

Reforming Advancement  
Processes through  
University Professions

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# RAMP-UP Rensselaer's NSF-funded Project for Institutional Transformation

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**Annual Report 2009**  
Rensselaer Polytechnic Institute

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## Highlights

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# Accomplishments

Highlights of RAMP-Ups' third year started in September with our launching of the new T.E.A.S. series, "Towards Excellence in Academia Seminars." Over the course of the year, we hosted 6 sessions on areas of particular importance for promotion and advancement. The sessions included:

- Welcome and Introductions
- Self Promotion – A Key to Advancement
- Effective Teaching on a Shoestring
- Perspectives from President Shirley Ann Jackson: Managing for Success
- Creativity and Productivity in Research
- Collaboration and Interdisciplinary Research

In general, the seminars were very well rated by participants, with the exception of the teaching seminar.

We also sponsored a major two-day workshop on Negotiation and Mentoring, facilitated by COACH consultants Jane Tucker and Barbara Butterfield. The first morning session on negotiation engaged the participants in interactive exercises and greatly increased their understanding of the dynamics of negotiation. Several women commented that this was the best workshop they had ever attended.

At lunch, we presented awards to outstanding mentors on campus, including the new Top Mentor Award, which was given to Angel Garcia. The afternoon session worked with faculty to help them to become better mentors and to make better use of mentoring opportunities. On the second day of the workshop, Tucker and Butterfield met with the Institute leadership team consisting of Deans, Associate Deans, Department Heads, and the Provost to work out implementation strategies for best practices in mentoring.

This year we continued our highly successful Career Campaign Awards. These are grants of \$5000 to individual women faculty to enable them to advance their careers. Typically grants enable travel to give invited lectures, meet with funding agencies or external mentors or to develop remote collaborations. Each grant requires that a strong internal mentor participate in the career campaign. One of our first round recipients, Ingrid Wilke, was tenured this year. In the first two years of the grant, 11 women received awards. This year they were joined by 6 new recipients.



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The Faculty Coach initiative was expanded this year to include the School of Humanities, Arts, and Social Sciences. The role was funded by the Dean of the School rather than by our grant and is expected to continue beyond the termination of the grant. Our inaugural coach is Caren Canier, a veteran from the Arts department. In the School of Engineering, Prof. Keith Nelson retired and was replaced by Prof. Linda Schadler. Schadler is a highly successful researcher, a former chair of the Institute Promotion and Tenure Committee and a strong advocate for women faculty. Prof. Mark Holmes continues as the Coach in the School of Science.

This year, our PI, Cheryl Geisler, accepted a position as Dean of Communication, Art and Technology at Simon Fraser University in Vancouver Canada, and left Rensselaer as of July 23, 2009. Deborah Kaminski, professor of Mechanical Engineering, has stepped up as PI from her former role as co-PI. The administration of the grant was moved from the School of Humanities, Arts, and Social Sciences to the School of Engineering. We have a large new office in an excellent location in the Engineering building and are well positioned to begin the work of the new year.

In the research arena, we greatly expanded our cohort analysis on promotion patterns for faculty in Science and Engineering. Our database spans 20 years and includes more than 2,300 faculty at 12 universities. Six of these institutions have been recipients of Advance grants. The final data will be collected in Oct. 2009, and then the analysis and dissemination of findings will be conducted.



## Highlights

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# Areas for Attention

The greatest impediment to progress that we face is the continuing faculty governance vacuum at Rensselaer. The Board of Trustees disbanded the Faculty Senate two years ago over a dispute on the definition of faculty – more specifically whether clinical faculty could participate in the governance process. Since then, we are operating without a strong process for altering institute policies related to faculty.

Early in the year, RAMP-UP identified two serious issues for assistant professors: extended delays in implementing their start-up packages, and poorly defined third-year reviews that are knocking some able faculty off the tenure track prematurely. Both the PIs and the Faculty Coaches have been working with the interim Handbook and Grievance committee and with the school Deans to address these problems.

For the first time this year, Ramp-Up conducted a wide-ranging climate survey of the tenured and tenure track faculty. The response rate was very high at 67% and our results achieved statistical significance on many measures. One clear finding was that women faculty experience considerably greater stress related to teaching than do men. We are currently working to explore the underlying causes. Two possible hypotheses are that our largely male student population causes differentially higher stress for women faculty, especially for younger women. Another is that women are assigned more unique course preps and teach a wider range of courses than do men. Both of these will be investigated in the coming year.

In addition, the senior women faculty will seek a meeting with RPI's president to address other issues in the Climate Survey, especially the general level of dissatisfaction with some administrative units on the campus and the unacceptable level of hostile behavior that our women faculty face. These issues clearly require her attention.

## Activities and Outcomes

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# T.E.A.S.

## Towards Excellence in Academia Seminars



Throughout the academic year, RAMP-UP sponsored 6 seminars for women faculty on a wide variety of career-related topics. Areas of particular importance for promotion and advancement were highlighted. In each seminar, a speaker or panel of speakers opened a discussion with brief presentations followed by open discussion. Our distinguished speakers included both on-campus and off-campus faculty. The seminar series was evaluated very positively by participants and will be continued in the 09-10 academic year.

### **Faculty Welcome Reception Sept 24, 2008**

We began the seminar series with a networking reception at the start of the academic year. New women faculty and new faculty coaches were introduced. Four brief presentations to kick-off the year were as follows:

- *Launching "Towards Excellence in Academia" Seminars* by Kristin Bennett
- *Career Campaign Awards* by Debbie Kaminski
- *Daycare Committee Activities* by Deanna Thompson
- *New England Nanny Service* by Melissa Schoonmaker

We distributed a questionnaire on topics that women faculty would find particularly useful to their career success and this became the basis on which we designed the seminar series.



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## **Self Promotion – A Key to Advancement** Oct. 22, 2008

Academic success is partially measured by external recognition such as invited lectures, awards, citations, grant panels, editorships, and professional leadership positions. Promotion and tenure depend on letters showing that important people recognize your contribution. How do we achieve this external recognition? What are effective strategies for networking to spread one's ideas, work, and existence to the profession community? Is this shameless self-promotion or part of our job? How do we balance getting the word out versus getting the research done? A panel of distinguished professors from Rensselaer including Kristin Bennett, Natacha DePaola, Mark Holmes, and Cheryl Geisler, each gave brief opening statements. This was followed by a wide ranging discussion among participants exploring ideas and strategies for self promotion. Note that since last year, two of the panelists have accepted positions as Deans.

A short reading was recommended for the seminar, "Becoming Visible: Effective Self-Promotion" by the Women in Cell Biology <http://www.ascb.org/files/0606wicb.pdf>

## **Effective Teaching on a Shoestring** Nov. 19, 2008

In an academic environment that promotes research, service, and teaching, how do we maximize the little time and resources to do it all? What are some of the strategies, tools, and resources available to us on campus? In this second installment of RAMP-Up T.E.A.S, we shifted our focus on the classroom. After a brief overview of the resources available to us, such as the course development team, Multimedia Services, Library, and LMS Support, we discussed some of the tools, techniques, and technologies also available to us, such as course design models, learning management systems, synchronous and asynchronous tools, Web 2.0 technologies (such as podcasting, blogs, and wikis), media creation tools, and assessment tools, such as IDEA. This seminar was facilitated by Marie-Pierre Hugué, Senior Course Developer at Rensselaer.

## **Perspectives from President Shirley Ann Jackson: Managing for Success** Mar. 4, 2008

The Honorable Dr. Shirley Ann Jackson, President of Rensselaer, met with the women faculty to share her thoughts on leadership in a technological community. She outlined her career from the early days following the receipt of her doctoral degree at MIT through her research successes at AT&T Bell Labs, her university experiences at Rutgers, and her gradual rising influence at the federal government level. She spoke of her days as Chairman of the Nuclear Regulatory Commission and of her coming to Rensselaer as our 18<sup>th</sup> president. At each step, she gave useful insights into how she built on opportunities, cultivated relationships, and managed her career advancement. She commented at length on the essential features of effective leadership. Dr. Jackson's presentation was followed by a lively question and answer session.



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## **Creativity and Productivity in Research** March 18<sup>th</sup>, 2009

MacArthur fellows, Dr. Claire Gmachl and Dr. Sally Temple joined us for a breakfast discussion on doing great research and maintaining your creative edge. MacArthur fellowships, commonly known as “Genius Grants,” recognize individuals who show extraordinary creativity, productivity, and potential.

Discussion questions included:

- What is your current research and what excites you most about it?
- How did you get on the path to your current research?
- What are the processes you use to get your creative ideas and turn them into high impact research?
- How does collaboration play a role in your research?
- How do you stay abreast of work in your field?
- How do you manage your research group?
- How do you decide where to target your research efforts?
- How do you balance creativity and funding?

## **Collaboration and Interdisciplinary Research** Apr. 29, 2009

Collaboration can be both intrinsically rewarding and a competitive advantage in the academic environment. Collaboration can stimulate creative research/work, increase productivity, broaden research impact, establish valuable social networks, attract students, and diversify funding sources. But establishing collaborations is time consuming and positioning interdisciplinary research for publication and grants can be challenging. Panelists, Drs. George Plopper, Anna Dyson, Mark Shephard, Deborah McGuinness and Luciano Castillo helped us explore the ins and outs of collaborations and interdisciplinary research.

Discussion questions included:

- How did your collaborations get started and how did it enhance your research and career?
- What kind of organization and mechanisms of collaboration work best for you?
- How should junior faculty balance collaborative work and establishing their core research contribution?
- Can one collaborate effectively at a distance?
- Is collaboration important for promotion and tenure?
- What are the potential risks and costs of interdisciplinary research and collaborations and how can you minimize them?

## Activities and Outcomes

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# Negotiation and Mentoring Workshops



On April 22 and 23, RAMP-UP sponsored two days of workshops facilitated by COACH consultants Jane Tucker and Barbara Butterfield. The morning of the first day was devoted to negotiation and the afternoon to mentoring. At lunch, outstanding mentors from Rensselaer were honored with awards and certificates. On the second day, Tucker and Butterfield met with the Rensselaer leadership team including deans, associate deans, department heads, and the provost to strategize on how mentoring could be improved within departments.



