they have not worked with.

Committee members discussed the language used in the draft, how the statement might be used, and how it might be revised or abstracted. The statement is not intended for use with public groups, Professor Konstan said, but if the Committee, the president, and the provost think the statement is heading in the right direction, Professor Sheets might ask people in University Relations to distill it.

One point that could be made, Professor Beeman said, is about the relationship of the University to the broader society in research: Basic research in the United States does not exist outside universities anymore; the labs and independent institutes are gone. Industry is not funding research. Closing Bell Labs was a huge loss to society. Higher education is the last bulwark of research but the public does not know that. Industry knows.

Professor Kulacki agreed and said that basic research in industry has declined dramatically in the past 10-15 years. He commented that the source of expenditures for basic research over the past decade has become heavily dependent on government funding. Industry has shifted its R&D spending away from basic research, i.e., discovery of new knowledge of the basic and process types, to applied work in support of business objectives. Based on NSF data, industry support for research in colleges and universities was approximately 5.6% of a total of \$55 billion. The US Statistical Abstracts for 2008 reported that industry accounted for approximately 67% of \$398 billion in total R&D expenditures, with approximately 83% allocated to development and applied research. He noted that current trends indicate the reliance of society in general on colleges and universities, particularly the research universities like Minnesota, for furthering discovery and the advance of fundamental knowledge.

The University is an altruistic venture, Professor Konstan commented, because much of what it does does not stay in the state—it advances knowledge.

Professor Sheets said the document is fine as a statement of the Committee's position and it can go to the Faculty Consultative Committee as the response to the question that was posed. The Committee voted unanimously in favor of the statement. Professor Sheets said he would bring it to the Faculty Consultative Committee. A copy of the final statement approved by the Committee is appended to these minutes.

Professor Sheets adjourned the meeting at 4:30.

-- Gary Engstrand

University of Minnesota

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### **Gender Equity in Salaries of Faculty at the University of Minnesota Recommendations**

Murray K. Clayton, Ph.D.  
Professor, Statistics  
Professor, Plant Pathology  
University of Wisconsin-Madison  
December 26, 2011

#### **Introduction**

In late 2010, Provost Tom Sullivan and Vice President Carol Carrier jointly sponsored the engagement of an external consultant to provide expertise and leadership in creating a credible salary analysis model to be applied to University of Minnesota tenure track and tenured faculty. A report issued in June 2011

summarized the main finding of the ensuing work, namely, that there is statistical evidence of a gap in salary between male and female faculty, and in particular, after taking into account various factors thought to influence faculty salary such as years of service and rank (but not merit), there is evidence that male faculty are paid an average of 2.2% more than female faculty. Additional analyses provide statistical evidence that this gap in salary is not evenly distributed across the schools/colleges nor is it evenly distributed across the faculty ranks.

A concern was raised in the June report that rank may be a “tainted” variable in the regressions used therein. Therefore, Provost Sullivan asked for a statistical analysis to determine whether rank at time of hire may be associated with gender. Based on further statistical analysis, an addendum to the June report was issued in December 2011 providing evidence that the assignment of rank at time of hire does favor male faculty. Specifically, there is statistical evidence that a newly hired female is more likely to be assigned a lower rank than a newly hired male. This pattern exists even after factors such as college/school and years since degree are taken into account.

The June report outlined three general recommendations: 1. Develop a system for adjusting the salaries of female faculty as warranted, on a case-by-case basis. 2. Work to identify the causes of salary inequities, and develop policies to prevent their recurrence. 3. Routinely monitor faculty salaries at the institutional level. Provost Sullivan asked that these general recommendations be developed further so that the study could move into a Phase Two remedy stage. This document expands upon the recommendations provided in the June report and provides a list of specific items for action. First I recommend actions to address existing gaps in salary between male and female faculty, and I then outline future actions regarding the collection and monitoring of data related to salaries, assignment of rank, and other aspects of the professorial job. The primary rationale for these recommendations can be found in the June report; the findings of the December addendum serve as a further basis for these recommendations. Additional details relevant to the recommendations follow in this document.

Almost 20 years ago, the University of Wisconsin-Madison underwent a parallel series of activities. A report in 1992 provided evidence of a gap in salary between male and female faculty and in 1993 an exercise was implemented to address this gap. Later in 1993 a "follow-up" committee was charged with assessing the impact of the exercise. This included both statistical analyses of salaries post-exercise and a survey of faculty to assess the impact of the exercise, to look at potential causes of the original gap, and to solicit recommendations for the future.

