

# **Non-tenure Track Faculty in Chemistry**

## **A White Paper by the Women Chemists Committee**

### **Executive summary**

The following report is issued by the American Chemical Society's Women Chemists Committee (WCC). One of the goals of the WCC is to "take an advocacy position within the ACS on issues of importance to women in the chemical sciences." In this report, the committee seeks to advocate for a large, underrepresented and economically vulnerable group within the academy: non-tenure track faculty (NTTF). The statistics reported by the ACS for NTTF in chemistry is lacking the information necessary for the committee to fulfill its advocacy role.

The percentage of faculty who are not on the tenure track has been increasing over the last two decades, and policies that promote best practices in their employment remain lacking. The report outlines employment trends and the issues that face non-tenure track faculty as well as the departments in which they work. The report concludes with a list of nine recommendations for the ACS Board of Directors.

### **Main document**

#### **I. Purpose of this document**

In its role as an advocate for women in the chemical sciences, the Women Chemists Committee has prepared this document to give an overview of the status of non-tenure track faculty (NTTF), and the issues which are raised as a result of the large increase in NTTF in academia. More women work outside the tenure stream than in it, according to the AAUP report "Contingent Appointments and the Academic Profession" [1]. Considering full time faculty members only, 55% of lecturers are women whereas women comprise only 21% of full professors. Keeping abreast of the status of women in all areas in the chemical sciences and advocating for them where needed is an important function of our committee.

A lot of attention is being given to this issue nationally. There is evidence for this in the growing number of articles detailing the situation in academia, the increasing number of committees at various colleges and universities that are tackling the issue on their campuses, and the number of surveys being done to assess the trends in hiring. In addition, programming by the Younger Chemists Committee brought attention to this issue at the Fall 2008 National ACS meeting in Philadelphia.

The purpose of this white paper is to give an overview of the change in demographics in academia due to the rapid increase in non-tenure track faculty and to outline the

issues facing those faculty as well as college and university administrations. Where possible, data specific to the chemical sciences is detailed. Finally, we have proposed a list of recommendations to the ACS Board of Directors.

## II. NTTF demographics

Non-tenure track faculty are a growing segment in academia in the United States. According to an article in *Change*, “Today’s Majority: Faculty Outside the Tenure System,” by Judith M. Gappa [2], the number of non tenure-track faculty was 42% in 1975, so for more than three decades, non-tenure track faculty have had a large presence in higher education. However, the growth in that sector is increasing. According to the same article, only 27% of new faculty appointments were on the tenure track in 2000, and currently, across all academic institutions in the US, 60% of faculty are NTT.

According to the AAUP Report, “Trends in Faculty Status” [3], the following table shows the percentage increases during the period from 1975 to 2005:

Constituency	Full/Part-time	% increase from 1975 - 2005
Students	Full	60%
Faculty in tenure stream	Full	17%
Faculty not in tenure stream	Full	223%
Faculty not in tenure stream	Part	214%
Administrators	Full	101%

According to the ACS 2008 Salary Survey data [4], of the 7,500 respondees, 26% work in academia. Of those, 14% (273 members) identify themselves as NTT, 67% as tenure-track or tenured, and the remainder reported “non-applicable.” If the survey was a statistically valid sampling of the ACS membership of 156,000 (and indeed it does not claim to be so), that would indicate that over 5,000 ACS members are non-tenure track faculty. Again, the ACS salary survey does not claim that this scaling argument is valid, but the 273 NTTF and ACS members who answered the survey is a helpful reference point.

The ChemCensus 2005 survey [5] shows that, as a percentage, NTTF in chemistry comprise a larger percentage of total faculty at PhD granting institutions than they do at BA/BS or MS-granting institutions. Considering only full-time faculty in chemistry, 34% of faculty at PhD granting institutions are NTT, whereas they are less than 10% of the total number of faculty at non-PhD granting institutions. It should be emphasized that this survey is of ACS members in the workforce, and ACS membership is not necessarily representative of the actual population of TTF or NTTF in chemistry and chemical-engineering departments nationwide. Furthermore, according to the ACS Report “Women Chemists 2000,” 37% of women chemists in academia are off the tenure-track [6], and “in all institutions, women were more proportionately represented in positions of instructor or not part of the professor ranks than men.” [7]

Reasons for this large shift in employment data toward faculty outside the tenure stream in chemistry include, in no particular order, the:

- a) expense of hiring new assistant professors, especially with regards to start-up packages.
- b) trend in replacing a newly retired professor who carried a larger teaching load with a new assistant professor carrying a smaller teaching load.
- c) increase in student enrollment in colleges and universities.
- d) greater demands on teachers with the integration of technology in the classroom which calls for a practitioner of the profession that can devote his or her full time to the task.
- e) demands on teachers due to increasing diversity in the classroom (Americans with Disabilities Act, students with learning differences, age-diverse classes, and multicultural student populations).
- f) demands on researchers which calls for a practitioner of the profession that can devote his or her full time to the task.
- g) trend in recent graduates to seek employment that allows for a greater work-life balance.

One of the challenges in gathering information about NTTF in any discipline is the different titles that are used in the employment of this group. Whereas faculty in the tenure stream (TTF) are referred to by a mere three titles, the titles abound for NTTF: instructors, lecturers, “modified” assistant/associate/full professors (eg, teaching or research assistant professors), visiting, and adjunct. Additionally, NTTF include both full-time and part-time employment. There are also a myriad of differences among NTTF. Some but not all have:

- 1. faculty rank.
- 2. participation in governance within the institution.
- 3. the same benefits as TTF.
- 4. opportunities for promotion along a “teaching track” or a “research track.”

NTTF are employed at all types of undergraduate and graduate institutions. While it is typical that their job descriptions are primarily teaching or research, they can have a variety of responsibilities and expectations beyond the classroom or lab, and this makes for difficulties in comparing workloads. At one institution, a lecturer may have 10 contact hours, be considered full-time, and hold a 9-month, academic appointment, while another NTTF with a similar teaching load will be considered part-time, paid on a per-course basis, and may hold positions at multiple institutions.

A recent article in *Chemical & Engineering News* [8] highlights lecturers at Brandeis University, Harvard University, Wake Forest University, and the University of Texas-Tyler. Differences abound in contract length, teaching loads, and the sense of collegiality and institutional culture. The sheer volume of differences among NTTF makes this issue difficult to address with one simple set of policy statements.

### **III. Issues facing NTTF**

Just as with TTF, some faculty off the tenure track may enjoy certain benefits, but they also face challenges. As mentioned above, NTTF often deliberately choose academic employment off the tenure track because the work demands better mesh with their desire to pursue a single passion (teaching or research) while allowing a better work/life balance. A variety of studies [2] show that NTTF are generally satisfied with their chosen profession and institution. But areas in which there is dissatisfaction (even if the level of dissatisfaction is low) becomes amplified now that 60% of all faculty in the US, across all disciplines and institutions, are NTTF.

Some of those issues that NTTF face are:

- Employment security
- Pay incommensurate with degree or other faculty in the department
- Lack of benefits—even if they carry a load that most would consider full time
- Governance
- Lack of opportunities for professional development
- Isolation and lack of fit in department
- Job expectations
- Professional support

#### **a) Employment security**

Non-tenure track faculty hold contracts ranging from as short as one semester to as long as five years. In the University of California system [9], there is opportunity for NTTF to be appointed to positions with “security of employment,” which is on-going until the individual retires or resigns. As in the tenure-track, NTTF can be dismissed for cause, but otherwise, there is no end-date of the employment. Such a policy is also being considered at the University of Colorado, called the “Instructor Tenure Project.” [10]

The AAUP Committee Report on Nonreappointment & Full-Time Renewable Term Appointments [11] provides a standard for notification of non-renewal of probationary contracts (which typically applies to TTF only) that is a minimum of 3 months for faculty who have worked less than one year at the institution, and up to 1 year of notification for those faculty who have worked 2 or more years at the institution. The AAUP does not take the position that universities should hire faculty into continuing, non-tenure track appointments, and hence those guidelines do not *officially* apply to them. Nonetheless, the AAUP does add a closing line to the document outlining this

policy that provides the expectation that universities give ample notice for non-renewal regardless of the type of faculty position:

“Committee A considers all full-time faculty members holding renewable term appointments, whatever their title or status, to be entitled to notice of nonreappointment as called for in the Association’s recommended standards. We do not view it as necessary, or indeed as equitable, to deprive full-time ‘non-tenure-track’ faculty members of the safeguards that the standards for notice are intended to provide.”

Universities can and do use the contract end date as “timely notice.” Hence, even though there may be expectations for renewal, there may be little to no warning of non-renewal.