The negotiation workshop was extremely well received. Several participants commented that it was the best workshop they had ever been to. The session was a blend of providing information and facilitating group interactions for experiential learning. Handouts and slides were used to outline the styles of negotiation and faculty filled out questionnaires to discover their own preferred style. The role of language in setting the tone of a negotiation was explored and participants practiced improving their use of or avoidance of key words. The concept of anchoring, a major finding from psychological research, was detailed in the context of negotiation. A role playing activity was used to cement ideas and internalize concepts.

The luncheon meeting was devoted to mentoring. Prior to the event, the RAMP-UP leadership team solicited nominations from the faculty for outstanding mentors. We received 12 nominations and evaluated them on the basis of

- Sustained mentoring over time
- Impact of mentoring on career
- Develops collaboration opportunities
- Facilitates networking
- Frequency of mentoring
- Reviews writing or proposals



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- Easy to talk to, approachable and collegial
- Recommend advancement opportunities

All faculty nominated for mentoring awards, with the exception of one person on the leadership team, who was nominated but disqualified, received recognition certificates. The Top Mentor Award, which included a \$500 cash prize, was given to Angel Garcia, the mentor of Blanca Barquera, one of our Career Campaign award winners. Angel began to mentor Blanca even before she arrived at Rensselaer. He reviewed grant proposals, arranged invitations for seminars, and provided support with a sense of humor and generosity. The awards were presented by the Vice President for Research, Wolf Van Maltzden, who gave a short speech on effective mentoring at the luncheon.

The afternoon of Apr. 22 was devoted to a mentoring workshop for faculty, led by Tucker and Butterfield. The workshop touched on many topics, including key roles and relationships, measuring success, tools of the trade, and support for effective mentoring. Case studies were introduced and the participants divided into small groups for discussion. The workshop wound up with a presentation on best practices in mentoring. Readings for the workshop included Giving and Getting Career Advice: Guide for Junior and Senior Faculty, [advanceprogram@umich.edu](mailto:advanceprogram@umich.edu), <http://sitemaker.umich.edu/advance> and Entering Mentoring; Handelsman et al, The Wisconsin Program for Scientific Teaching, <http://scientificteaching.wisc.edu>.

On the second day of the workshop, Tucker and Butterfield met with the Institute leadership team, including department heads, associate deans, deans, and the Provost. Strategies for implementing mentoring practices at the department level were explored and the challenges to mentoring in a technological university were discussed. The role of the chair in mentoring and the large results that can be achieved even from small time commitments were highlighted.

## Activities and Outcomes

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# Career Campaign Awards

Research documents that access to mentoring networks is especially important for women faculty. Career Campaign Awards supported by RAMP-UP are intended to enable them to establish mentoring relationships and plan career advancement. Career Campaign Awards allow women to work with a mentor to enhance career success and prepare for advancement in rank. Eligible women have included:

- Women Associate Professors, tenured or tenure-track, who work in an NSF-funded area, OR
- Women Assistant Professors, tenure-track, who work in an NSF-funded area.

Candidates submitted proposals that reviewed their current positions, outlined a plan for advancement, and described the proposed activities to be supported under the grant. A letter of commitment and support from the mentor was also required. See Appendix B for the RFP.

Six women were given Career Campaign Awards this year, joining the 11 award winners from the first and second rounds who continued to work on their advancement plans. They are profiled on the following pages.

**Kathy High is an Associate Professor in the Arts Department.** She is also a media artist, curator, and produces videos and installations around issues of gender and technology, pursues queer and feminist inquiries into various areas of medicine/bio-science, and is engaged with science fiction, and studies animal behavior. High teaches digital video production and post production and has been working in the area of film, video and photography for over 20 years.



**Lee Ligon is an Assistant Professor, Department of Biology.** She has a Ph.D. in Neuroscience from the University of Virginia. Ligon's research is focused on cytoskeletal organization and dynamics with an emphasis on the microtubule cytoskeleton. Among the honors and awards she has received are a National Research Service Award from the National Institutes of Health, an Alavi-Dabiri Fellowship Award, and a Porter Symposium Award from the Society of General Physiologists. Her graduate work was also recognized with the prestigious President's Fellowship and Dean's Merit Fellowship at the University of Virginia.



**Li (Emily) Liu, Assistant Professor in the Dept. of Mechanical, Aerospace & Nuclear Engineering,** earned her Ph.D in 2005 from the Massachusetts Institute of Technology. Dr. Liu conducts research in various aspects of neutron scattering, including its use in nanotechnology and polymer science, such as the dynamics of water confined in nanoporous materials, proteins and DNAs, in looking for alternative energy such as nuclear and hydrogen, and in the measurements and calculations of inelastic neutron cross sections.



**Liping Huang is an Assistant Professor, in the Department of Materials Science & Engineering.** Her research goal is to develop a basic understanding for the rational design of traditional materials like oxide glasses and ceramics with superior properties, as well as newly emerged nanostructured materials for energy, environment and biology-related applications. Dr. Huang received the Outstanding Mentor Award, from the University of Michigan in 2006 and the Norbert J. Kreidl Award from the American Ceramic Society in 2003.



**Lucy T. Zhang, Assistant Professor in the Department of Mechanical, Aerospace & Nuclear Engineering**, received her Ph.D. from Northwestern University in 2003. Upon the completion of her Ph.D. in 2003, she joined the Mechanical Engineering department at Tulane University in New Orleans as an assistant professor. In 2006, she became a faculty member at RPI. Her research focuses on computational mechanics with special emphasis on fluid-structure interactions, computational biomechanics, and multiscale modeling of interfacial interactions.



**Abby Kinchy, an Assistant Professor in Science and Technology Studies**, received a Ph.D. in Sociology from the University of Wisconsin-Madison. She has a variety of research interests, including: food, agriculture, biotechnology, and rural communities; environmental politics and history; social movements and participatory science; and expertise and democracy. Professor Kinchy teaches courses for the Sustainability Studies minor, including "Environment and Society" and "Food, Farms, and Famine." She is also a co-instructor for "Product Design and Innovation Studio II," a required course for the Design, Innovation, and Society major. At the graduate level, she teaches "Science, Technology, and Social Movements" and "Concepts in STS."



Our Career Campaign Award winners from the past two years continue to work on their projects. Some notable highlights:

- Lupita Montoya was able to attend an international conference on Indoor Air Quality and Climate in Denmark using the Career Campaign Award funds. She presented a paper and more recently submitted a journal paper based on that work. It is now under review.
- Aparna Gupta and her mentor have submitted a paper to a conference, titled: Impact of Compensation Structure and Managerial Incentives on Bank Risk Taking: Evidence from US and Europe. She should hear back by mid-March of acceptance.
- Jan Fernheimer published an article and a book review in the Rhetoric Society Quarterly January 2009 issue, and has an article coming out in the Spring issue of Computers and Composition Online. She completed her visiting fellowship. She gave two presentations over the December break—one at AJS, and one at MLA. Fernheimer passed her third year review at the department level.



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- Mariana Figueiro goal for this award was for her to be able to travel and form collaborations with clinicians, which she did. An NIH R21 proposal was funded this past September for her to work with Dr. Philip Sloane at University of North Carolina, Chapel Hill to look at the impact of blue light on sleep quality of Alzheimer's disease patients. The work just started. Figueiro has also been working with Dr. Patricia Higgins and Dr. Thomas Hornick from Case Western University and the VA Hospital on the same topic. They have submitted two proposals and they are pending. Apart from that, her grant funds have been used and she continues by following up on the work that started with the money from the grant.
- Blanca Barquera has published a number of peer review papers; Peer-reviewed papers:
  1. \*Juárez, O., \*Morgan, J.E., and \*Barquera, B. 2009. The electron transfer pathway of the Na<sup>+</sup>-pumping NADH:quinone oxidoreductase from *Vibrio cholerae*. *J. Biol. Chem.* Accepted.
  2. \*Juárez, O., Nilges, M. J., \*Gillespie, P., \*Cotton, J., and \*Barquera, B. 2008. Riboflavin is an active redox cofactor in the Na<sup>+</sup>-pumping NADH:quinone oxidoreductase (Na<sup>+</sup>-NQR) from *Vibrio cholerae*. *J. Biol. Chem.* 283:33162-33167.
  3. \*Backiel, J., \*Juárez, O., \*Zagorevski, D.V., \*Wang, Z., Nilges, M.J., and \*Barquera, B. 2008. Covalent binding of flavins to RnfG and RnfD in the Rnf complex from *Vibrio cholerae*. *Biochemistry.* 47:11273-11284.
- Audrey Bennett's October Conference, GLIDE, was funded by the American Institute of Graphic Arts and a success. She is now editing a special issue of the journal *Visible Language* on the conference's theme--global interaction in design education. She is also working on the further dissemination of the conference proceedings by way of social networking and digital entertainment venues.

## Activities and Outcomes

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# Faculty Coaches

The role of the Faculty Coach is to provide advice and assistance to faculty at all ranks on advancement issues, to participate in advancement reviews at the level of the school as a non-voting member, to consult with the school leadership on advancement issues, to facilitate women's advancement and to encourage networking (see Appendix C for more details).

### **FACULTY COACH IN ENGINEERING**

Linda Schadler, Professor of Materials Science and Engineering, was named the new Faculty Coach in the School of Engineering this year. Schadler is one of the leading women on the campus, has served as chair of the Institute Promotion & Tenure Committee, and has been active on women's issues.

Schadler has met with all women Assistant Professors at least once. She has introduced several faculty members to senior members in order to start conversations about potential collaboration. The biggest issue she has found is that the women faculty are isolated and not collaborating enough (on average) and that socially, things could also be better.

Schadler has worked on a proposal for changed wording of P&T and 3rd year renewals for those who have taken parental leave or similar leave. Schadler worked with the Acting Dean, to help him become more aware of the climate issues for women in his school.

### **FACULTY COACH IN SCIENCE**

Mark Holmes continues to serve as the Faculty Coach in the School of Science. Holmes was involved with a P&T case in the School of Science, and worked with the Department Head and the Dean of the School of Science to change RPI's policy for extensions on the tenure clock. Their goal was to have the Provost provide an extension for a candidate because of RPI's very slow response to equipping the candidate's lab. However, this was not successful, and the person was declined promotion. The problem of long delays in lab space and equipment at startup is endemic on this campus, and Holmes and the other faculty coaches will work with the administration to redress this wrong over the next academic year.