The recommendations in this report are informed and influenced by the findings of the UW-Madison follow-up study. UW-Madison and the University of Minnesota are similar institutions in terms of size, mission, and stature, and the general findings of the UW efforts are relevant to future action by the University of Minnesota. In addition, the exercise at UW-Madison was successful in many ways. Beyond reducing or eliminating the statistical gender gap in salaries, survey results indicated a high level of faculty satisfaction with the exercise.

### **The Present: Recommendations for Addressing Existing Gender Gaps in Salary**

As noted in the June report, an across-the-board salary adjustment, whereby each female faculty member receives a salary adjustment of 2.2% is *not* recommended. Not least, with an across-the-board adjustment, some female faculty with low salaries will still have low salaries, while some others who do not merit an adjustment will receive one. The regression analyses used in the June report provide evidence of an

overall gender gap in faculty salary, and while those analyses are useful for understanding broad trends, absent quantitative merit data, those methods cannot assess whether a gap in salary exists for any given individual. Indeed, even in a school or college where there is an *average* estimated gap favoring women, it could still be the case that there exists a female faculty member whose salary is too low. Likewise, in a college where there is an average estimated gap favoring male faculty, there might still be some female faculty whose salaries are too high relative to their merit. Given these factors, an appropriate approach for adjusting salary is on a case-by-case basis.

#### Case-by-case salary assessments

I recommend implementing a process similar to that used in the 1993 UW-Madison exercise, and that it be used in all colleges and schools, including units in the Academic Health Center.(1)

1. For large departments, create Gender Equity Pay Adjustment Committees (GEPACs) to determine, on a case-by-case basis, the size of the adjustment appropriate for each eligible woman faculty member.(2) This committee should be composed of an uneven number, not less than three, of tenured faculty members in the department. In the case of three-person committees, two of the members should be selected by the chair of the department in consultation with the senior (i.e., tenured) faculty or appropriate standing committee in the department. The other member(s) of the committee, one in the case of three-person committees, should be selected by the women in the department by an election. It will be the function of these GEPAC committees to recommend the pay adjustment for each woman in the department. Women should be represented on the GEPAC committees insofar as possible, given the makeup of the department. Of course, a female committee member will not participate in discussions of her own salary adjustment. In the case of small departments, a single GEPAC can be formed for each group of two or three departments with similar mission and activities. The grouping should be by mutual agreement of the relevant department heads, the appropriate dean(s), and the Provost.

(1) Given the statistical evidence of a gender gap in salary for many of the schools and colleges at the University of Minnesota, and given the evidence that the gaps might be different for different schools and colleges, it is reasonable to investigate whether there are salary inequities in AHC units, even though the statistical analyses in the June report excluded AHC faculty.

(2) "Eligible," in this context, means regular faculty, for example, not holding administrative appointments.

2. Each college/school should also appoint a college GEPAC whose function will be to review the recommendations of the departmental committees as described below. The college GEPACs should be made up of five tenured faculty members from the college and should include at least two women. Three members of these committees should be appointed by the dean of the college/school. The remaining two members should be appointed jointly by the Women's Faculty Cabinet, the Faculty Consultative Committee, and the Provost.

3. For each school or college that is not departmentalized (e.g., Law), a single GEPAC should be formed with functions analogous to the departmental GEPACs. For all such colleges and schools, the function of a college GEPAC will be performed by a GEPAC appointed jointly by the Women's Faculty Cabinet, the Faculty Consultative Committee and the Provost.

4. The departmental GEPACs are to make a recommendation for each female faculty member by examining her record and those of three male faculty deemed by the GEPAC to be comparable or nearly comparable. As a starting point, each departmental GEPAC should be provided (by the Office of Institutional Research) with a table listing, for each faculty member, date of degree, date of hire, and current salary. Comparables should be chosen on the basis of (in order of importance):

- i. years since degree; years of work experience relevant to the position; years of service at the University of Minnesota;
- ii. responsibilities of the position, nature of work performed (e.g., laboratory research in contrast to extension/outreach, basic research vs. clinical translational research, etc.);
- iii. rank;
- iv. affiliation with a particular department, program, center, office, etc.

5. Comparables should be chosen from within the department, unless the male faculty members in the department are so unlike the female faculty with respect to the listed variables that valid judgments cannot be made. Comparables chosen from outside the department should be chosen from units that do similar work and that have similar market value.