A related issue then becomes the opportunity to grieve a contract when it is not renewed. Again, university grievance procedures normally apply only to the tenure-track system, and for a non-tenure track faculty member whose contract is allowed to expire (end date = timely notice), there is not normally a grievance procedure that applies to them. This becomes an issue, however, since many universities use non-tenure track faculty on a continual basis where contracts are renewed year-after-year, on a seemingly automatic basis. There may be no warning signals that a subsequent contract will not be forthcoming. For example, if enrollments are steady, if curricula do not change, including general education requirements and departments are maintaining a steady-state of faculty, then there may be no reason not to expect continued employment. Thus a notice of non-renewal could appear sudden and arbitrary. The November-December 2008 issue of *Academe: Bulletin of the AAUP* details three individuals who found themselves in such situations [12].

One such individual is Ms. Maureen Watson, an instructor in the Department of Mathematics and Computer Science at Nicholls University in Thibodeaux, Louisiana, who was dismissed one day prior to the end of her contract [13]. She had worked for twelve years under annual (9-month) appointments. The initial reason given for her dismissal was two-fold: budgetary constraints and a reaction to a recent report from the Southern Association of Colleges and Schools that the department had hired too many of its own graduates to teach mathematics. When the instructor sought an explanation from Dr. Stephen Hulbert, President of the University, she was told that her contract did not require notification of non-renewal, nor a reason for non-renewal. According to the AAUP investigative report, the more plausible reason for her dismissal was the large percentage of low grades in her algebra course. There had been considerable discussion of improving passing rates of Nicholls University’s students, but Ms. Watson felt her expectations of her students were reasonable, and her colleagues concurred. Furthermore, she had earned the highest rating of “meritorious” in her Department Head’s review every year. The university maintains its actions were in accordance to its policy that non-reappointments may not be appealed. As the AAUP details, this case brings to the fore the problems NTTF have with the lack of due process, due notice, and academic freedom.

The opportunity to grieve would hold both the faculty member *and* the administration to high standards, if used properly. In the University of California system, grievance hearings for NTTF with “security of employment” exist [9].

**b) Compensation**

According to the ACS 2007 Employment and Salary Survey [14], non-tenure track faculty described as instructors and adjuncts earned an average 9-month salary of \$40,600 at non-PhD schools, and \$46,000 at PhD-granting schools. The next “tier” of faculty salaries in that survey was for assistant professors whose corresponding averages were \$50,000 and \$65,000. The number of years of experience in higher education (years beyond graduate and post-graduate education) was not published for these two groups, but it could very well be the case that the instructors and adjuncts on average have worked longer than assistant professors, who would presumably have an average of 3 years of experience.

The ACS 2008 Salary Survey [4] shows the following:

Table 1.  
*Mean, Median, 25<sup>th</sup> Percentile, and 75<sup>th</sup> Percentile Salaries by Tenure Status*

Salary	Tenured	Not tenured, but in tenure track	Not tenured, not in tenure track	Not applicable
Mean	\$95,738	\$62,863*	\$63,629*	\$50,103
25 <sup>th</sup> percentile	\$66,000	\$51,000	\$40,000	\$35,000
Median	\$85,000	\$59,000	\$55,446	\$44,333
75 <sup>th</sup> percentile	\$114,000	\$71,550	\$78,000	\$62,000

These results are averages of 1,950 respondees who are employed in academia. Here, non-tenure track includes a wide variety of individuals, not just instructor/adjunct (see Table 2)

Table 2.  
*Crosstabulation: Academic Rank and Tenure Status*

Academic Rank	Tenured	Not tenured, but in tenure track	Not tenured, not in tenure track	Not applicable
Full professor	93.1%	0.5%	3.7%	2.8%
Associate professor	83.1%	6.3%	6.0%	4.6%
Assistant professor	10.3%	75.7%	9.7%	4.3%
Instructor, adjunct	5.2%	4.5%	65.2%	25.2%
Research appointment	1.1%	0.0%	44.1%	54.8%

Other non-faculty	3.9%	0.7%	17.0%	78.4%
No ranks	36.4%	14.5%	10.9%	38.2%
Secondary teacher	47.2%	13.7%	2.5%	36.6%