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## **FACULTY COACH IN HUMANITIES, ARTS, AND SOCIAL SCIENCES**



Caren Canier, Faculty Coach in the School of Humanities, Arts, and Social Sciences has on Sept. 22 co-hosted an Informational Meeting about Promotion and Tenure Process for Assistant Professors with John Harrington. On Nov. 12, she held an informal get together for all Women Faculty in HASS. On Nov. 5<sup>th</sup> Canier facilitated a mentoring session with a faculty member to discuss P&T.

Canier also coordinated another informational meeting for both the School of Humanities and School of Architecture with their respective Deans and Provost Robert Palazzo to glean a better understanding of criteria needed to become full professor. This event took place on April 1<sup>st</sup>.

Appointments as Faculty Coach are carefully reviewed by the RAMP-Up Advisory Board and by the Dean of the school in which they serve. RAMP-Up is fortunate to have such well-respected members of the Rensselaer Community as the Faculty Coaches in their respective schools.

## Activities and Outcomes

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# Policy Initiatives

The leadership team has identified two critical problems for the advancement of women faculty at Rensselaer. One is the delayed start-up of new faculty due to the lack of space and equipment and the other is the poorly regulated process for third year review. These two problems can unfortunately interact to create an extremely difficult environment for assistant professors.

Most faculty receive start-up packages upon hire to facilitate their research initiatives. In recent years, in both the schools of science and engineering, an alarming number of new faculty have not received the promised space or equipment. Delays can be more than two years, by which time irreparable damage has been done to the tenure case.

To address this issue, the PI and co-PI met with each of the Deans and outlined the problem. The Deans were reluctant to put in place formal tenure clock delay policies but assured us that consideration would be taken in individual cases. In fact, this promise has not materialized. In one case in Engineering, a faculty member received a 1 year extension (to make up for a 2.5 year delay), but several other cases in Engineering and Science were given no consideration. One woman in Science was not tenured and this could be directly attributed to the long delays in start-up. Note that this problem is not specific to women and is also a serious impediment to men, but many women are in junior positions and the overall population of women is therefore more likely to be affected.

The Deans that we spoke with were both acting, and a new Dean has recently arrived in Engineering. The Science Dean search is still underway. Kaminski has met with the new Engineering Dean David Rosowsky and introduced him to the Faculty Coach and to the broader Advance goals. We will work with Dean Rosowsky throughout the coming year to address this problem in Engineering.

A second serious issue is the tightened requirements for renewal of contract at the third year review. We have seen evidence of this in several departments on campus. The faculty Handbook says very little about the third year review process, and is silent on issues such as expectations of candidates, external letters, review by department faculty, overall process, and appeals upon denial. This has become an issue in several cases which would have been easily renewed in the past and were recently denied.



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We are also addressing both these issues at the Institute level. Rensselaer is still without a Faculty Senate, after the Board of Trustees disbanded our Senate more than a year ago. In the face of a continued lack of agreement about the reformulation of the Faculty Senate, the Provost held school-based elections for interim committees last fall. As a result of an email from RAMP-Up urging tenured women to get involved, women were elected to all committees; and the Faculty Handbook and Grievance Committee — which may eventually be called upon to revise the Handbook — is three-fifths women.

Kaminski, the PI, met with both the Faculty Handbook and Grievance Committee and the P&T committees to discuss policy changes related to delayed start-up and third year review. Schadler, the Faculty Coach in Engineering, met with the P&T committee as well. Her input acted to reinforce and elaborate the RAMP-UP position and drew upon her experience as a former head of the P&T committee. We await the committee's report.

In addition to these communications with the administration, we have intervened for women faculty in four instances. Our intervention process involves either the PI or co-PI becoming familiar with the particulars of a given situation, and accompanying the faculty member to a meeting with the Provost. In one case, a third-year renewal declination was averted. Other cases involved promotions to full professor which were stalled in department. In general, the intervention process has had very good outcomes.



## Activities and Outcomes

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# Personnel Changes

The RAMP-UP program at Rensselaer will complete its third year in Oct. 2009. Cheryl Geisler has been the PI from project inception to this point and has led the project very successfully. Prof. Geisler has accepted a position as Dean of Communication, Art and Technology at Simon Fraser University in Vancouver Canada, and has left Rensselaer as of July 23, 2009.

Deborah Kaminski, a Professor of Mechanical Engineering, has become PI of the grant. Prof. Kaminski was previously co-PI on the grant and has been very active in all aspects of the grant management and implementation, including seminar planning, Faculty Coaches, Career Campaign Awards, Department Change Awards, the Pipeline search, policy development, the PhD Move Initiative, the climate survey, cohort analysis, and collection of NSF indicator data. Prof. Kaminski authored part of the original proposal and has been with the grant since its inception. She has attended the NSF Advance conferences in Washington each of the last three years and is very familiar with the goals and priorities of the program.

Last year, Kristin Bennett, a professor of Mathematics, became a major contributor to the grant by organizing our seminar series. We have requested that Prof. Bennett be added as a co-PI, expanding her role in the management of the project. She will be attending the Advance conference in October.

In addition, the financial management of the grant has been moved from the School of Humanities, Arts, and Social Sciences, which was the former PI's school to the School of Engineering, which is the current PI's school. Our staff, including Angela McNerney and Penny Darling, have been relocated in the Johnson Engineering Center. Our new office is a big improvement, with over 800 sq. ft. of floor area and a prominent location opposite the elevators. We have ample office equipment, a conference table and two workstations for the staff.

## Evaluation

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# Climate Survey

In spring 2009, the tenure and tenure-track faculty at Rensselaer were surveyed to determine attitudes toward job satisfaction, hiring and retention, benefits, mentoring, promotion & tenure, and workload. The response rate for the survey was excellent. A total of 239 faculty responded; this was 67% of the 359 reached via a valid email address.

The survey found some significant differences between the experiences of men and women. Women report significantly higher stress related to scholarly productivity (88% vs 76% for men); and teaching responsibilities (89% vs. 75% for men). Women were significantly less satisfied with their computer resources and with support for securing grants than men. No significant gender differences in satisfaction arose with most aspects of compensation and benefits except in the area of medical benefits where women were less satisfied than men. Women also feel that P&T criteria are less clear and fair than men report. In addition, women are far more likely to have direct or indirect experience with environmental harassment.

The leading cause of life-related stress for faculty is managing household responsibilities. Women are subject to significantly more stress in this area; 76% report at least some stress from managing a household versus just 60% of the men. Stress from a range of child-related issues is also much higher for women than for men.

The faculty, both men and women, report satisfaction with several aspects of the Rensselaer climate. In general, faculty are satisfied with their departments, with the support of heads and colleagues in the department and with department staff. Specifically, on a scale from 1-strongly disagree to 5-strongly agree, faculty reported

- their colleagues value their research/scholarship (3.92).
- they are satisfied with opportunities to collaborate both within the department (3.59) and across the institution (3.70).
- the department is a good fit for them (3.98).
- their department head creates a collegial and supportive environment (4.04), and helps them to obtain the resources they need (3.60).
- they have a voice in the decision-making that affects the direction of the department (3.62), and can navigate the unwritten rules concerning how to conduct oneself as a faculty member (4.00).



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- individuals can comfortably discuss personal and/or family responsibilities in their departments (3.83).

There are no significant gender differences in these departmental climate issues.

With two significant exceptions, the Rensselaer faculty also reported general satisfaction with their compensation and benefits. On a scale from 1 – very dissatisfied to 5 – very satisfied, the top rated benefits included two family friendly benefits, the new Pinch Hitter Nanny Service (4.04) and the long-standing parental leave policy (4.03). The two lowest rated benefits included salary (3.18) and the tuition benefit (3.30).

The survey identified some potential issues with the Rensselaer climate. Just over half (54%) of the surveyed faculty reported being very satisfied or somewhat satisfied with being a faculty member at Rensselaer. This is lower than the results for Harvard (79%) and Iowa State (60%) the only two institutions for which corresponding data could be found. A large 40% reported being somewhat dissatisfied or very dissatisfied. No difference appears between men and women in terms of overall satisfaction rate, but significant differences do arise across ranks. A large fraction of full professors, 46%, report being somewhat dissatisfied or very dissatisfied. For associate and assistant professors, the corresponding dissatisfaction rates are 42% and 29%.

In the last three years, nearly 42% of the faculty have applied for or inquired about a job outside of Rensselaer. Furthermore, 12% report taking an offer to their department head or dean. Nearly 40% considered it at least somewhat likely that they will leave Rensselaer in the next three years. No differences between men and women appear with respect to retention. Across schools, differences are striking. Scientists are significantly less likely (26%) to have applied or inquired about other positions, while faculty in all other schools are more likely to have inquired or applied (52% for engineering; 53% for HASS, and 53% for architecture/management). Top reasons for considering leaving include:

- Enhancing career (85%),
- Finding a more supportive work environment (77%)
- Increasing salary (72%).

Members of the Rensselaer faculty were generally less satisfied with their resources than with their benefits. Top-rated resources included clerical and administrative staff (3.85) and computer resources (3.7). Faculty judged themselves less than satisfied with many other aspects of their resources including Library resources (3.15), Building and Maintenance Infrastructure (3.10), Support for securing grants (3.10), and Research accounting (2.98).

Looking at their responsibilities, members of the Rensselaer faculty found their teaching and advising responsibilities satisfactory (3.86), but judged their time



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available for scholarly work (3.19) and their committee and administrative responsibilities (3.47) less so. Across schools, there were some significant differences.

- Engineers and scientists were significantly more satisfied and HASS and Management/Architecture more dissatisfied with their teaching responsibilities.
- Engineers were significantly more likely to be dissatisfied with their advising responsibilities.
- HASS and Management/Architecture more likely to be dissatisfied with time available for scholarly work.

Nearly one-third of the Rensselaer faculty, both men and women, report some direct or indirect knowledge of a hostile workplace climate, defined as “an uncomfortable or threatening environment due to aggressive behavior.” More than one in ten have personal experience with a hostile workplace.