6. Gender equity adjustments should be made taking into account justifiable differences in pay based on degrees attained, years since terminal degree, years of experience, rank, differences in responsibilities, differences in market (3), and differences in performance. The latter should be based on cumulative career merit, and on qualitative and/or quantitative assessments of performance in teaching, research, outreach, and service as appropriate to the departmental missions and/or the individual's job description.

(3) For example, within the same department some faculty might be involved in applied research and therefore compete in a different market than those doing basic research. This issue is already partially addressed in item 5, whereby comparables chosen outside a department should come from units with similar market value.

7. Once the departmental GEPACs have determined their recommended adjustments for each woman, their recommendations and justifications for those recommendations should be forwarded to the college/school GEPAC. Each female faculty member should receive a copy of the department's recommendation for her as well as a copy of the justification. In addition, each female faculty member should be told that she can make a counterproposal to the recommendation and send it with a written justification directly to her college GEPAC. Her counterproposal should be framed in terms of the criteria outlined in item 6 above.

8. The college GEPACs should review the recommendations of the department GEPACs. They should also review individual women's counterproposals to departmental recommendations. The college GEPACs will either affirm the departmental GEPACs' recommendations or make a different recommendation. When a college GEPAC departs from a departmental GEPAC recommendation, it should write a justification for the differing recommendation, again based on a comparison of the female with males of comparable years of experience and merit. Both the departmental and the college GEPACs' recommendations will then be forwarded to the deans of the colleges for appropriate action. Women who are dissatisfied with the action taken on their particular cases may appeal through normal University procedures.

9. The above processes should be conducted outside of the usual annual salary adjustment exercise for merit. GEPACs should not make recommendations that rely on a future merit exercise, and departments should not reduce subsequent merit adjustments in response to a GEPAC recommendation for an increase.

### **The Future: Recommendations for Data Collection and Monitoring Equity**

The goal of the proposed exercise outlined in the previous section is to address existing gaps in salary between male and female faculty members. This addresses the first of the three recommendations in the June report. Here I propose actions to address the two remaining recommendations of the June report: (1) work to identify the causes of salary inequities, and develop policies to prevent their recurrence; and (2) routinely monitor faculty salaries at the institutional level.

In the literature a number of factors have been identified as potential causes of gender gaps in faculty salary. These include:

- salary at time of hire;
- recognition for each of research accomplishments, teaching performance, outreach and/or extension performance, service duties;
- startup package at time of hire;
- assignment of each of teaching duties, service duties, outreach/extension duties;
- retention efforts by department;
- rank at time of hire and timing of promotions;
- access to research facilities and funding;
- access to departmental support facilities;
- access to clinical practice plan (in units with clinical activities);
- being a spousal or internal hire;
- being unwilling/unable to seek outside offers to enhance salary.

Some of these factors are more easily quantified and monitored at a campus level than others; administrators from department leaders on up should be cognizant of these factors (and others) that can impact salary. Here I suggest monitoring a number of factors related to the above that are easily collected and monitored. That said, such monitoring might require changes in current data collection practices if various information is not now being collected.

At the end of each academic year, for the university as a whole, and again for each college/school separately, collect data on:

- average starting salary for male faculty and for female faculty;
- average starting salary for male faculty and for female faculty, by rank;
- numbers of male faculty and female faculty hired into each of the assistant, associate, and full professor ranks;
- dollar value of "start-up" packages for male faculty and for female faculty;
- average percentage raise for male faculty and for female faculty;
- for each retention sought, either by the faculty member or the department: the gender of the faculty member; the value of any salary increment, other support dollars, other conditions (provision of staff, laboratory space, etc.) in a University of Minnesota counter-offer; whether or not the retention bid was successful;

- for male faculty and female faculty promoted in the academic year, the average number of years to promotion (subtracting out, as appropriate, approved tenure-clock extensions, leaves of absence, etc.).

Noting the sensitivity of these personnel data, their collection and review should be conducted with care. Deans will be natural sources of much of the data, although some can be collected automatically through payroll processes. I recommend that, at the campus level, reviews of these data be conducted by the Provost's office, with feedback to deans and department chairs/heads as needed.

Because the above data have not generally been collected on the campus, it would be valuable to collect retrospective data, ideally from the last five years. For example, it would be valuable to have average starting salary information for each of the academic years 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010. Data on some of the other factors listed above (e.g., the dollar value of start-up packages) may be more difficult to obtain, but clearly the more complete the record, the better the dynamics of the salary/support structure can be understood.

