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## Promotion at the Johns Hopkins School of Medicine J. Brooks Jackson, M.D., M.B.A. Baxley Professor and Director of Pathology Chair, JHU SOM Professional Promotions Committee (2002-2012)

Promotion to the rank of Professor with a contract to retirement is a goal of most of the faculty at the Johns Hopkins University School of Medicine. Unlike most medical schools, Johns Hopkins has only one set of criteria for promotion to Professor. As a prerequisite for promotion, faculty must first satisfy the basic obligations of all faculty members as outlined in the Gold Book, and "candidates for Professor must have outstanding records of scholarly achievement including teaching, must have achieved national leadership and in most cases, international professional recognition, and must rank among the foremost leaders in their field."

These criteria for promotion "are derived from the Institution's primary aim, which is to be a national and international leader in medicine, science and education." The criteria are very broad and allow potentially many different paths for achieving promotion whether a faculty's activities are predominantly in the areas of research, education, program building, or clinical medicine. The key is to document scholarly achievement in one or more of these areas. Conrad Weiser recently defined scholarship as the "Creative intellectual work that is validated by peers and communicated," and has described four forms of scholarship: "discovery of new knowledge; development of new technologies, methods, materials, or uses; integration of knowledge leading to new understanding; and artistry that creates new insights and interpretation" (Conrad J. Weiser. The value system of a university – rethinking scholarship. College of Agricultural Sciences, Oregon State University, Corvallis, OR 97331, USA).

Documentation of peer-reviewed scholarly achievements is essential for promotion and can take many forms. Publications of peer-reviewed papers, book chapters, textbooks, and handbooks in a focused area are typically the most common form of documentation. However, films, videos, exhibits, and Web-based material are also becoming more common. It is important to recognize that the number of scholarly works is not as important as the impact of those scholarly works on the field. In order to assess the importance of one's scholarship, the promotions committee attempts to determine whether such work has directly or indirectly changed the practice of medicine or medical education, provided new insight into mechanisms of biological systems, health care delivery, pathogenesis of disease, program building, or medical education.

Methods of scholarship assessment include the number of times scholarly work has been cited, using Google Scholar for example, with more weight given to first/last author papers. The H-index is also used which is a number that represents the number of papers that have been cited at least that number of times (e.g. an H-index of 50 means an author has 50 papers that have been cited at least 50 times each; an H-index of 15 means an author has 15 papers that have been cited at least 15 times each). A high H-index means the author has a relatively high number of highly cited papers. The limitations of the H-index are that one could have a high H-index and not be a first/last author on any of them or not have published in 10 years. Conversely, one could have a low H-index, such as 10, and yet each of those ten papers could have been cited 5,000 times each, or the field could be a very narrow field that will not generate a high number of citations despite high impact in that particular field.

To give some perspective, the mean and median number of original research articles at the time of promotion to Professor in the JHU School of Medicine is 68 (32 as first/last author) and 61 (30), respectively. The mean and median number of citations for peer-reviewed papers of nominees is 2,974 (1,431 as first/last author) and 1,710 (826), respectively. The mean and median H-index for all peer reviewed papers is 25 and 23, respectively. However, the range is quite broad depending on the field and type of scholarship. For example, in the History of Medicine field, authored books rather than articles are typically the major focus of assessing scholarship. Likewise, in the field of education, textbooks, medical handbooks, and published curriculum and their impact in the field are examples of scholarship that are given greater weight than citation indices. It is important to note that while all faculty members have an obligation to apply for external funding, funding is not a criterion for promotion. However, the ability to obtain external funding does provide evidence that other highly regarded experts outside the institution view one's expertise and ideas favorably.

Outstanding teaching or education is not just assessed by scholarly works in education, but also by the quality of education provided and its impact on one's trainees. Excellent mentorship is highly valued as it will most likely lead to producing the outstanding leaders in medicine of tomorrow. Is there a track record of one's trainees who have gone on to become leaders in their field? Do the trainees speak highly of the training they received? Have the trainees been successful in publishing papers, receiving awards or grants under the faculty's mentorship? Has the faculty member received national teaching awards, conducted educational conferences that are well attended by national and international participants, developed a curriculum that is widely adopted, or developed an educational Web-site that is widely used?

Being recognized as a foremost leader in one's field is the third criterion which generally requires that one is recognized internationally. Internal and external referees who are typically professors in the field of interest are solicited to comment in this regard. In addition, the committee seeks evidence that one is considered an expert/leader in one's field in a variety of ways: one's participation in NIH study sections, editorial board membership, leadership positions in national societies, receipt of national/international awards.

Generally, the majority of faculty with M.D. degrees are involved in research, teaching, and clinical activities and faculty with Ph.D. degrees in research and teaching. It is important to note that it is not required that one does research or clinical service to be promoted. The fact that the majority of faculty who are promoted to Professor are promoted on the basis of research achievements probably reflects the fact that Johns Hopkins is the number one funded research university in the country which in turn attracts faculty interested in research as well as an order of magnitude more funding for research than educational programs or clinical program building. Nevertheless, there are a number of different ways to meet the criteria for promotion.

My advice for those who aspire to be a Professor at The Johns Hopkins University School of Medicine is to select a focused area of interest whether it be a disease, an organ system, a biological pathway, development of a surgical technique, educational program development, or health care delivery early in one's career. There are many possible areas given the flexibility of the promotion criteria. The key is to focus on an area in which you are interested, consistently publish high quality peer-reviewed publications which advance the field, and mentor and teach trainees and others in your field who then in turn become leaders in the field of medicine. Initiate projects that address important questions that have the potential to change the practice of medicine or education or elucidate the pathogenesis of disease or the mechanism of a biological process.

Take a leadership role in training programs and courses by actively teaching, mentoring, and developing programs. Be an active participant in your field at the national and international level through presentations at national/international meetings and universities, professional societies, study sections, advisory groups, editorial boards, etc. It is not required that one does all these activities to meet the criteria for promotion. There are certainly other activities which can lead to promotion as long as the criteria for promotion are met. There is no timeframe in which one must be promoted to Professor, but staying productively on track for promotion is important. Promotion to Professor does take hard work, but most who are nominated for promotion are successful. There are currently 513 Professors in the School of Medicine (412 men and 101 women) among a total of 2,350 faculty [1,489 men (27.7% are professors), 861 women (11.7% are professors)]. In the last 8 years, 315 faculty (236 men, 79 women) have been nominated for promotion, and the Professorial Promotions Committee has recommended 272 (86.3%) for promotion. Of these 272 faculty, 200 (74%) were men and 72 (26%) were women. The success rate for men and women has been identical. The average length of time at the rank of Associate Professor before promotion to Professor is approximately 8 years. Given that the success of The Johns Hopkins University is probably most dependent on the academic success of the faculty, meeting the criteria for promotion to Professor is not only a great honor, but also critical to sustaining the university's world class reputation and the benefits it brings to mankind.