Overall, members of the faculty were less than satisfied with the mentoring they had received (2.67). About half judged it to have worked at least somewhat well, but over a quarter judged it to have been poor.

## Evaluation

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# Cohort Analysis

The career paths of science and engineering faculty at Rensselaer and 13 other universities over the past 20 years have been tracked and analyzed for hiring, retention, and promotion patterns. The faculty were divided into 5 cohorts, depended on the date of appointment to Assistant Professor. The first cohort consists of faculty who entered from 1990 to 1993, and each subsequent cohort covers a four year span.

The data can be sorted by university, gender, school, and department. The dates of promotion to associate professor and full professor and the date at which the faculty left the tenure track at their university were recorded. At this point, there are more than 2,300 faculty in the database. Data were obtained through publicly available sources, namely the annual course catalogs published by each university. The last data will be collected in Oct. 2009 and will reflect hiring, promotion, and departures over the prior year.

Cohort	% women
1990-93	19
1994-97	22
1998-01	18
2002-05	26
2006-08	27

Most of the effort over the past year has been devoted to tracking individual faculty and filling the database. In some cases, this involved visits to the archives of the universities under study, especially for the earlier years when catalogs were not published on line. We have not yet performed a complete analysis of the data, since the last year is not yet available, however, we have some preliminary results.

In general, hiring of women as assistant professors has accelerated over the last 20 years, although progress has not always been smooth. Starting from a baseline of 19% in 1990-93, the rate improved to 22% in 1994-97, but fell back to 18% in 1998-02. Since then, the rate has been steady at about 26% since 2002.

Rensselaer has been about average in its hiring of women into science and engineering tenure track positions over this twenty year period. The data for three of the cohorts comparing Rensselaer to 11 other universities is shown on the following three pages. In many cases small numbers of individuals are involved, so statistically significant conclusions are not possible.



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Cohort 1

1990-1993

Hiring: All disciplines

**University                      Code    # Men    # Women    % Women**

Rensselaer Poly Ins	RPI	23	5	18%
George Washington DC	GW	6	1	14%
Columbia	COL	12	1	8%
Cornell	CORN	34	9	21%
U of Rhode Island	URI	11	5	31%
Boston University	BU	28	5	15%
MIT	MIT	82	17	17%
University of Delaware	UD	15	3	17%
U Maryland Baltimore County	UMBC	32	7	18%
Northeastern University	NEU	20	3	13%
Georgia Tech	GT	62	15	19%
U Mass Amhearst	UMA	18	7	28%
All Universities		343	78	19%



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## Cohort 3 1998-2001

### Hiring: All disciplines

University	Code	# Men	# Women	% Women
Rensselaer Poly Ins	RPI	38	6	14%
George Washington DC	GW	9	3	25%
Columbia	COL	28	2	7%
Cornell	CORN	38	15	28%
U of Rhode Island	URI	8	4	33%
Boston University	BU	28	4	13%
MIT	MIT	77	12	13%
University of Delaware	UD	37	6	14%
U Maryland Baltimore County	UMBC	18	10	36%
Northeastern University	NEU	18	1	5%
Georgia Tech	GT	96	18	16%
U Mass Amhearst	UMA	35	13	27%
All Universities		430	94	18%



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Cohort 5

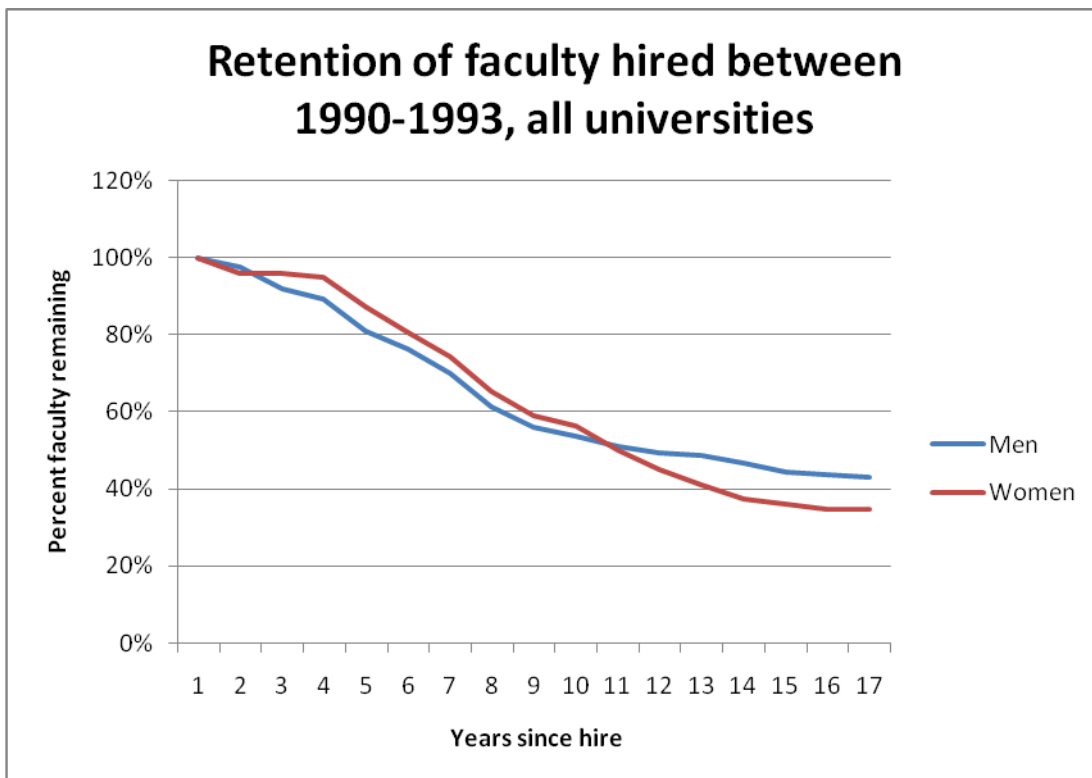
2006-2009

**Hiring: All disciplines**

<b>University</b>	<b>Code</b>	<b># Men</b>	<b># Women</b>	<b>% Women</b>
Rensselaer Poly Ins	RPI	30	13	30%
George Washington DC	GW	5	3	38%
Columbia	COL	17	7	29%
Cornell	CORN	43	13	23%
U of Rhode Island	URI	8	4	33%
Boston University	BU	23	10	30%
MIT	MIT	43	13	23%
University of Delaware	UD	36	16	31%
U Maryland Baltimore County	UMBC	9	8	47%
Northeastern University	NEU	17	5	23%
Georgia Tech	GT	83	30	27%
U Mass Amhearst	UMA	41	12	23%
All Universities		355	134	27%

The study reveals some interesting perspectives on promotion to Associate Professor. For the first cohort, beginning 1990-1993, 66% of the men and 67% of the women who began were at some time promoted to Associate professor. Catalog data cannot reveal how many left voluntarily before promotion as opposed to how many were denied. A plot of the percentage of faculty remaining at the same university over time shows a smooth decline, with men leaving at slightly higher rates before year 11 and women leaving at higher rates beyond year 11. Note that there is no sudden drop off at 6 or 7 years, when the tenure clock might be expected to kick in. Possibly faculty who were concerned about being awarded tenure left earlier. Of course faculty leave for a wide variety of reasons, and that apparently tends to smooth out the curve. They are also promoted at widely varying times.

We have not yet analyzed the data for promotion to full professor since we are waiting for the final year's data to become available. We plan a full analysis, including the effect of cohort, school, department, gender, etc. once the data set is complete.



## Evaluation

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# Seminar Evaluation

At every seminar, we distributed a one-page evaluation instrument that was designed to elicit key feedback from the participants. The complete survey results for all seminars are detailed in Appendix A. In each case, we had a very high response rate, since women faculty at Rensselaer are very supportive of our efforts. On each evaluation, the final question was designed to capture an overall impression of the seminar.

In general, the T.E.A.S. series was very well received. The session with President Jackson was the most highly rated, with an overall rating of 1.3, on a range from 1 to 5 with 1 being the best rating. Participants thought it was “incredible”, “very impressive,” “inspiring and honest.” Our least successful effort was the seminar on teaching on a shoestring, which had an overall rating of 2.44. We feel that the presenter was somewhat lackluster and not well organized. Other seminars were close to the excellent scores of the Jackson seminar.

The COACH workshops were very successful, especially the negotiation workshop, which had an overall rating of 1.11. Participants were very complementary, with comments such as “best workshop I ever attended” and “really helpful.” The mentoring workshop was about average at a rating of 1.63. The second day, the COACH team met with the Institute leadership, including Heads, Deans, Associate Deans, and the Provost. This workshop had a high overall rating of 1.36. Interestingly, we learned that only 2 out of 10 of the survey responders strongly agreed that they had considerable experience in mentoring. We consider this a problem – our heads should embrace mentoring as a core activity of department leadership, but clearly it is secondary.



# Dissemination

In June, 2008, we presented our work on Social Network Analysis at the American Society of Engineering Education conference in Pittsburgh, PA. The reference is

Geisler, C.A., and D. A. Kaminski *American Society of Engineering Education Annual Conference, Pittsburgh, PA*, 2008, “Social Network Analysis of Faculty Interactions in Four Science and Engineering Departments”

Audience interaction was positive with several individuals contacting us for follow-up information.

Our major research effort this year was the aforementioned cohort analysis. Publication of this work is in preparation and awaits the completion of the data set, which can only be completed after Oct. 1 when all universities in the study will have updated their catalogs and web pages.

PI Kaminski has been invited to present at a symposium at the American Chemical Society meeting in March 2010 entitled “Successful Mentoring Strategies to Facilitate the Advancement of Women Faculty”. The symposium is co-sponsored by the Division of Chemical Education, the Women Chemists Committee, and the Younger Chemists Committee.