In general, discrepancies in the above data between male and female faculty serve as sentinels of potential sources of a gender gap in salary. As noted in the June report's discussion of salary patterns, "... it could be that a sizeable average gap in salary exists between male and female faculty, but upon examining merit information, it is clear in that instance that the gap is justified.... [I]f upon examination a gap is allowed to stand, then the reasons for doing so must be well articulated and supportable." The same applies for the other factors outlined above – if the average starting salaries, for example, for male and female faculty are substantially different, then this difference must be justified.<sup>(4)</sup> The December addendum already indicates an association between initial rank and gender. This and future monitoring of rank data will help the University ensure that rank is appropriately assigned.

(4) At the University of Wisconsin-Madison it has been argued that it is not a candidate's responsibility to negotiate for an equitable starting salary and start-up package in an adversarial manner. Rather, it is the responsibility of the department chair and dean to ensure that starting conditions are equitable.

Finally, I recommend that the more comprehensive statistical analysis summarized in the June report be repeated, if not annually, then every two or three years.

### **Additional Comments and Recommendations**

The above recommendations deal with the average gap in salary between male and female faculty discussed in the June report, and include recommendations to address the existing gap, and recommendations for data monitoring to better understand the causes of the gap and how to prevent its recurrence. It may be instructive to describe what happened after similar recommendations were followed at the University of Wisconsin-Madison.

First, as noted on page 1 of this report, there was a high degree of acceptance of the exercise conducted at UW-Madison: of survey respondents, more than 60% of male faculty and more than 70% of female faculty were satisfied overall with the exercise. Perhaps the most common concern was with regard to the dissemination of information before, during, and after the exercise. Therefore, it is strongly recommended that adequate information be distributed to all faculty regarding the implementation of an exercise such as that outlined above. An additional concern was that faculty did not know, in general, how salaries were



set in their department. When not already in place, departments can benefit from having systematic, written processes describing the salary/merit process in the department.

Again, the current document outlines recommendations for addressing a gender gap in salaries. It may be that other salary inequities exist. At UW-Madison, policy now exists directing periodic review "to assess whether individuals are appropriately and equitably paid in comparison with peers at UW-Madison." (5) These reviews can occur at any time, but especially at times of promotion and at each five-year post-tenure review. The form of such a review at UW-Madison was adapted from the initial 1993 GEPAC exercise. (6)

(5) <http://www.provost.wisc.edu/facsal.htm>

(6) <http://www.provost.wisc.edu/salaryequitypolicy.htm>

Not so long ago, universities did not pay much attention to matters of equity and diversity. The existence of an Office for Equity and Diversity at the University of Minnesota underlines the institutional recognition of the importance of these matters and how they can positively benefit the University. The recommendations made in this report are offered in the spirit of helping the University of Minnesota achieve greater and long-lasting equity for faculty.

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**Recommendations Regarding Salary Equity at the University of Minnesota  
Women's Faculty Cabinet and University Senate Equity Access and Diversity Committee  
Draft as of March 21, 2012**

The Women's Faculty Cabinet (WFC) is a body of faculty women with an investment in an equitable and supportive culture for women faculty across all academic units at the University of Minnesota; the WFC acts as an advisory board to the Provost. The University Senate Equity, Access, and Diversity (EAD) Committee includes faculty, staff, and students who advise the President and administrative offices on the impact of University policies, programs and services on equal opportunity, affirmative action and diversity from a system perspective.

In response to recent reports related to salary equity (conducted by the WFC and external consultant Dr. Murray Clayton), the WFC and Senate EAD offer the following recommendations for instituting a process for possible salary adjustments, providing training to department chairs/heads and Deans, and continuing to monitor salary equity by gender. These recommendations primarily represent an **endorsement** of the suggestions laid out by Dr. Clayton in his December 26, 2011 report as well as **additions** regarding sharing information, providing training to department chairs/heads, and clarification that there would be an initial round of reviews of faculty women's salaries as well as an ongoing process for case-by-case salary assessments open to all faculty.