Note in Table 1 (highlighted cells) the interesting comparison between the mean salaries of not tenured, but in the tenure track and the NTT group. The NTT group's mean of \$63,629 is *greater* than that of the tenure stream group. This average includes individuals who are in non-research appointments with academic rank of assistant, associate, or full professor. This group presumably includes NTTF with titles such as Teaching Assistant Professor. There are two points to be made about salary surveys and the many titles, ranks and positions of NTTF. First, the trends in salaries for this group could be clarified if NTTF were first divided into research, teaching, and other categories. Second, if averages were then taken among all ranks, not just the instructor/adjunct rank, what would hopefully emerge, given a large enough sample size, is a clearer picture as to the potential for advancement along teaching and research tracks. Individuals or departments could then make meaningful comparisons to an actual benchmark. As it stands, typical salary surveys published by C&EN only include an "instructor/adjunct" category for NTTF and it is unclear if that category includes other tracks or ranks within NTTF. This leads to inaccuracies in self-reported data with a group whose ranks and titles are so varied. Chemistry departments wishing to justify salary lines may thus be using depressed averages.

The AAUP also publishes average salaries [15] which, unlike the ACS data, make a distinction between lecturers and instructors. Data from 2007 shows the average instructor salary at doctoral institutions to be \$46,321, while that of lecturer was \$51,404. That difference in averages of about \$5000 remains even if the data is averaged over all institution types. The US Department of Education report titled "Employees in Postsecondary Institutions, Fall 2007, and Salaries of Full-Time Instructional Faculty, 2007-2008 [16], includes average salaries for the traditional TT ranks, plus instructor, lecturer, and those with non-academic rank (staff). The average salary for each of the latter three categories is \$52,000 (averaged to the nearest thousand), for full-time instructional faculty at Title IV degree-granting institutions.

Table 3. 2007 Salary Data (9-month salary/full time) at PhD-granting schools

Source	Discipline	Rank	9 month Salary
ACS [14]	Chemistry	Instructor/Adjunct	\$46,000
AAUP [15]	All	Lecturer	\$51,404
AAUP [15]	All	Instructor	\$46,321
US DOE [16]	All	Instructor	\$51,633
US DOE [16]	All	Lecturer	\$51,552

In looking at the data in Table 3, it is clear that we need a more detailed breakdown in the salaries reported by the ACS in order to make meaningful comparisons to the AAUP and DOE data. It is an unusual finding that chemistry instructors earn less on average than their counterparts in other disciplines. What is needed is a comprehensive study of salary data of NTTF in chemistry regardless of membership in the ACS. If this were done, a side by side comparison of ACS, AAUP, and DOE data would be realistic.

### **c) Benefits**

Statistics on benefits are lacking for NTTF. Many institutions give the same level of retirement and health benefits for full-time NTTF that they do TT faculty. According to the University of Michigan report “Non-Tenure Track Faculty: Where Commonly Held Beliefs and Research Diverge,” [17] the executive summary indicates that “for the most part, FT-NTT faculty receive benefits in a manner that is close to that of tenure track faculty.”

The most marginalized group are those NTTF who piece together part-time teaching positions at more than one institution and are left without benefits. While there certainly is a place for part-time employment, especially with unpredictable enrollments and budgets, there most likely is over-reliance by some departments on them, preferring to hire multiple part-time faculty instead of fewer full-time faculty to reduce benefit costs.

### **d) Governance**

Non-tenure track faculty are not always included in the governance at their institutions. From the University of Michigan report [17], Table 11 shows that just over 20% of FT-NTT and over 60% of PT-NTT are not eligible to participate in governance in their academic senates. Those percentages decrease to about 5% and 35%, respectively when it comes to department governance.

While it is inappropriate for NTTF to be included in discussions of tenure and promotion, there is no compelling reason to exclude NTTF input in other decisions, to the extent to which faculty discuss and vote on those issues. Again, regardless of tenure track status, and especially if one has faculty rank, it stands to reason that they have the requisite experience to make good judgments for a host of other issues. If a university is going to trust their students to be taught by these faculty, then they should be used in an integrated way within the governance of the academy. In institutions where there is heavy reliance on NTTF, this becomes even more critical, because without full participation of this group, there will be less continuity and knowledge of institutional norms from year to year.

### **e) Lack of Opportunities for Professional Development**

While Research Assistant Professors may be eligible and have funding to present at conferences, few NTT teaching faculty have the opportunity to travel to conferences. Most NTT teaching faculty do not have external funding sources, and at some institutions, do not qualify to apply for internal sources, according to the AAUP [18].