# Appendix A

## Event Evaluation Survey

October 22, 2008 TEAS

### Self-Promotion

		1	2	3	4	5
		Strongly agree	agree	neutral	disagree	strongly disagree
<b>1. The seminar addressed an issue of importance to my career.</b>	<b>1.50</b>	4	1	1		
<b>2. The leader(s) or speaker(s) provided valuable perspectives and guided the discussion well.</b>	<b>1.83</b>	3	1	2	0	
<b>3. The seminar promoted sharing of information and ideas.</b>	<b>1.58</b>	3.5	1.5	1	0	
<b>4. The seminar raised significant issues and introduced strategies for improvement.</b>	<b>1.83</b>	2	3	1		
<b>5. The seminar helped me feel more connected and supported by my colleagues.</b>	<b>2.00</b>	2	2	2		
<b>6. I would recommend this seminar series to my friends.</b>	<b>1.67</b>	3	2	1	0	
		3	4	3	0	0
		Professor	Associate Professor	Assistant Professor		
<b>7. My rank is</b>		3	0	3		



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## Event Evaluation Survey

November 19, 2008 TEAS

### Teaching Techniques

1	2	3	4	5
Strongly agree	agree	neutral	disagree	strongly disagree

**1. The seminar addressed an issue of importance to my career.**

**1.67**

3	6			
---	---	--	--	--

**2. The leader(s) or speaker(s) provided valuable perspectives and guided the discussion well.**

**2.22**

1	6	1	1	
---	---	---	---	--

**3. The seminar promoted sharing of information and ideas.**

**2.22**

2	4	2	1	
---	---	---	---	--

**4. The seminar raised significant issues and introduced strategies for improvement.**

**2.11**

2	4	3		
---	---	---	--	--

**5. The seminar helped me feel more connected and supported by my colleagues.**

**2.11**

2	4	3		
---	---	---	--	--

**6. I would recommend this seminar series to my friends.**

**2.44**

2	3	2	2	
---	---	---	---	--

	Associate Professor	Assistant Professor
--	---------------------	---------------------

7. My rank is

5	1	3
---	---	---



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## Event Evaluation Survey

4-Mar-08

President Jackson

1	2	3	4	5
Strongly agree	agree	neutral	disagree	strongly disagree

**1. The agenda covered many important aspects of the track from Professor to President** **1.52**

13	11	1		
----	----	---	--	--

**2. There was adequate time for questions from the audience.** **1.31**

19	6	1	0	
----	---	---	---	--

**3. I have a clearer understanding of the priorities, perspectives and management style of President Jackson.** **1.67**

13	11	2	1	
----	----	---	---	--

**4. I felt this event was a useful initiative in terms of supporting women faculty.** **1.38**

18	6	2		
----	---	---	--	--

**5. Overall, the event was worthwhile and I would recommend similar events in the future.** **1.30**

20	6	1		
----	---	---	--	--

	Associate Professor	Assistant Professor	
--	---------------------	---------------------	--

7. My rank is

10	4	9	
----	---	---	--



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## Event Evaluation Survey

### Collaboration and Interdisciplinary Research

Wednesday, April 29, 2009

1	2	3	4	5
Strongly agree	agree	neutral	disagree	strongly disagree

**1. The discussion covered many important aspects of Collaboration and Interdisciplinary Research.**

**1.69**

7	4	1	1	
---	---	---	---	--

**2. There was adequate time for questions from the audience.**

**1.69**

7	3	3		
---	---	---	--	--

**3. I have a clearer understanding of strategies for successful research collaborations.**

**2.00**

2	10	0	1	
---	----	---	---	--

**4. I felt this event was a useful initiative in terms of supporting women faculty.**

**1.93**

6	6	0	1	1
---	---	---	---	---

**5. Overall, the event was worthwhile and I would recommend similar events in the future.**

**1.54**

8	4	0	1	
---	---	---	---	--

Assistant Professor	Associate Professor	Professor
---------------------	---------------------	-----------

6. I am currently

9	2	2		
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## Event Evaluation Survey

Apr. 22, 2009

		1	2	3	4	5
		Strongly agree	agree	neutral	disagree	strongly disagree
<b>Negotiation Workshop</b>						
<b>1. Negotiation can play an important role in a faculty member's career.</b>	<b>1.00</b>	18	0			
<b>2. The workshop effectively addressed many issues related to negotiation.</b>	<b>1.11</b>	16	2	0	0	
<b>3. I am personally very interested in becoming an effective negotiator.</b>	<b>1.28</b>	14	3	1	0	
<b>4. I was introduced to new perspectives on successful negotiation.</b>	<b>1.11</b>	16	2	0		
<b>5. Overall, the workshop was worthwhile.</b>	<b>1.11</b>	16	2	0		
		Professor	Associate Professor	Assistant Professor		Grad student
7. My role is		3	8	3		4



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## Event Evaluation Survey

Apr. 22, 2009

### Mentoring Workshop

		1	2	3	4	5
		Strongly agree	agree	neutral	disagree	strongly disagree
<b>1. The career of a faculty member is strongly dependent on effective mentoring.</b>	<b>1.38</b>	5	3			
<b>2. The workshop effectively addressed many issues related to mentoring.</b>	<b>1.38</b>	5	3	0	0	
<b>3. I am personally very interested in the mentoring relationship.</b>	<b>1.63</b>	3	5	0	0	
<b>4. I was introduced to new perspectives on effective mentoring.</b>	<b>1.75</b>	2	6	0		
<b>5. Overall, the workshop was worthwhile.</b>	<b>1.63</b>	3	5	0		
				Associate Professor	Assistant Professor	Grad student
7. My role is		2	3	2	1	



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## Event Evaluation Survey

Apr. 23, 2009

### Mentoring for the Leadership Team

		1	2	3	4	5
		Strongly agree	agree	neutral	disagree	strongly disagree
<b>1. The workshop addressed many issues related to mentoring.</b>	<b>1.45</b>	6	5			
<b>2. I myself have considerable experience in mentoring.</b>	<b>1.90</b>	2	7	1	0	
<b>3. Ideas on how heads and deans can encourage mentoring within their departments were introduced.</b>	<b>1.45</b>	6	5	0	0	
<b>4. The session held my interest and moved at a reasonable pace.</b>	<b>1.64</b>	4	7	0		
<b>5. The facilitators created an environment for productive discussions.</b>	<b>1.36</b>	7	4	0		
<b>6. Overall the workshop was worthwhile.</b>	<b>1.36</b>	7	4			
		Head	Dean	Provost	Other	
7. My role is		2	3	2	1	



# Appendix B



## Career Campaign Awards Request for Proposals

2008

DEADLINE: 1/25/08

### Invitation

Women on the Rensselaer Faculty are invited to work with a mentor to secure a Career Campaign Award to enhance career success and prepare for advancement in rank. Eligible women include:

- Women *Associate Professors*, tenured or tenure-track, who work in an NSF-funded area, OR
- Women *Assistant Professors*, tenure-track, who work in an NSF-funded area.

Funding will be awarded to a mentor-mentee pair with a strong plan for career advancement.

### Rationale

Research documents that access to mentoring networks is especially important for women faculty. Career Campaign Awards supported by RAMP-Up! are intended to enable them to establish mentoring relationships and plan career advancement.

### Workshop for Prospective Mentees

We invite you to learn more at a *Workshop for Prospective Mentees* to be held on Thursday, December 13 at 12:30 in Rensselaer Union 3202. Lunch will be served. The workshop will be lead by Dr. JoAnn Moody, a nationally known consultant on faculty development. Many of last year's award winners will be there as well. We will provide an overview of RAMP-Up!, discuss proposal ideas, and help with establishing mentoring relationships.

### Workshop for Prospective Mentors

Dr. Moody will also be leading a *Mentors Workshop* for prospective and current mentors. If you have already identified a mentor to work with, please invite them to attend this second workshop, which will be held later the same day, Thursday, December 13, at 3:30, also in Rensselaer Union 3202.

### Supported Activities

Each award is budgeted at \$5,000. Funding is available for at least four awards this year. The following activities may be eligible for support as part of a coherent plan for career success. This list is not exhaustive, and activities not described here may also be acceptable:

- Travel funds for activities supporting the mentee's development
- Support for teaching release
- Support for equipment and/or supplies to conduct exploratory research
- Funds to support students or staff
- Funds for software licenses or fees

In addition, support for summer days is available to the mentor to compensate for mentoring time.

### Proposal Content

Each proposal must review the current position of the candidate, outline a plan for advancement, and describe the proposed activities to be supported under the grant. Maximum length of the proposal is 2 pages. A letter of commitment and support from the mentor is also required.

### Proposal Submission and Review

Proposals should be submitted electronically to Deborah Kaminski ([kamind@rpi.edu](mailto:kamind@rpi.edu)) no later than January 25, 2008. Proposals will be reviewed by the RAMP-Up! Advisory Board. Please feel free to contact members of the RAMP-Up! Advisory Board to discuss proposal ideas. Members include:

Cheryl Geisler, Co-chair ([geislc@rpi.edu](mailto:geislc@rpi.edu))  
Deborah Kaminski, Co-chair ([kamind@rpi.edu](mailto:kamind@rpi.edu))  
Kristin Bennett, Science ([bennek@rpi.edu](mailto:bennek@rpi.edu))  
Jim Napolitano, Science ([napolj@rpi.edu](mailto:napolj@rpi.edu))  
Joyce Diwan, Science ([diwanj@rpi.edu](mailto:diwanj@rpi.edu))  
Keith Nelson, Engineering ([nelsoj@rpi.edu](mailto:nelsoj@rpi.edu))

Susan Sharfstein, Engineering ([sharfs@rpi.edu](mailto:sharfs@rpi.edu))  
Jose Holguin-Veras, Engineering ([jhv@rpi.edu](mailto:jhv@rpi.edu))  
Antoinette Mamiatty, Engineering ([maniasa@rpi.edu](mailto:maniasa@rpi.edu))  
Linda Layne, H&SS ([laynel@rpi.edu](mailto:laynel@rpi.edu))  
Ken Durgans, Provost's Office ([durgak@rpi.edu](mailto:durgak@rpi.edu))  
Mark Holmes, Science ([holmes@rpi.edu](mailto:holmes@rpi.edu))



# Appendix C

## Functions of the Faculty Coach

### **1. PROVIDE ADVICE AND ASSISTANCE TO FACULTY AT ALL RANKS**

- PROVIDE ADVICE
- ACT AS A SOUNDING BOARD
- SERVE ALL RANKS
- DO OUTREACH

### **2. PARTICIPATE IN ADVANCEMENT REVIEWS AS NON-VOTING MEMBER**

- REVIEW CASES
- KEEP UP TO DATE ON SCHOOL PROCESS AND CRITERIA
- BRING IN THE RELEVANT LITERATURE

### **3. CONSULT WITH THE SCHOOL LEADERSHIP**

- CONSULT WITH DEAN
- ADVISE HEADS
- CALIBRATE NEW HEADS

### **4. FACILITATE ADVANCEMENT**

- SUPPORT MENTORING
- ADDRESS ISSUES EARLY
- ATTEND TO WORK-LIFE ISSUES
- GROOM FOR AWARDS
- BRING PEOPLE FORWARD

### **5. ENCOURAGE NETWORKING**

- FACILITATE INTERACTION
- ORGANIZE INFORMAL GATHERINGS

# Appendix D

Climate Survey Report

## **RAMP-UP**

**Rensselaer's NSF-funded Project for  
Institutional Transformation**

### **Report on Climate**

July, 2009

Rensselaer Polytechnic Institute

Cheryl Geisler

Deborah Kaminski

NSF ADVANCE Institutional Transformation Award 054835  
Questions can be directed to Cheryl Geisler at [geislc@rpi.edu](mailto:geislc@rpi.edu).