Part 1. Case-by-case salary assessments: Initial round of reviews

1. Create departmental Salary Equity Adjustment Committees (SEACs) to determine the size of the appropriate adjustment **for each female faculty member**.<sup>1</sup> Departmental SEACs will be formed within large departments and by combining the task for 2-3 smaller departments. The SEAC should involve an uneven number of members, not less than three, and include tenured faculty members in the department(s) and one person from outside the department, normally a faculty member who is serving or recently served on the college/school SEAC.
2. Create college/school SEACs to review the recommendations of departmental SEACs. These committees should include 5 tenured members, at least 2 women, with input on membership from the Dean, WFC, FCC, and Provost's Office.
3. For units that are not departmentalized (e.g. Law), a single SEAC should be formed to determine appropriate adjustments. Members will be appointed in the same way as college/school SEACs.
4. Units within the health sciences should participate in the SEAC process, with appropriate customization of procedures.
5. Colleges and departments should consult with the Office for Equity and Diversity, the Provost's Office, and the Office of Human Resources regarding the establishment of SEACs, the determination of procedures, and process adjustments.
6. Departmental SEACs are to make a recommendation for each eligible female faculty member by examining that person's record and those of three other faculty deemed to be comparable or nearly comparable. (See Clayton 12/26/11 report, page 3, for more detail on the comparison process).
7. Once departmental SEACs have determined any recommended adjustments, their recommendations and justifications should be forwarded to the college/school SEAC. Each faculty member reviewed should receive a copy of recommendations and justifications for her case. In addition, each faculty member reviewed should be told that she can make a counterproposal to the college/school SEAC.
8. College/school SEACs should review departmental recommendations and any counterproposals. College/school SEACs will affirm departmental recommendations or make a different recommendation, providing a justification based on the same comparison criteria.
9. Deans will receive departmental and college/school SEAC recommendations and take appropriate action. Faculty who were reviewed, but are dissatisfied with the action taken on their cases may appeal through normal University procedures.
10. The above processes should be conducted outside of usual annual salary adjustment reviews for merit.

#### Part 2. Case-by-case salary assessments: Requested reviews

1. After the initial round of reviews, **any member of the faculty** may request a salary equity review from their departmental SEAC or from their college/school SEAC. Procedures for the review, justification, counterproposal, college/school SEAC recommendation to the Dean, and appeal will parallel those of the initial reviews of women faculty.
2. Chairs/heads and Deans should identify faculty whose salaries seem to be outliers in light of their performance and productivity and request an equity review on their behalf.

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<sup>1</sup> Transgender faculty who do not identify as female (including faculty who do not identify as male or female) are welcome to request a salary equity review as described in part 2.

Part 3. Data collection, monitoring, training, and communications

1. Review current data to determine which factors identified in Clayton 12/26/11 report are currently available in institutional records, whether retrospective data is available, and which factors might be incorporated into systems in the near future.
2. Prepare an annual report for the Twin Cities campus as a whole and also for each college/school separately that compares the following by gender:
  - average starting salary;
  - average starting salary at each rank;
  - number of faculty hired into each rank;
  - dollar value of “start-up” packages;
  - average percentage raise;
  - for faculty promoted in that year, average number of years to tenure and promotion and average number of years between promotion to Associate and promotion to Full Professor;
  - for each retention sought, the gender of the faculty member, the value of any salary increment, other support dollars, other conditions (e.g. provision of staff, lab space, etc.) in a University of Minnesota counter-offer and whether or not the retention bid was successful.
3. Provide these reports to the Provost’s Office and to the relevant college/school SEAC, with feedback provided to Deans and department chairs/heads as needed.
4. Conduct a more comprehensive statistical analysis (similar to that conducted by Dr. Clayton in 2011) every 3 years.
5. Create a University website that serves as a repository of reports related to salary equity.
6. Incorporate additional training related to salary equity into the existing leadership development provided to chairs/heads and provide similar training and support to members of SEACs.
7. Departments should describe their normal merit review process and salary decisions in explicit terms and share that information with faculty, the Dean, and the college/school SEAC in order to increase transparency and minimize inequities.
8. Evaluate the sufficiency of the salary equity review processes, from the perspective of the Provost’s Office, Office for Equity and Diversity, Deans, and faculty, after two years.
9. Share salary equity review processes and reports with the coordinate campuses.

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**Thoughts on Research University Faculty:  
Mission, Productivity, and Assessing Effectiveness**

***Research University Faculty: Mission and Role***

Any discussion of assessment or productivity of a class of employees must begin with a thoughtful review of the role of those employees. The role of faculty at research universities directly reflects the mission of the university, and for these purposes we break it into four elements:

**1. Advancing and fostering the arts and humanities, science and engineering, and other fields of scholarship**

It is important to recognize that both private and public universities invest in what is essentially an altruistic, collective goal—advancing scholarship. When a new work of art is created, when a new understanding of basic physics is advanced, when a new light is cast on the moral choices involved in decisions about business relocation, or when new scholarship extends our knowledge of the past, near or far—in all these cases, when new knowledge is generated that knowledge benefits society as a whole, not just the University that paid the faculty member who made the advance. Social scientists have a model for such endeavors—generalized reciprocity.