Opportunities to be formally mentored by another faculty member are not always afforded to NTTF. NTTF may therefore not even be aware of professional development opportunities within their institution.

This is another area where the ACS can play a significant role. Local sections can become more relevant to non-tenure track faculty with appropriate programming and networking opportunities.

### **f) Lack of fit, lack of respect, feeling undervalued, and isolation**

NTTF's lack of fit is frequently cited as a top area of concern, as is the respect they receive from colleagues. At NC State University, the results of the comprehensive Faculty Well-Being Survey [19], when broken down by academic profile, indicates that NTTF are more than twice as likely to strongly disagree with the statement "I feel valued in my department" than do their colleagues in the tenure stream. Feeling isolated is especially exacerbated when there are few NTTF within a department. While much harder to quantify, the feelings of "not being a good fit" can be just as much of a concern for NTTF and impact their productivity.

### **g) Expectations**

A related issue is the misalignment of department expectations with the ability of the NTT faculty member to meet those expectations. A university may rightly want and expect a NTT faculty to remain abreast of the latest developments in their field, but if the teaching load is onerous, and if there is a complete lack of professional development opportunities, this expectation is unreasonable. Part of what is needed in moving NTTF out of the shadows in higher education is to have a re-alignment of institutional expectations. The faculty member has a responsibility to keep current, and to prioritize their time in order to attend seminars, read journals, and go to professional meetings. However, this should be a shared commitment between the institution and the faculty member.

### **h) Professional Support**

The final issue that faces NTTF is lack of professional support. While each of the following examples is seemingly minor, they negatively impact morale and ability to perform a job well:

- No office, desk, phone, computer, or office supplies.

- Lack of access to building and laboratories.
- No name plate on office door.
- Name omitted from department directories (web pages, listserv, office directory).
- Not being invited to faculty development workshops.
- Not being invited to social gatherings.

All of this adds up to a lack of respect and marginalizes NTTF who feel that they are on the lower level of a two-tiered system.

#### **IV. Issues facing departments and institutions**

From the departmental standpoint, NTT teaching faculty are primarily hired to address increasing numbers of students and classes. The most obvious pressure that NTTF alleviate is labor costs. Considering that NTTF generally teach introductory classes with larger enrollments, while TTF teach upper level classes or graduate classes with smaller enrollments, the cost per student for NTTF can be dramatically less.

NTTF also offer the department a specialist who oftentimes has a good track record in quality teaching or research and mentoring, and their positions are solely or largely devoted to this task. This in turn takes pressure off of research-active TTF who can focus on their research programs. From this standpoint, it is a win/win situation for departments, especially in departments where NTT teaching faculty are encouraged to pursue scholarly activities (where the word scholarship here is the same as that used by the ACS), and where NTT research faculty teach in the department curriculum.

This trend toward taking what are considered more “ordinary” tasks and creating another band of professionals to do them has also occurred in the field of medicine. As physicians become increasingly specialized and with ever decreasing numbers of primary care physicians, at least two new types of professionals have emerged: the nurse practitioner (NP) and physician assistants (PA). Both of these health care providers diagnose patients and write prescriptions as a physician would. They not only work in the field of family medicine and internal medicine, but oftentimes perform routine checkups of patients in specialized fields such as orthopedics. There are pressures in the health care system to drive down cost and provide more access, and this parallels the phenomenon in academia. The one large difference that should be duly noted is that at many institutions, the majority of NTTF hold the same end-degree (PhD) as TTF, and oftentimes even have post-doctoral experience prior to entering the workforce, whereas PAs and NPs do not hold the degree of Medical Doctor.

But the advantages that departments gain in hiring NTTF also come with implications that never had to be considered when the majority of faculty was within the tenure stream. The most alarming one, at least to the AAUP, is in the area of academic

freedom. The AAUP has addressed this issue quite thoroughly, and the reader is referred to documents listed in the bibliography [20].

A second, unwanted consequence in some departments is a bifurcation of the faculty, with NTTF forming a group of “second-class” citizens, a phenomenon that is well documented in the book *Invisible Faculty: Improving the Status of Part-Timers in Higher Education* [21]. This bifurcation can be avoided when faculty work together as a group toward the mission of the college or university, recognizing that different members of the department have different roles toward that end. It is paramount that the academic leaders of the institution set the tone for unity and respect of all faculty. The role that NTTF plays in the governance at the department level and up to the university level differs at different institutions. Not all NTTF have voting rights, nor is their input necessarily asked for on committees. This only perpetuates the negatives of a bifurcated faculty. A university that trusts the dissemination of knowledge or the complexities and safety of running a laboratory program to NTTF should find it beneficial that those same individuals play important, or in fact lead roles on committees that craft, for example, safe lab practices or curriculum decisions.