## Summary

In spring 2009, the tenure and tenure-track faculty at Rensselaer were surveyed to determine attitudes toward job satisfaction, hiring and retention, benefits, mentoring, promotion & tenure, and workload. The response rate for the survey was excellent. A total of 239 faculty responded; this was 67% of the 359 reached via a valid email address.

The survey found some significant differences between the experiences of men and women. Women report significantly higher stress related to scholarly productivity (88% vs 76% for men); and teaching responsibilities (89% vs. 75% for men). Women were significantly less satisfied with their computer resources and with support for securing grants than men. No significant gender differences in satisfaction arose with most aspects of compensation and benefits except in the area of medical benefits where women were less satisfied than men. Women also feel that P&T criteria are less clear and fair than men report. In addition, women are far more likely to have direct or indirect experience with environmental harassment.

The leading cause of life-related stress for faculty is managing household responsibilities. Women are subject to significantly more stress in this area; 76% report at least some stress from managing a household versus just 60% of the men. Stress from a range of child-related issues is also much higher for women than for men.

The faculty, both men and women, report satisfaction with several aspects of the Rensselaer climate. In general, faculty are satisfied with their departments, with the support of heads and colleagues in the department and with department staff. Specifically, on a scale from 1-strongly disagree to 5-strongly agree, faculty reported

- their colleagues value their research/scholarship (3.92).
- they are satisfied with opportunities to collaborate both within the department (3.59) and across the institution (3.70).
- the department is a good fit for them (3.98).
- their department head creates a collegial and supportive environment (4.04), and helps them to obtain the resources they need (3.60).
- they have a voice in the decision-making that affects the direction of the department (3.62), and can navigate the unwritten rules concerning how to conduct oneself as a faculty member (4.00).
- individuals can comfortably discuss personal and/or family responsibilities in their departments (3.83).

There are no significant gender differences in these departmental climate issues.

With two significant exceptions, the Rensselaer faculty also reported general satisfaction with their compensation and benefits. On a scale from 1 – very dissatisfied to 5 – very satisfied, the top rated benefits



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included two family friendly benefits, the new Pinch Hitter Nanny Service (4.04) and the long-standing parental leave policy (4.03). The two lowest rated benefits included salary (3.18) and the tuition benefit (3.30).

The survey identified some potential issues with the Rensselaer climate. Just over half (54%) of the surveyed faculty reported being very satisfied or somewhat satisfied with being a faculty member at Rensselaer. This is lower than the results for Harvard (79%) and Iowa State (60%) the only two institutions for which corresponding data could be found. A large 40% reported being somewhat dissatisfied or very dissatisfied. No difference appears between men and women in terms of overall satisfaction rate, but significant differences do arise across ranks. A large fraction of full professors, 46%, report being somewhat dissatisfied or very dissatisfied. For associate and assistant professors, the corresponding dissatisfaction rates are 42% and 29%.

In the last three years, nearly 42% of the faculty have applied for or inquired about a job outside of Rensselaer. Furthermore, 12% report taking an offer to their department head or dean. Nearly 40% considered it at least somewhat likely that they will leave Rensselaer in the next three years. No differences between men and women appear with respect to retention. Across schools, differences are striking. Scientists are significantly less likely (26%) to have applied or inquired about other positions, while faculty in all other schools are more likely to have inquired or applied (52% for engineering; 53% for HASS, and 53% for architecture/management). Top reasons for considering leaving include:

- Enhancing career (85%),
- Finding a more supportive work environment (77%)
- Increasing salary (72%).

Members of the Rensselaer faculty were generally less satisfied with their resources than with their benefits. Top-rated resources included clerical and administrative staff (3.85) and computer resources (3.7). Faculty judged themselves less than satisfied with many other aspects of their resources including Library resources (3.15), Building and Maintenance Infrastructure (3.10), Support for securing grants (3.10), and Research accounting (2.98).

Looking at their responsibilities, members of the Rensselaer faculty found their teaching and advising responsibilities satisfactory (3.86), but judged their time available for scholarly work (3.19) and their committee and administrative responsibilities (3.47) less so. Across schools, there were some significant differences.

- Engineers and scientists were significantly more satisfied and HASS and Management/Architecture more dissatisfied with their teaching responsibilities.
- Engineers were significantly more likely to be dissatisfied with their advising responsibilities.
- HASS and Management/Architecture more likely to be dissatisfied with time available for scholarly work.

Nearly one-third of the Rensselaer faculty, both men and women, report some direct or indirect knowledge of a hostile workplace climate, defined as “an uncomfortable or threatening environment due to aggressive behavior.” More than one in ten have personal experience with a hostile workplace.



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Overall, members of the faculty were less than satisfied with the mentoring they had received (2.67). About half judged it to have worked at least somewhat well, but over a quarter judged it to have been poor.

## Background

As one of the conditions for fulfilling our obligations under funding from the ADVANCE Program at the National Science Foundation, RAMPUp (Rensselaer's NSF-funded project for the reform of advancement processes) conducted a climate survey of Rensselaer tenure and tenure-track faculty in the spring of 2009.

The survey was designed to help us to understand the current climate for tenure and tenure-track faculty advancement at Rensselaer. It contained 32 questions on such topics as satisfaction, hiring and retention, mentoring, promotion & tenure, and workload.

### The Survey

The survey was based on the Core Faculty Survey Instrument developed by the Association of American Universities Data Exchange (AAUDE), a public service organization whose purpose is to improve the quality and usability of information about higher education. It has been extensively tested and validated.

### Response Rate

Survey data was collected via a secure link in SurveyMonkey between March 19 and April 10 of 2009.

The response rate for the survey was excellent. A total of 239 members of the tenure and tenure-track faculty responded, 67% of the 359 reached via a valid email address. This response rate is considered very good.

Of these responses, 212 provided usable data for analysis. Twenty responses were removed for having incomplete demographic information with respect to gender and rank, and another 7 (2 female and 5 male) were removed because respondents indicated that they did not classify themselves in the tenured and tenure-track ranks (Full, Associate, and Assistant).

### Demographics

Participation rates by gender are shown in Table 1; by rank in Table 2; by school in Table 3.



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	Men	Women	Total
#	180	59	212

Table 1: Participation by Gender

	Full	Associate	Assistant	Total
#	103	53	56	212

Table 2: Participation by Rank

	Science	HASS	Eng	Management/Architecture	Total
#	68	35	84	23	210*

Table 3: Participation by School

Women were more likely to response than men, as shown in Table 2.

\* 2 respondents did not answer the question about school affiliation.

## Analysis

The data have been analyzed using Chi-square analysis as follows:

1. Where benchmarks are available, comparisons have been made to these benchmarks. Because this survey has been used extensively elsewhere and partial reports have been made public for Harvard and Iowa State, these have been used as benchmarks.
2. Comparisons have also been made by gender.
3. Comparisons have been made by rank.
4. Comparisons have been made by school with data from the two smallest schools, management and architecture, combined.

Because of the low numbers of underrepresented minorities in the sample (3 African Americans and 8 Hispanics), the decision was made not analysis was done to analyze the date for patterns related to ethnicity. In terms of ethnicity, 74% of the respondents classified themselves as white, 15% as Asian, 5% as underrepresented minorities (African American + Hispanic), and 6% unclassified.



# Results

## Overall Satisfaction

Just over half (54%) of the surveyed faculty reported being at least somewhat satisfied with being a faculty member at Rensselaer. A large 40% reported being somewhat dissatisfied or very dissatisfied. The average satisfaction rate was 3.19 on a five point scale where 5 = very satisfied.

Comparing to available benchmarks, this is a strikingly low satisfaction rate. Harvard, for instance, reports that 79% of the tenure and tenure track faculty are at least somewhat satisfied with being a faculty member at their institution. At Iowa State University, over 60% of the tenure and tenure-track faculty report being satisfied with being a faculty member there and only one-quarter report being somewhat or very dissatisfied.

No difference appears between men and women in terms of overall satisfaction rate.

Significant differences do arise across ranks ( $p < .05$  with sum of  $\chi^2 = 15.19$  and  $df=8$ ). A large fraction of full professors, 46%, report being somewhat dissatisfied or very dissatisfied. For associate and assistant professors, the corresponding dissatisfaction rates are 42% and 29%.

Overall satisfaction also varies by school ( $p < .05$  with sum of  $\chi^2 = 16.88$  and  $df=8$ ). 58% of the faculty in engineering are at least somewhat satisfied, while 53% of the faculty in HASS are at least somewhat dissatisfied.

## Satisfaction with Compensation and Benefits

With two significant exceptions, members of the Rensselaer faculty reported general satisfaction with their compensation and benefits.

The top rated benefits included two family friendly benefits, the new Pinch Hitter Nanny Service (4.04) and the long-standing parental leave policy (4.03). The two lowest rated benefits included salary (3.18) and the tuition benefit (3.30).

