Stress and Morale of Academic Biomedical Scientists
Warren L. Holleman, PhD, Ludmila M. Cofta-Woerpel, PhD, and Ellen R. Gritz, PhD

Abstract
Extensive research has shown high rates of burnout among physicians, including those who work in academic health centers. Little is known, however, about stress, burnout, and morale of academic biomedical scientists. The authors interviewed department chairs at one U.S. institution and were told that morale has plummeted in the past five years. Chairs identified three major sources of stress: fear of not maintaining sufficient funding to keep their positions and sustain a career; frustration over the amount of time spent doing paperwork and administrative duties; and distrust due to an increasingly adversarial relationship with the executive leadership. In this Commentary, the authors explore whether declining morale and concerns about funding, bureaucracy, and faculty-administration conflict are part of a larger national pattern. The authors also suggest ways that the federal government, research sponsors, and academic institutions can address these concerns and thereby reduce stress and burnout, increase productivity, and improve overall morale of academic biomedical scientists.

In 2010, through our involvement with the University of Texas MD Anderson Cancer Center’s Faculty Health and Well-Being committee, we sensed a decline in the morale of our faculty physicians and began visiting clinical departments to discuss the problem of physician burnout. They told us that internal factors such as increased productivity targets, decreased job autonomy, and cumbersome paperwork contributed to this problem. We shared with them that their experience was apparently part of an unfortunate nationwide trend. Scores of studies have reported an epidemic of burnout among U.S. physicians, with rates approaching 50%.1,2 It was no fun to be the bearer of such bad news, but at least these studies acknowledged and validated the problems our faculty physicians were experiencing. These studies also identified behaviors and beliefs that correlated with lower rates of burnout and higher quality of life, and in some cases motivated specialty groups and health organizations to consider reforms.

Before long, the scientists on our committee and throughout our institution began asking, “What about us?” They sensed a declining morale among faculty scientists analogous in many ways to the problems of their physician colleagues. Again, we searched the literature, but this time we found nothing—there were no serious attempts to assess the health and well-being of academic biomedical scientists. This, of course, smacked of irony—the scientists who studied human health had never researched the health of their own profession.

We called a meeting of interested faculty scientists and asked them how we might go about investigating this problem. They suggested we begin by interviewing the chairs of basic science, population science, and quantitative science departments at our large, urban comprehensive cancer center. If the results are interesting, they said, then we should consider a more extensive quantitative study.

We recently published a report of our findings in the journal Nature.3 Most chairs told us that the morale of academic biomedical scientists has worsened significantly in the past five years. They cited funding challenges, bureaucratic inefficiencies, and faculty-administration conflict as the main sources of stress. Many faculty, they predicted, will lose their positions because of lack of funding, and even those who secure funding may not continue to enjoy their careers given the changing research environment. Underlying much of this stress is a shift from academic culture to a more corporate culture, with explicit productivity targets, commercialization, and top-down decision making. Chairs expressed a wide range of opinions regarding the future: whether science for the sake of science will continue to be supported, or whether an increased focus on commercialization and applied sciences will supplant the role of RO1 grants and pure investigative research.

A National Perspective on the Problem
Several indicators suggest that our faculty’s problems—declining morale, funding difficulties, frustration with paperwork and bureaucracy, and faculty-administration conflict—are not limited to our institution but are part and parcel of a national trend. The Chronicle of Higher Education recently surveyed National Institutes of Health (NIH)—and National Science Foundation–funded scientists, asking about economic pressures, and found “an unequivocal downsizing of their capability to perform basic investigative research.”4 Half the respondents said they had abandoned areas of research central to their lab’s
mission, and three-quarters said they had cut back on graduate students and research fellows. Eighty-eight percent reported “greater discouragement among graduate students and postdocs about future career opportunities.”

A recent report from the National Research Council (NRC) on preserving the health of academic medical centers and research universities also acknowledged the funding crisis, as well as the concerns about excessive paperwork and regulatory burden, calling for bold new initiatives to address these issues. Although the NRC proposals were too general to be of much benefit or consolation to faculty scientists and their chairs, they did underscore that the funding crisis and the bureaucratic burdens are a serious threat to the future of academic institutions and a major stressor for academic scientists throughout the United States. The NRC report suggested that some of these problems are in large part the collateral damage of our litigious culture.

Benjamin Ginsberg’s much-discussed book, The Fall of the Faculty: The Rise of the All-Administrative University and Why It Matters, demonstrates that the other concern expressed by the chairs—the deteriorating relationship between faculty and administration—may be a nationwide problem as well. Ginsberg describes a role reversal similar to the one our chairs discussed, in which faculty in American universities have taken a backseat to administrators and staffers who make the rules and set the agenda. He documents a sharp rise in salaries, prestige, and sheer numbers of administrative officials, and in budget shifts from faculty to administrative priorities. In 1975, American universities employed twice as many professors as administrators and staffers combined. By 2005, the number of administrators and staffers had exploded by 181% from 268,952 to 756,483. By 2005, the number of American universities employed twice as many professors as administrators and staffers combined. By 2005, the number of administrators and staffers had exploded by 181% from 268,952 to 756,483.6

Further evidence of this trend, and its impact on faculty morale, was noted in a recent study by Souba et al. of clinical chairs at U.S. medical schools. Chairs of surgery and medicine departments described a pattern in which executive leaders intentionally or unintentionally discouraged the flow of negative information from their faculty. This creates a culture of organizational silence in which the most important issues go unrecognized, undiscussed, and unaddressed. It also creates a culture in which the decision making becomes centralized. Faculty needs are ignored, and faculty are disenfranchised from the decision-making process.