It is also important to understand that the core mechanisms that allow effective and efficient scholarship are ones that primarily reside outside individual universities. Without coordination among researchers in each discipline at different institutions there would be chaos. Dozens or hundreds of scholars would pursue essentially the same work while other areas would go unexplored. But such chaos is rare. Two mechanisms provide the coordination needed for fields to advance with reasonable efficiency. First, peer review functions to ensure both the fundamental quality of scholarship and to moderate cases where too many scholars pursue the same directions. In most fields, peer review of research proposals is common—funding agencies bring together experts to select the proposals with the most promise, and to ensure a broad coverage of promising research directions. And in all fields of academic scholarship, peer review of completed work ensures that credit accrues to those who have made high-quality, original contributions, whether that review occurs at the level of the art jury, the scholarly press, or the journal editor. Second, scholarly dissemination provides mechanisms through which scholars across the country and around the world maintain awareness of each other's work, allowing them to coordinate informally and to select their own directions in a manner mindful of the directions of others. Such dissemination comes in many forms—journal articles, books, conference presentations, juried shows, and more. These two mechanisms—peer review and scholarly dissemination—are key to the overall efficiency and effectiveness of the scholarly enterprise.

One of the major roles of research universities, still linked to fostering scholarship, is to create environments where scholars can benefit from interdisciplinary synergy. In all areas of scholarship, many of the most important advances come when scholars encounter challenges, techniques, or ideas from other fields. And much of the most interesting scholarship comes when faculty collaborate across traditional disciplinary lines, whether that involves engineers and doctors working on medical devices, historians and material scientists discovering new ways to unlock old artifacts, or marketing faculty and psychologists reaching a new understanding of human behavior. We note (with appreciation) that often it is graduate students who pollinate such interdisciplinary relationships and help collaborative research bloom.

## **2. Educating and training future thought leaders, scholars, and advanced practitioners**

Education is a top priority for all institutions of higher learning, but research universities have a special mission that significantly expands the role of faculty beyond instruction in the classroom. To accomplish its mission, a research university must aim higher than simply teaching students what could otherwise be learned from textbooks. It must expose students to the cutting edge of knowledge and teach them how to participate in advancing knowledge themselves—and how to work in an environment where knowledge is continually being advanced by others. The obvious example here is graduate education—particularly with terminal degrees such as the Ph.D. or M.F.A., where mentoring students through their own original scholarship or artistic production is

a key faculty role. However, the mission and role extend throughout professional and undergraduate degrees as well. From first-year seminars through undergraduate research projects through professional degree preparation, that which distinguishes the research university from other educational institutions is the set of advanced opportunities to learn about and collaborate in the creation of new knowledge and ways of knowing.

One of the basic challenges of research university education is that it is fundamentally more expensive than other institutions of higher education. Not only are the most distinguished scholars in heavy demand, and therefore command higher salaries, but the forms of education that bring students close to cutting-edge scholarship often are not readily scalable. While technology can expand a lecture course from hundreds to thousands of students, it does not replace the need for hands-on instruction in the laboratory or studio. Moreover, no technological solution can suddenly lead to each faculty member effectively mentoring scores of students through research experiences or graduate degrees. It is for this reason that research universities should not aspire to serve every need—but they should be accessible to those students with the ability and ambition to become leaders in their chosen fields of endeavor.

A research university's educational mission is closely linked to its mission of scholarship. For more than 60 years, the American model of focusing most basic research within Universities—and in turn of carrying out such research hand-in-hand with training tomorrow's leaders—has been a tremendous success, increasingly emulated around the world. Separation of the two roles—scholar and educator—is impossible. Despite regular pressure to account for time spent “on teaching” or “on research,” in fact much time is spent on the overlap between the two. Designing an experiment with one's graduate students and undergraduates is research *and* teaching. And keeping up on the latest advances in the field is an investment that pays dividends in a faculty member's scholarship, in professional advising of students, in their development of new curriculum, and in their classroom instruction.

### **3. Engaging with the public, with industry, with government, and with others**

Research universities exist to improve the world—in big ways and in small ones. Public research universities, in particular, are vehicles for amassing a collection of faculty experts who have a collective obligation to engage with society. The nature of this engagement differs from field to field and from individual to individual. Agricultural science, for example, has a long tradition of extension service to farmers. Medicine and other health sciences provide direct service to patients, and in turn have a collection of patients without whom training new medical professionals and carrying out clinical research would be impossible. Law faculty and students set up clinics; business faculty and students carry out engaged learning activities that directly serve small business or non-profits. Some faculty members have the expertise and interest to engage in key policy issues—from electronic voting machines to bioethics. Some bring their creations to the public in performances and installations. And some consult with companies and non-profits to apply their skills to support economic development.