Another issue facing departments is the balance of teaching loads, especially when there are multiple NTTF with varying job responsibilities. In some departments, NTTF have advisees and/or other administrative responsibilities, while in others they are primarily there to teach undergraduates. In some departments, the teaching load that constitutes a full-time position is reasonable, while in other colleges, the NTTF is carrying the same load and yet it is deemed part-time.

Some universities have policies whereby NTTF can only be dismissed for cause, while other NTTF work on semester-by-semester or yearly contracts with less certainty about renewal and oftentimes no warning about non-renewal. Institutions should be required to provide adequate safeguards for NTTF in employment practices.

Another area where NTTF treatment varies by institution is in promotional opportunities. Some institutions offer little to no variation in title or rank with increasing experience and proven track records. Some institutions do not even have codified procedures for performance evaluations and merit pay increases for NTTF.

The study of Baldwin and Chronister [22] provides a helpful framework that summarizes three different ways in which institutions which hire NTTF view them:

- *The alternative career track model*  
Faculty in this model have positions similar in scope to TTF but without the prospect of tenure. Rather, they have renewable contracts with opportunities for advancement and sabbaticals.
- *The integrated career track model*  
Faculty in this model are hired for a more narrowly defined range of tasks and complement the TTF in their skill sets.

- *The marginalized career track model*  
Faculty in this model are hired to fill a specific purpose and the positions are crafted to provide the institution with the most flexibility with the least cost. Sabbatical replacements would fit in this model.

Faculty in the marginalized model have less respect, few benefits, low salaries, no job security, and no hope for conversion to TT or for advancement, whereas faculty in the first two models fair better in some or all of these areas.

From the departmental standpoint, the increase in numbers of NTTF has created a new dynamic, and again, institutions and departments vary widely on the inclusion of and opportunities afforded to NTTF. There needs to be an evaluation of the appropriate mix of TTF and NTTF, but this is best done at the local level within departments. The ACS can, however, require that departments who wish to become or remain ACS certified have a particular percentage of faculty that are TT and that policies for NTTF follow best employment practices.

The concluding section will outline a variety of recommendations to address these issues. The landscape has changed, and employment practices have changed along with it, but there remains a lag in employment policies. Addressing this issue not only benefits NTTF, but also provides more stability and continuity to institutions that employ them.

## **V. Conclusions and recommendations**

The hiring patterns in higher education have undoubtedly changed. The financial pressures on colleges and universities to trim budgets while meeting increased enrollments, higher demands by students, an increasingly diverse student population, and a teaching environment that requires ongoing adjustments and familiarity with technology in order to deliver high caliber courses and up-to-date laboratories. There is a need and a place for non-tenure track faculty in the system, and there is also a need for universities to adapt policies that fit the new paradigm. The proportion of non-tenure track chemistry faculty will be different at different institutions. Non-tenure track faculty bring a great focus to the enterprise of the academy. They are a tremendous human resource that is underutilized, especially at institutions where shared governance has not been the model. However, non-tenure track faculty have been ill-treated by institutions where teaching loads are extraordinary, benefits are withheld, department faculty lack collegiality, grievance processes are nonexistent, and there remains a dearth of professional development opportunities.

The WCC has a keen interest in learning what percentage of NTTF in chemistry are women. One of the goals of the WCC is to advocate for women, and without data, it is impractical to engage in advocacy efforts for women in this group. The ACS has done

an excellent job of monitoring issues that affect women within the tenure stream over the last decade, and this white paper is a call for the same to be done for women outside the tenure stream.

The ACS can bring this issue of the proper role of NTTF to the national level so there can be discussion of policies and sharing of best practices. The following list of recommendations from the WCC committee are specific steps the society can take to improve the treatment of these faculty who have heretofore been largely left out of academic policy and guidelines, even those published by the ACS. The committee hopes that this is the beginning of a fruitful discussion and shift in policy that will drive national change to improve undergraduate instruction and the opportunities for NTTF in higher education. The next generation of students and future ACS members of this cohort deserve our consideration.

We urge the ACS to form a NTTF task force to address and implement the following recommendations.