**Recommendations for National Stakeholders and Academic Institutions**

The best way to improve academic scientists’ morale is to address their very real concerns regarding funding, bureaucracy, and faculty–administration conflict. This should also improve their productivity. Instead of spending inordinate amounts of time fighting for and worrying about funding, being sidetracked and frustrated by bureaucratic paperwork, and being demoralized by faculty–administration conflict, they could focus on being scientists and doing science.

The NRC report recommends that the federal government, along with other research sponsors, should:

- “Adopt stable and effective policies, practices and funding for university-performed R&D [research and development] and graduate education so that the nation will have a stream of new knowledge and educated people.”
- “Create a ‘Strategic Investment Program’ that funds initiatives at research universities.”
- “Strive to cover the full costs of research … in a consistent and transparent manner.”
- “Reduce or eliminate regulations that increase administrative costs, impede research productivity, and deflect creative energy without substantially improving the research environment.”

Although faculty distress about funding cannot be addressed directly at a local level, academic institutions can implement harm-reduction measures to limit the impact of low funding rates on individual careers and faculty morale. One such measure would be to increase bridge funding for promising faculty who are struggling to fund their research. Another would be to lower the percentage of salary that faculty must cover through grants. A third measure would be to improve administrative support for the grant submission process.

Fourth, institutions could increase the level of formal acknowledgment of research collaboration expressed in the coauthor and coinvestigator status, both in the annual faculty appraisals and in the criteria for promotion and tenure. Finally, institutions can increase assistance for faculty in finding nontraditional sources of research funding, such as philanthropic donations or federal funding designated to support research indirectly through funding infrastructure. Proposals in response to the latter opportunities can sometimes be designed to have a pilot study-funding mechanism embedded in the overall research support umbrella. Because some of the nontraditional funding would lack the academic credibility provided by peer review, promotion and tenure of faculty using these resources could be based on the peer-reviewed publications derived from such funding, and perhaps also on the potential for future NIH RO1 grants resulting from this seed money.

The issues of bureaucracy and faculty–administration conflict can and should be addressed internally through the work of the representative faculty organizations in collaboration with the executive leadership of the institution. In our institution, the Faculty Senate has helped create task forces which bring faculty and administrative leaders together to troubleshoot particular aspects of these issues. There are no easy solutions, but faculty now have representation on key institutional committees.
Institutions can also mitigate the negative impact of funding challenges, bureaucracy, and faculty–administration conflict through improved mentorship, career counseling programs, and better access to mental health professionals. At our institution, we formed a Faculty Health & Well-Being program which offers training around issues of burnout, resilience, and work–life balance (grand rounds lectures, panel discussions, workshops)\(^9\); provides mind–body fitness training (meditation, yoga, Tai Chi, Pilates, and mini-retreats)\(^10\); organizes peer support activities (support groups, “faculty café” social gatherings)\(^11\); encourages creativity and emotional expression (stress-buster music programs, faculty art exhibitions, karaoke); supports career development and mentoring (a “focus on junior faculty” initiative); and offers informal coaching and counseling. Our Faculty Assistance Program provides up to three free, confidential sessions with a licensed psychologist for faculty members and their immediate family. This service is completely separate from the institution, and from the existing Employee Assistance Program, which is also available through Human Resources. Finally, we cohosted a national conference and published a volume on “Faculty Health in Academic Medicine.”\(^{12}\)

Many academic health centers are beginning to acknowledge that academic science is no longer a reliable career path and are offering assistance in transitioning to alternative careers. At our institution, for example, the newly established Center for Professional Development and Entrepreneurship offers educational programs and advising services to raise awareness among trainees and faculty and to facilitate connections with external career opportunities.

These measures will help faculty scientists to be more responsive to changes in the funding and regulatory environment and to the rapid developments in scientific knowledge. They will also enable faculty scientists to be more competitive with industry and international peers, less distracted by extrinsic factors, and better able to focus their creative energies on research itself. Under these improved conditions, scientists will not only be more productive but also should experience lower levels of job stress, lower levels of job burnout, and higher levels of job satisfaction.

**Funding/Support:** None reported.

**Other disclosures:** None reported.

**Ethical approval:** The study described in this Commentary was approved by the institutional review board of the University of Texas MD Anderson Cancer Center.

**References**


7. Bogler O. Senior vice president for academic affairs, Division of Academic Affairs, University of Texas MD Anderson Cancer Center. Personal communication with W. Holleman, February 4, 2013.


