

Case Study: Tenure

Dr. Laura White is up for her tenure decision after six years at State School University. White is an experimentalist in condensed-matter physics who is a very popular teacher, especially among non-science majors. She has developed some innovative teaching materials for non-science majors that are being used by some of her colleagues in their classes. She has three graduate students and her research has gradually moved from traditional condensed-matter physics to more soft condensed-matter physics with biological applications. This line of research has led to collaborations with colleagues in the biomedical engineering department and she has been a participant in two large grants from the National Institutes of Health. The most senior graduate students should defend his thesis this December and she has graduated two M.S. students. She has been extremely active in involving undergraduates from both engineering and physics in her research, and her undergraduate students have presented papers at national meetings. She has published three Physical Review papers, as well as having papers in Biophysical Journal and the Journal of Magnetic Resonance Imaging, and six refereed conference proceedings in the Journal of Applied Physics over the past six years. She has given three invited talks on her research at national conferences and fifteen contributed research papers at national and international conferences. In addition to research and teaching, she has obtained a \$1.2 million dollar grant from the National Science Foundation that teams math, science and engineering graduate students with K-12 teachers to try to improve science education in the local school district. This is a large, multi-department initiative that she directs, which has gotten a lot of positive publicity for the university, but also takes a significant amount of time to administrate. The program has generated a lot of national interest and she is greatly in demand as a speaker on outreach programs.

Background on State School U.

State School U is a second-tier university in the Midwest. The physics department has four strong research groups, including a group in physics education research. They have doubled their external research funding in the last four years, and added eleven new faculty members in the last six years.

You are at the faculty meeting where Dr. White's tenure decision is to be discussed. Ask volunteers at your table to take on the roles of the various people whose opinions are expressed below and argue their points. The rest of the table should take on the role of other faculty members. Discuss the merits of Dr. White's tenure case so that you can come to a decision as to whether she should be recommended for tenure and on what basis the decision should be made.

The following is the discussion thus far.

Dr. Ralph Kramer, Department Chair: From my perspective, Dr. White has been a great addition to the department. She is an outstanding teacher, and her outreach programs have given us a lot of positive face time with administrators. She has won three teaching awards and the university's outreach award. She has been invited to numerous institutions to talk about her work with K-12 education and this reflects well on our department, especially given our land-grant mission.

Her research has not progressed as quickly as we would have liked, in part because it turned out that one of the materials she created had important potential as a scaffold for artificial bone growth. She got involved with researchers in biomedical engineering, and basically started an entirely new research program. This caused her publication record to be weaker than we would normally expect from an up-and-coming assistant professor; however, the research is progressing well and we have high hopes that she will be able to get grants in this area.

Dr. Ted Grim. (Grim is one of the top-ranked researchers in the department, bringing in multiple large grants and publishing regularly in Phys. Rev. Lett.)

I am arguing against tenuring Dr. White, as I don't feel she has generated enough of a national reputation as a researcher in her field. She changed her research from the area we initially hired her in – nanostructured materials – to bioengineering. This is a physics department, not an engineering department. I don't feel like she fulfilled the promise she made when we hired her – to establish a research group with a national reputation in nanostructured materials. She has instead placed her emphasis on giving colloquia on her outreach program and frequently is not around to participate in departmental functions such as colloquia and faculty meetings. I find it important to be able to run into my colleagues in the coffee room to discuss physics and other department-related things and I have not, in the six years she has been here, run into her more than once in the departmental coffee room. I think she would be better off at an institution that places its emphasis on teaching and outreach and not at an institution whose

primary mission is research. There are a lot of excellent physicists on the market in the next year and we would do much better trying to attract one of these than keeping White on our faculty.

B. Jones, Professor. Dr. Jones was a high-energy theorist. Since retiring from research, he has become the department's undergraduate chairman and is responsible for recruiting and the undergraduate curriculum

I am strongly in favor of tenuring Dr. White. As undergraduate chair, I have become increasingly involved in trying to improve our undergraduate program so that we can increase the number of undergraduate physics majors (which has been falling in recent years). She is an extremely popular advisor for undergraduates and has been the leading faculty member in having undergraduates win awards for their research. She has even 'converted' a couple of engineering majors to physics majors by involving them in research in her lab.

In the last three years, the number of inquiries we receive from prospective students regarding becoming physics majors has doubled. I am sure that part of it is due to her activity in the K-12 schools here and throughout the state. Since the number of physics majors is going down in our department (we're down 22% in the last ten years), this is a very critical role for her to play.

Dr. Tony Starr. Starr is a theorist in Atomic-Molecular-Optical physics and another of the department research leaders.

I am voting against recommending White for tenure. Despite having been given an extra year due to a maternity leave, she has failed to attract significant grant funding on her own. All of her grants are in conjunction with other people – she does not have an individual investigator grant from NSF. She is part of group grants from a variety of sources, including the National Institutes of Health and the Air Force Office of Scientific Research, but these all involve older, more established researchers. Likewise, her papers all have a large number of authors – how are we to tell what portion of these she was responsible for? She is publishing in journals no one else in the department publishes in, like Biophysical Journal. This department needs researchers who will be strong leaders and I don't see this indication in White's research. In addition, she is pregnant again and this can only slow down an already lagging research program.

Fred Graff. Fred is a newly tenured associate professor in the nanostructured materials field.

I think someone familiar with this field needs to note that our research is becoming more and more interdisciplinary and that we necessarily work in increasingly larger groups. All the funding agencies want us to work with people outside our discipline, so I think the bridges she's building with the bioengineering department should be viewed as a positive step and not a negative one. Nevertheless, I share the concern that her research has not progressed as fast as it should. I think she should have taken on more graduate students and not as many undergraduates – this would definitely have helped her publication record. The other thing I take issue with is that she was very visible in the recent school bond referendum and I don't think faculty members ought to be active in things like that, especially when they choose left-leaning positions that make the whole university look liberal.

Who do you side with as you read through the various players comments here? How should this decision be made? How is it made on your campus?

Crafted for the Sigma Pi Sigma Congress by Dr. Diandra Leslie-Pelecky