### **Recommendations for what the ACS can do:**

- 1) Be an advocate and direct or provide a way for a national conversation in academia.
- 2) Expand and update the academic employment guidelines to include NTTF.
- 3) Issue guidelines that must be met in order for a department to remain ACS certified for those departments that hire NTTF.
- 4) Consider an award for *college* teaching (such as already exists for high school teaching)—this could even be a travel award or there could be awards given at the local section level.
- 5) Leverage other groups ACS interfaces with to provide professional development opportunities (such as COACH workshops [23] for NTT faculty as they currently have for assistant professors, tenured faculty, and post docs).
- 6) Provide communication outlets and bulletins for the NTT community within the ACS (such as the member network).
- 7) Sponsor a workshop for college and university administrators on this topic.
- 8) Make sure that *C&EN* articles citing academic workforce data includes, where possible, non-tenure track data.
- 9) Monitor and report on the gender distribution of college educators of all ranks and positions, not just those within the tenure stream.

## **Appendix I.** About the authors

Laura Sremaniak is a councilor from the NC Local Section and a WCC member since 2005. After graduating with a PhD in theoretical chemistry from the University of North Carolina-Chapel Hill in 1996, she began working as a Visiting Assistant Professor in the chemistry department at North Carolina State University. She is now a Teaching Associate Professor. Although her primary responsibilities include teaching physical and computational chemistry, she remains research active, collaborating with another chemistry colleague. She has held an elected position on the Faculty Advisory Committee (advising the Chair). She currently serves on both department and university committees, advises students, and is a faculty advisor to Alpha Chi Sigma.

Gail H. Webster received her PhD in chemistry from North Carolina State University in 1994. After completing graduate school, she began her teaching career at the North Carolina School of Science and Math, where she held a full-time temporary position. She then worked in several non-tenure track positions at North Carolina State University, The University of the Sciences in Philadelphia and Guilford College. As an NTTF at Guilford, she served as an academic advisor and was appointed to a college-wide committee. In 2007, Gail was appointed to a tenure track assistant professor position. She is currently in her sixth year of employment at Guilford College in Greensboro, NC and will submit her portfolio for tenure in the fall of 2009. Gail is an Associate Member of the Women Chemists Committee and an active member of the Central North Carolina Section.

## Appendix II. Special Data Request of the ACS: Non-tenure Track Faculty

### Special Data Request: Non-Tenure Track Faculty

#### A Response Coordinated by the ACS Department of Member Research & Technology October 1, 2008

### Background

On September 10, 2008, Dr. Eric Bigham requested data regarding non-tenure track (NTT) faculty at the college and university level. Specifically, the request was for the:

- 1) Number of ACS members who fall into the rank of non-tenure track, whose titles may range from lecturer, instructor, adjunct, teaching assistant/assoc/full professor, research assistant/assoc/full professor, etc.
- 2) Type of contracts, salary, benefits, opportunities for professional development.
- 3) Impact that NTT faculty have on ACS certification.
- 4) Potential revisions of the Academic Employment Guidelines.
- 5) Number of schools who lose ACS accreditation for BS programs.

This response has been prepared by a team of ACS staff based upon their areas of responsibility and expertise. It includes three sections: (1) ACS Member Data; (2) ACS Certification / Accreditation; and (3) ACS Academic Professional Guidelines.

### ACS Member Data

The ACS conducts an annual ACS member salary survey and a quintennial ChemCensus. The 2008 salary survey data have been used for this response, because they provide the most recent data (the last ChemCensus was in 2005). The salary survey does, in fact, attempt to quantify the number of ACS members who fall into the rank of tenure and non-tenure tracks, as well as those who hold different titles (e.g., full professor, associate professor, adjunct, etc.). Similarly, the survey attempts to capture some data about types of contracts and salaries. The salary survey does not collect data regarding benefits or opportunities for professional development<sup>1</sup>.

Approximately 20,750 ACS members were invited to participate in the 2008 salary survey. Nearly 7,500 invitees (about 36%) actually participated. It is important to note that the 2008 ACS salary survey data reflects only the

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<sup>1</sup> The 2009 ACS member salary survey will ask a few abstract questions about healthcare, perhaps too general in nature to be used for this purpose. An analysis can be performed this time next year if requested.

responses of those who were invited and agreed to participate in the survey. They cannot be used as a basis from which to make scientifically valid and reliable generalizations to the entire ACS membership. These data can, however, be used as a useful point of reference.