### **4. Governing the university to guide it towards achieving its goals of advancing and disseminating knowledge**

Research universities also differ from traditional businesses in how they are led—universities have a strong tradition of separating governance from management. Faculty take a leading role in governance—in setting the scholarly and educational policies of the institution, in developing and reviewing all matters of curriculum, in peer-review of each other’s work, and in other matters of academic concern. This is separate from the management authority vested in an administration which must deal with the business decisions and policies. It is not surprising that most senior administrators are also faculty, nor that these two areas have significant overlap. Decisions on increasing enrollment, for instance, raise issues of the impact on quality of education (an area of significant faculty concern) as well as financial and budget issues. The shared governance model is one that may appear from the outside to be inefficient (and indeed, in the absence of trust and well-established mechanisms, it can become that way), but it is also a proven mechanism for ensuring high-quality decision-making on matters of academic concern. Faculty participation in these processes is extensive—faculty are involved in every matter from hiring to student admissions to selection of research proposals for internal funding to the awarding of scholarships to reviewing proposals for courses and degree programs and much more. Such governance occurs at all levels within the university (department, college, campus, and university-wide), and typically constitutes between 10% and 20% of the collective faculty workload.

### ***Evaluation, Productivity, and Quality***

Research universities, like other institutions, are under increasing pressure to demonstrate that they are productive and efficient. Guided by the metrics of industrialization, some policy-makers have called for simplistic measures of productivity and efficiency such as cost per student-credit-hour or amount of external funding obtained per faculty salary-dollar. Such measures are not only misdirected but, if implemented, actually harmful to the mission of research universities. For example, privileging the cost per student over quality measures would logically incentivize making all classes as large as possible--irrespective of curricular content and level, irrespective of optimal instructional method, irrespective of necessary student preparation, irrespective of the learner outcomes actually achieved by students, etc.

#### **1. It all starts with quality.**

Scholarship and the education of future leaders are domains where quality trumps any other measure of production. Primarily quantitative measures—even measures that factor in peer review—are unlikely to distinguish between competent performance and excellence. When considering research, many ideas are good enough to make small advances and receive the basic markings of success (e.g., peer-reviewed publication), but many fewer are truly transformative. Sometimes it takes years or decades for those transformative ideas to make it into the mainstream and show the traditional success indicators. This is why we must, and do, depend upon the in-depth assessment of experts in the discipline of the faculty member. The same approach is used to evaluate full programs (external review by experts). There is a broad set of ways to measure quality of education, but most of them involve a substantial time-lag. It is possible to measure the success of graduates in their chosen field (perhaps normalized by their credentials at time of admission). But it is important not to discount the qualitative assessments that can often be carried out only one-by-one. Did a faculty member inspire a student to persevere, leading her to a level of achievement she didn’t think was possible? Did a faculty member’s mentorship lead a student on path towards a successful career? All of these things are issues of quality, not throughput.

## **2. A successful research university requires a balance of different faculty**

Some faculty members are focused experts in their discipline who collaborate little and are little engaged with public matters. Other faculty members excel at collaboration and at bringing together people with specialized expertise to help solve challenges that transcend any individual's expertise. Others are particularly good at engaging with the public to understand public needs and frame research questions, or to translate research into a form that can be applied. Some faculty members excel in many of these areas at once. One-size-fits-all is neither attainable nor desirable. And this need for diverse skills exists at all levels of the university; even within individual departments or programs.

## **3. In scholarship, efficiency comes from coordination, quality, and collaboration**

Any measure of faculty efficiency must consider the degree to which faculty members and their work are well-integrated within their field. Faculty members must become aware of the work of others; must make others aware of their own work through publication, collaboration and public presentation; and must participate in the processes of peer-review. All of this requires both time and energy. Otherwise, their work is inefficiently produced, since it has limited impact. If we desire to measure the quality of scholarly work produced in terms of its impact on the field and/or on the world, and the degree to which the work makes successful use of the resources and talents available from students to colleagues to laboratories, our measures must also capture the essence of the work required to disseminate scholarly work and integrate it with advances in knowledge in a given field. Failing to place value on these activities that contribute to real efficiency in scholarship would lead to unwise policies, such as ceasing to support participation in peer-review processes (which requires substantial time) or saving money and time by not supporting participation in professional meetings.