No significant gender differences in satisfaction arose with most aspects of compensation and benefits except in the area of medical benefits. Women were significantly less satisfied with their medical benefits than men ( $p < .025$  with sum of  $\chi^2 = 11.43$  and  $df=8$ ). It was also the case that full and assistants were more highly



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satisfied than expected with medical benefits (4.07 and 3.91 respectively;  $p < .01$  with sum of  $\chi^2 = 95.97$  and  $df=8$ ).

Significant differences also arise across ranks in terms of salary ( $p < .001$  with sum of  $\chi^2 = 34.84$  and  $df=8$ ). Associate professors are significantly less satisfied than any other group with their salary (2.68), and assistant professors are significantly more satisfied than expected with their salary (3.62).

The pattern of lower satisfaction by the associate professors holds for almost all aspects of benefits including retirement, parental leave, and Pinch Hitter Nanny Service. The only exceptions to this pattern concerns the tuition benefit, which is rated poorly by all ranks; and Samaritan-Rensselaer Children's Center with which both full and associates seem more dissatisfied than the assistants.

Finally significant difference also arise across schools. Faculty in HASS were significantly less satisfied with salary ( $p < .05$  with sum of  $\chi^2 = 16.21$  and  $df=8$ ).

## Satisfaction with Resources

Members of the Rensselaer faculty were generally less satisfied with their resources than with their benefits.

Top-rated resources included clerical and administrative staff (3.85) and computer resources (3.7).

Faculty judged themselves less than satisfied with many other aspects of their resources, with less than half of the faculty judging them at least somewhat satisfactory and one-third or more finding them unsatisfactory. These include:

- Research accounting (2.98),
- Support for securing grants (3.10),
- Building and Maintenance Infrastructure (3.10), and
- Library resources (3.15).

Gender differences were also more common in the area of resources. Women were significantly less satisfied with their computer resources than men ( $p < .025$  with sum of  $\chi^2 = 16.80$  and  $df=4$ ). The average for men is 4.03; for women 3.56; a difference of .29. Women were also significantly less satisfied with support for securing grants than men ( $p < .05$  with sum of  $\chi^2 = 11.04$  and  $df=4$ ). The average for men is 3.17; for women 2.87; a difference of .29.

Satisfaction with resources was not significantly different by rank.

Significant difference do arise across schools:



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- Faculty in HASS were significantly less satisfied with classrooms ( $p < .001$  with sum of  $\chi^2 = 30.49$  and  $df=8$ ) and with library resources ( $p < .025$  with sum of  $\chi^2 = 18.42$  and  $df=8$ ).
- Engineers and scientists were significantly more satisfied with lab or research space than those in HASS ( $p < .01$  with sum of  $\chi^2 = 23.41$  and  $df=8$ ).
- Those in Engineering and Management/Architecture were significantly more satisfied with building and maintenance infrastructure than those in science or HASS ( $p < .001$  with sum of  $\chi^2 = 23.01$  and  $df=8$ ).
- Those in science were significantly less satisfied with computing resources ( $p < .025$  with sum of  $\chi^2 = 18.69$  and  $df=8$ ).

## Satisfaction with Responsibilities

Looking at their responsibilities, members of the Rensselaer faculty found their teaching and advising responsibilities satisfactory (3.86), but judged their time available for scholarly work (3.19) and their committee and administrative responsibilities (3.47) less so.

Gender differences arose in the area of teaching responsibilities. Women were significantly less satisfied with their teaching than men ( $p < .01$  with sum of  $\chi^2 = 15.41$  and  $df=4$ ). The average for men is 4.11; for women 3.65; a difference of .46.

Rank differences arose in the area of committee and administrative responsibilities ( $p < .025$  with sum of  $\chi^2 = 17.95$  and  $df=8$ ). Assistant professors are significantly more satisfied (3.78) with their committee and administrative responsibilities than are full (3.43) and associate (3.21) professors.

Across schools, there were some significant differences.

- Engineers and scientists were significantly more satisfied and HASS and Management/Architecture more dissatisfied with their teaching responsibilities ( $p < .01$  with sum of  $\chi^2 = 20.98$  and  $df=8$ ).
- Engineers also significantly more likely to be dissatisfied with their advising responsibilities ( $p < .01$  with sum of  $\chi^2 = 20.73$  and  $df=8$ ).
- HASS and Management/Architecture more likely to be dissatisfied with time available for scholarly work ( $p < .01$  with sum of  $\chi^2 = 25.33$  and  $df=8$ ).

# Retention

Questions of retention are a particularly sensitive instrument for gauging faculty climate: Have current members of the faculty considered leaving Rensselaer in the last three years? Do they think it likely they will leave in the next three years?



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In the last three years, nearly 42% of the Faculty have applied for or inquired about a job outside of Rensselaer. 12% report taking an offer to their department head or dean. Nearly 40% considered it at least somewhat likely that they will leave Rensselaer in the next three years.

No differences between men and women appear with respect to retention.

Significant differences in rank do appear ( $p < .05$  with sum of  $\chi^2 = 16.09$  and  $df=8$ ), with full professors being more certain about their plans and considering themselves more likely to leave, while associate professors are more uncertain and consider themselves less likely to leave.

Across schools, differences are striking:

- Scientists significantly less likely (26%) to have applied or inquired about other positions, while faculty in all other schools more likely to have inquired or applied (52% for engineering; 53% for HASS, and 53% for architecture/management;  $p < .01$  with sum of  $\chi^2 = 11.18$  and  $df=2$ ).
- Scientists are also significantly less likely to have taken an offer to their deans while those in Management/architecture were significantly more likely to have done so ( $p < .05$  with sum of  $\chi^2 = 6.56$  and  $df=2$ ).
- Scientists and those in management/architecture judged themselves significantly less likely to leave in the next three years than did those in engineering and HASS ( $p < .01$  with sum of  $\chi^2 = 20.46$  and  $df=8$ ).

Top reasons for considering leaving include:

- Enhancing career (85%),
- Finding a more supportive work environment (77%), and
- Increasing salary (72%).

## Climate of the Department

Questions addressing department climate probe the underlying reasons for satisfaction: do I have colleagues with whom to collaborate? Do I feel like I belong? Does my department head support me?

Responses to questions in this area suggest that overall, members of the Rensselaer faculty feel at least somewhat satisfied with the climate in their departments. Specifically, they agree that:

- their colleagues value their research/scholarship (3.92).
- they are satisfied with opportunities to collaborate both within the department (3.59) and across the institution (3.70).
- the department is a good fit for them (3.98).
- their department head creates a collegial and supportive environment (4.04), and helps them to obtain the resources they need (3.60).



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- they have a voice in the decision-making that affects the direction of the department (3.62), and can navigate the unwritten rules concerning how to conduct oneself as a faculty member (4.00).
- individuals can comfortably discuss personal and/or family responsibilities in their departments (3.83).

Finally, they do not believe that they are excluded from the informal networks in the department (2.00).

There are no gender difference in any of these climate measures.

There are significant rank and school differences:

- Full professors agree significantly more often that their colleagues value their research ( $p < .001$  with sum of  $\chi^2 = 33.48$  and  $df=8$ ). Those in engineering are significantly more likely to agree; those in science and HASS significantly more likely to disagree ( $p < .01$  with sum of  $\chi^2 = 24.96$  and  $df=8$ )
- Full professors agree significantly more often that that they are satisfied with opportunities to collaborate in the department ( $p < .001$  with sum of  $\chi^2 = 20.72$  and  $df=8$ ) and outside ( $p < .001$  with sum of  $\chi^2 = 23.88$  and  $df=8$ ). While there are no significant school differences concerning opportunities to collaborate in the department, those in management/architecture are significantly more likely to agree; those in HASS more likely to disagree ( $p < .01$  with sum of  $\chi^2 = 16.23$  and  $df=8$ ).
- Full professors agree significantly more often that that the department is a good fit for them ( $p < .001$  with sum of  $\chi^2 = 25.40$  and  $df=8$ ),
- Full professors agree significantly more often that that they have a voice in decision-making ( $p < .01$  with sum of  $\chi^2 = 23.89$  and  $df=8$ ), and
- Full professors agree significantly more often that that they can navigate the unwritten rules ( $p < .025$  with sum of  $\chi^2 = 18.95$  and  $df=8$ ).
- Full professors disagree significantly more often with the statement that they feel excluded from the informal network in the department ( $p < .01$  with sum of  $\chi^2 = 23.85$  and  $df=8$ ). Those in HASS are significantly more likely to agree with this ( $p < .01$  with sum of  $\chi^2 = 23.96$  and  $df=8$ ).
- Assistant professors significantly more often credit their department head with obtaining the resources they need ( $p < .025$  with sum of  $\chi^2 = 18.52$  and  $df=8$ ). Those in management/architecture are significantly more likely to disagree ( $p < .05$  with sum of  $\chi^2 = 16.4$  and  $df=8$ ).

## Harassment

Questions on various kinds of harassment were added to the AAUDE survey in light of earlier survey results suggesting that this is an issue at Rensselaer. Results suggest that a high proportion of the Rensselaer faculty feel that it is a hostile workplace.

Specifically, nearly one-third of the Rensselaer faculty, both men and women, report some direct or indirect knowledge of a hostile workplace climate, defined as “an uncomfortable or threatening environment due to aggressive behavior.” More than one in ten have personal experience with a hostile workplace.



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Environmental harassment, defined as “an uncomfortable or threatening environment due to unwelcome sexual behavior,” is less common with just 15% of the faculty reporting some direct or indirect experience.

Sexual harassment, the most egregious form of harassment, defined as “unwelcome sexual advances, requests for sexual favors, or other physical or expressive behavior of a sexual nature,” is just as common. Women, however, are far more likely to have direct or indirect experience with environmental harassment ( $p < .025$  with sum of  $\chi^2 = 12.83$ ). The average for men is 3.75; for women 4.36; a difference of .29.

There were no significant differences by rank. By school, significantly more of those in HASS reported direct or indirect experience with environmental harassment and of hostile workplace; those in management/architecture significantly less (environmental harassment:  $p < .01$  with sum of  $\chi^2 = 12.6$  and  $df=4$ ; hostile workplace:  $p < .001$  with sum of  $\chi^2 = 16.01$  and  $df=4$ ).

## Mentoring

Questions about mentoring looked at the experience of both the mentors and of the mentees, and covered both formally assigned mentors and more informal arrangements.