About one-quarter (26%) of survey respondents were employed in academia. Among these:

- 52.5% are tenured
- 14.4% are not tenured but in tenure track
- 15.1% are not tenured and not in tenure track
- 16.7% reported “not applicable”
  
- 66.4% are employed by a public institution
- 33.6% are employed by a private institution
  
- 33.1% are full professors
- 17.5% are associate professors
- 15.1% are assistant professors
- 7.7% are instructors or adjunct professors
- 8.7% work under non-teaching research appointments
- 7.5% are other non-faculty
- 2.2% are not ranked
- 8.1% are secondary teachers

Among survey respondents employed by academia, full and associate professors are more likely to be tenured. This is illustrated in Table 1.

Table 1.  
*Crosstabulation: Academic Rank and Tenure Status*

Academic Rank	Tenured	Not tenured, but in tenure track	Not tenured, not in tenure track	Not applicable
Full professor	93.1%	0.5%	3.7%	2.8%
Associate professor	83.1%	6.3%	6.0%	4.6%
Assistant professor	10.3%	75.7%	9.7%	4.3%
Instructor, adjunct	5.2%	4.5%	65.2%	25.2%
Research appointment	1.1%	0.0%	44.1%	54.8%
Other non-faculty	3.9%	0.7%	17.0%	78.4%
No ranks	36.4%	14.5%	10.9%	38.2%
Secondary teacher	47.2%	13.7%	2.5%	36.6%

About two-thirds of survey respondents employed in academia (64.1%) are under a 9 or 10-month contract compared to about one-third (30.6%) who are under 11 or 12 month contract. A crosstabulation of contract periods according to tenure status appears in Table 2.

Table 2.

*Crosstabulation: Contract Period and Tenure Status*

Contract Period	Tenured	Not tenured, but in tenure track	Not tenured, not in tenure track	Not applicable
9-10 month	64.1%	19.3%	8.5%	8.2%
11-12 month	30.6%	5.9%	25.5%	38.0%

Finally, median salaries for non-tenured faculty are roughly the same regardless of non-tenure track, as depicted in Table 3 below.

Table 3.

*Mean, Median, 25<sup>th</sup> Percentile, and 75<sup>th</sup> Percentile Salaries by Tenure Status*

Salary	Tenured	Not tenured, but in tenure track	Not tenured, not in tenure track	Not applicable
Mean	\$95,738	\$62,863	\$63,629	\$50,103
25 <sup>th</sup> percentile	\$66,000	\$51,000	\$40,000	\$35,000
Median	\$85,000	\$59,000	\$55,446	\$44,333
75 <sup>th</sup> percentile	\$114,000	\$71,550	\$78,000	\$62,000

**ACS Certification / Accreditation**

The ACS Guidelines for approval of bachelor's degree programs do not include a specific requirement concerning the number of non-tenure track faculty. The guidelines do state that "Full-time, permanent faculty should teach the courses leading to student certification...", but these faculty may not be tenure-track. The ACS Guidelines also state that "The Committee [on Professional Training] strongly discourages ... excessive reliance on temporary, adjunct, or part-time faculty....". In the review of chemistry programs, CPT comments on these situations, but this situation does not lead to probationary action or loss of ACS approval. Under the new guidelines, all comments about faculty status will be included in the letter that is sent to the president of the college or university as well as the chair of the chemistry program.

CPT is currently developing a faculty status survey of all chemistry programs in the U.S. (approved and non-approved). One of the primary goals of this survey is to identify who (tenure-track, non-tenure track, temporary, TAs) is teaching chemistry courses at various points in the curriculum (introductory chemistry for majors, other introductory chemistry, organic chemistry). The survey also includes some questions (Y or N) about the availability of a number of benefits and support for non-tenure track and for temporary faculty. The list of questions includes availability of professional development, support for travel to

professional meetings, eligibility for institutional research grants, retirement plan, life insurance, and so on. The survey does not request numerical information on salaries, travel funds, etc. CPT will send this survey out to chemistry departments in 2009.

### **Academic Professional Guidelines**

Regarding Academic Professional Guidelines (APG). The APG has been revised. It was presented to Council at the Fall 2008 ACS National Meeting in Philadelphia for consideration. It is scheduled for vote at the Spring 2009 ACS National Meeting in Salt Lake City. The revised APG are included as a separate document.

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