## **4. Scholarship is a hard output to measure**

Too many current efforts to assess productivity are wrong-headed. Consider the common statistical measure of "sponsored research funding per faculty member (or per faculty salary dollar)." This measure has three fundamental problems. First, it neglects the benefits of forms of scholarship that generally do not obtain sponsored funding. Scholarship in philosophy, foreign languages, history, and business are all valuable, yet rarely obtain funding through these mechanisms. Second, it tends to reward research that involves extensive lab work, staffing, and apparatus over equally meritorious research that is less expensive. A computer scientist building a supercomputer laboratory to perform fluid-flow computations would appear very productive. A computer scientist working more cheaply on the theoretical techniques needed to simplify those computations so they could run on a common PC would seem unproductive—simply because it costs less. Both may be doing equally valuable work. Third, it confuses inputs and outputs. Consider the exact same clinical research study performed at two different institutions. If performed by a faculty member at the University of Minnesota, the study might cost \$500,000. At a higher-overhead, higher-salary university (e.g., Stanford), the study might cost \$900,000. By any economist's analysis, the U of M is more productive. But measuring sponsored research *funding* would give the edge to Stanford. Any measure that fails this basic sanity test is not only wrong, but counter-productive.

### **5. A foolish efficiency may undermine the effectiveness of the organization as a whole**

Scholarship is a creative endeavor. Too often, business processes introduced in the name of efficiency and accountability simply undermine actual effectiveness and productivity. Specifically, universities need to encourage and support both the serendipitous interaction among colleagues that leads to new ideas and the bold research agendas that sometimes fail, but are far preferable to timid agendas that always succeed without much impact. Some of this is simple: faculty and students need space to interact, even at a time when the cost of space is a serious concern. In too many academic units conference space needs to be scheduled well in advance, hurting the ability for serendipitous or timely interactions. Some of this desired interaction depends on continued and, where possible, increased funding for promising initiatives and needed infrastructure. Some of it involves maintaining at least a minimum funding level to support professional engagement—every faculty member should participate regularly in professional collaborative interaction. And some of it involves reducing the increasing drain on faculty time that compliance, regulations, and other business practices require. This last case can be thought of as a balancing of risk and trust, or more pragmatically of calibrating the amount of staff support provides to match the regulatory and administrative burdens of accountability.

### **6. Faculty tenure also has a role in promoting faculty efficiency.**

Faculty who have earned tenure are encouraged to take on bold research challenges--challenges that include a risk of failure--and in turn are assured that even in the event of such failure their jobs are secure. Without such protections, it would be too easy for faculty to aim low and succeed at small tasks, but never take the risks that result in major breakthroughs. (Of course, faculty tenure has other roles, including protecting free inquiry from political pressure and helping universities recruit faculty in high-demand areas such as science and engineering at salaries below those of the private sector.)

### ***A Final Thought: The Research University is not Broken***

America's research universities are the envy of the world, and they are the core of the engine of America's economic development through their research, teaching, and engagement. While tuition costs are indeed substantial, at public universities these cost increases are due more to decreasing public funding than to diminishment in efficiency. The system of education and research generally works well, and we must ensure that attempts to improve it further are remain grounded in an understanding of the system, and what it is that one is seeking to improve.

What then are the measures that are regularly employed to assess faculty productivity at the University of Minnesota? Every regular faculty member at the University is annually reviewed by her or his department peers according to published criteria of productivity in the three areas of (1) "Teaching and Advising," (2) "Research and Publication" (or artistic production, where that is the more suitable criterion), and (3) "Service" to the institution, the profession, and the public. These criteria are specifically enumerated in a statement, informally known as the "7.12 Statement," that every department in the University is required to have and adhere to under the terms of the University regulations concerning faculty tenure. Every 7.12 Statement is subject to periodic review and revision at the department, college, and university levels, and must be approved by the Provost of the University. The



purpose of each 7.12 Statement is two-fold: (1) to define with specificity the "indices and standards" of performance and achievement required for tenure and for promotion through that academic unit; and (2) to define with specificity the performance standards that must be met throughout a faculty member's career even after tenure and or promotion. Each department is expected to utilize the criteria of its 7.12 Statement in every annual post-tenure review of its faculty. The same 7.12 criteria are also substantially reflected in the annual merit assessments that precede any merit raise for individual faculty members. While each department's 7.12 statement may vary in details from those of other departments, all must conform to the high expectations of sustained achievement in the three areas of professional activity referred to above. As a guide to the reader of this document, samples of two current 7.12 statements have been included as an appendix.

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