About half of the faculty (107 of 212) reported on their experiences as mentors, judging them to have worked out fairly well (2.03 on a 5-point scale where 1 = “very well”).

Those members of the faculty who had been assigned formal mentors judged the relationship as somewhat less successful (2.43), though those who experienced informal mentoring perceived it as more successful (2.21).

Those in management/architecture were significantly more likely to believe their informal mentoring had been either worked well (39%) or worked poorly (28%); those in science and engineering were significantly less likely to think it had worked poorly (7% for each;  $p < .01$  with sum of  $\chi^2 = 20.98$  and  $df=8$ ).

Overall, members of the faculty were less than satisfied with the mentoring they had received (2.67). About half judged it to have worked at least somewhat well, but over a quarter judged it to have been poor.

No gender differences were apparent in terms of mentoring.

## Promotion & Tenure

Questions about advancement process asked about the clarity of the criteria, and the fairness of the evaluation, both for promotion and tenure and on an annual basis.



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About half of the faculty agreed that the criteria for promotion and tenure were communicated clearly (3.30), but there were significant differences in the perceptions of men and women ( $p < .01$  with sum of  $\chi^2 = 17.97$  and  $df = 4$ ). Sixty percent of the men at least somewhat agreed that the criteria had been clearly communicated, whereas more than half of the women disagreed with this statement. Full professors were more likely to believe that the criteria were fairly communicated than the other ranks ( $p < .025$  with sum of  $\chi^2 = 18.20$  and  $df = 8$ ). Those in management/architecture were significantly less likely to agree ( $p < .01$  with sum of  $\chi^2 = 20.09$  and  $df = 8$ ).

Even large gender differences were evident in evaluations of the fairness of promotion and tenure. About 60% of the faculty at least somewhat agreed that the evaluation was fair (3.55), but only 31% of the women agreed (2.84), a significant difference ( $p < .001$  with sum of  $\chi^2 = 22.60$  and  $df = 4$ ). There was also a significant tendency for the full professors to believe the process was fair than for the other ranks ( $p < .001$  with sum of  $\chi^2 = 27.82$  and  $df = 8$ ). There were no differences across schools.

No gender, rank or school difference arose in connection with the fairness of annual evaluation. Overall, 65% of the faculty agreed that the annual review process was fair.

## Work-Related Stress

Questions about work-related stress ask members of the faculty to evaluate the level of stress that various aspects of the work have caused over the last twelve months.

Several aspects of work appear to cause the majority of the faculty considerable stress over the last twelve months:

- 86% of the faculty report at least some stress over securing research funding. This is distributed evenly across the ranks, but is significantly less in HASS ( $p < .01$  with sum of  $\chi^2 = 20.25$  and  $df = 4$ )
- 78% report at least some stress over department or campus politics. This is also distributed evenly across the ranks; but more common in science and HASS, less common in engineering ( $p < .01$  with sum of  $\chi^2 = 18.47$  and  $df = 4$ ).
- 79% of the faculty report at least some stress over scholarly productivity. Significantly more of this stress fall on the assistant professors and less on the full professors ( $p < .001$  with sum of  $\chi^2 = 21.63$  and  $df = 4$ ). This kind of stress is significantly less common in engineering ( $p < .01$  with sum of  $\chi^2 = 13.09$  and  $df = 4$ ).
- 79% report at least some stress over teaching responsibilities. Significantly more of this stress also fall on the assistant professors and less on the full professors ( $p < .001$  with sum of  $\chi^2 = 25.36$  and  $df = 4$ ). Significantly more of this stress if felt in HASS than in other schools ( $p < .025$  with sum of  $\chi^2 = 11.19$  and  $df = 4$ ).

More than half the faculty across all ranks also report at least some stress related to committee and/or administrative responsibilities (66%), significantly more common in HASS ( $p < .01$  with sum of  $\chi^2 = 13.34$  and  $df = 4$ ).



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Promotion and tenure (65%) is also a major stressor for assistant professors (87%) and associate professors (81%) ( $p < .001$  with sum of  $\chi^2 = 48.75$  and  $df = 4$ ), with significantly more stress in HASS ( $p < .001$  with sum of  $\chi^2 = 19.19$  and  $df = 4$ ).

Stress related to advising also significantly falls off the shoulders of the full professors ( $p < .01$  with sum of  $\chi^2 = 15.36$  and  $df = 4$ ).

Annual review causes significantly more stress for assistant professors (69%) and less stress for the full professors (41%) ( $p < .01$  with sum of  $\chi^2 = 13.42$  and  $df = 4$ ).

Gender differences arise with respect to two high-stress areas. Significantly more women report significantly higher stress related to scholarly productivity (88% vs 76% for men;  $p < .001$  with sum of  $\chi^2 = 28.03$  and  $df = 2$ ), and teaching responsibilities (89% vs. 75% for men;  $p < .01$  with sum of  $\chi^2 = 12.76$  and  $df = 2$ ).

Women also report significantly higher stress related to the timing of department meetings than men (47% vs. 26% for men;  $p < .001$  with sum of  $\chi^2 = 25.48$  and  $df = 2$ ) for whom this is a relatively low stress item. This kind of stress was significantly more common in engineering and HASS and significantly less common in science ( $p < .001$  with sum of  $\chi^2 = 20.00$  and  $df = 4$ ).

## Work-Life Accommodation

Questions about work-life accommodation look at the issues that can impact productivity and the utilization of policies intended to moderate their impact.

Nearly 40% of the faculty report that they have dealt with the birth or adoption of a child; 24% report dealing with significant family health crises; 20% indicate that they have struggled with serious personal health issues. Significant health issues appear more common in science (24%) and HASS (34%) than in engineering (13%) or management/architecture (9%;  $p < .01$  with sum of  $\chi^2 = 9.47$  and  $df = 2$ ).

Significant care for an aging parent affects the ranks in significantly different manners, with full professors taking on more (28%) and assistant professors reporting less (2%) ( $p < .001$  with sum of  $\chi^2 = 18.39$  and  $df = 2$ ). Providing kind of care is significantly lower in engineering ( $p < .05$  with sum of  $\chi^2 = 6.49$  and  $df = 2$ ).

The only policy in place targeted to life issues at Rensselaer is a parental leave policy. Of the faculty reporting birth or adoption of a child, 36% reported using the parental leave policy, but gender differences here were striking. 70% of the women who have experienced the birth or adoption of a child have taken parental leave, whereas only 24% of the men have, a significant difference in utilization rates ( $p < .001$  with sum of  $\chi^2 = 27.19$  and  $df = 1$ ). There is a significantly higher utilization rate among the assistant professors (71%;  $p < .01$  with sum of  $\chi^2 = 10.83$  and  $df = 2$ ). School differences are also striking with 60% of those in HASS using parental leave and 0% of those in management/architecture ( $p < .025$  with sum of  $\chi^2 = 7.53$  and  $df = 2$ ).



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Women were also nearly three times as likely to stop the tenure clock while on leave ( $p < .001$  with sum of  $\chi^2 = 12.16$  and  $df = 1$ ). This is more common among the associate professors and less common among the full professors ( $p < .001$  with sum of  $\chi^2 = 26.37$  and  $df = 2$ ). Stopping the clock was more common in HASS (35%) and less common in science (0%) and management/architecture (0%;  $p < .01$  with sum of  $\chi^2 = 7.14$  and  $df = 2$ ).

Sixty percent of the faculty reported that their departments were at least somewhat supportive. There were no gender or rank differences here, but striking difference by school, with faculty in engineering (70%), science (67%), and management/architecture (61%) reporting at least some support, and those in HASS reporting significantly less support (40%;  $p < .05$  with sum of  $\chi^2 = 15.42$  and  $df = 8$ ).

The survey also asked about the satisfaction of the spouse or domestic partner with his or her current employment situation. 56% of the faculty reported that their spouse/partner was at least somewhat satisfied, but 35% reported that the spouse/partner was at least somewhat dissatisfied. There were no gender, rank, or school differences here.

## Life-Related Stress

Questions about life-related stress ask members of the faculty to evaluate the level of stress that various aspects of personal and family life have caused over the last twelve months.

The leading cause of life-related stress for faculty is managing household responsibilities; 63% of the faculty report at least some stress in this area. Women, however, are subject to significantly more stress in this area; 76% report at least some stress from managing a household versus just 60% of the men ( $p < .001$  with sum of  $\chi^2 = 71.09$  and  $df = 2$ ). There are no differences by rank or school.

Stress from child-related issues is also common:

- Finding adequate childcare is a significantly more common source of stress for women (67% of women versus 26% of men;  $p < .001$  with sum of  $\chi^2 = 58.04$  and  $df = 2$ ). This kind of stress is significantly more common in engineering (52%) and management/architecture (42%) than science (27%) or HAS (22%;  $p < .0025$  with sum of  $\chi^2 = 11.66$  and  $df = 4$ ).
- Dealing with school-age children is a significantly more common source of stress for women (76% of women versus 43% of men;  $p < .001$  with sum of  $\chi^2 = 31.85$  and  $df = 2$ ).
- Dealing with serious illness in the family is a significantly more common source of stress for women (70% of women versus 51% of men;  $p < .01$  with sum of  $\chi^2 = 11.29$  and  $df = 2$ ).
- Dealing with your own health is a significantly more common source of stress for women (59% of women vs. 43% of men;  $p < .05$  with sum of  $\chi^2 = 7.61$  and  $df = 2$ ).

Interestingly, while helping grown children is a common source of stress (52% of the faculty report at least some stress), there is no difference between men and women. Caring for someone who is aging or has special needs is also a considerable source of general stress (41%), but this falls equally on men and women.



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Dealing with school-age children turns out to be a significant concern for associate professors (81% vs. 42% and 33% for full and assistants;  $p < .01$  with sum of  $\chi^2 = 15.70$  and  $df = 4$ ); whereas helping grown children is a significant concern for the full professors (65% vs 44% for the associates and 6% for the assistants;  $p < .001$  with sum of  $\chi^2 = 21.22$  and  $df = 4$ ).

Another factors inducing considerable stress was managing cost of living (51%), which was significantly more common in HASS (68%) than in other schools ( $p < .025$  with sum of  $\chi^2 = 13.07$  and  $df = 4$ ).