



Tenure and Promotion Committee:

It is my privilege to give **Jim Drachenberg** my fullest support for Tenure and Promotion at Abilene Christian University. He exemplifies all of the qualities of a scholar, a teacher, a servant, and a Christian. In the past few years he has already helped our department tremendously and proven beyond any doubt that he is an ideal person to advance the mission and purpose of ACU.

I am uniquely well suited to give this committee some insight into Jim's research successes. We have both been in the "atom smashing" experimental nuclear physics community for nearly 20 years, sometimes on the same project and sometimes as friendly competition. When the government invests in a billion dollar new accelerator facility, such as the Relativistic Heavy Ion Collider (RHIC), we always ensure that at least two experiments are running. This scheme is helpful not only for scientific purposes, such as having a way to cross-check results, but also psychological so that groups push each other to make the first discoveries and publications. This is why RHIC has two large experiments: PHENIX and STAR, each with roughly 1,000 scientists and engineers and each costing hundreds of millions. ACU was with PHENIX, while Jim was with STAR. So Jim and I have been both colleagues and competition.

I cannot over-emphasize how big of a deal it is in our community for Jim to have been a Deputy Spokesperson for STAR. This is both a prestigious leadership position, and a huge commitment of time and energy doing difficult and sometimes thankless service for the community (not unlike being a department chair in academia). Jim has been recognized numerous times for his excellent research and leadership abilities. He shows what it looks like to walk the hard road of being a scientist and a Christian while exemplifying the best of both.

I want the T&P Committee to know two stories about how Jim has impacted our research group since joining the faculty at ACU. First, our nuclear physics group has been funded for 37 years, but it has sometimes been a mighty struggle to keep running through hard times and budget shortfalls. ACU was an important member of PHENIX for nearly 20 years, but the experiment ended running and was disassembled in 2017. Meanwhile, our other experiment in Chicago also just finished and plans to continue were in serious jeopardy. Rusty Towell was leaving the research group to start NEXT. To be blunt, we were in trouble. Then Jim came. In summer 2018, before his ACU contract officially even started, he helped us switch ACU over to STAR and got us plugged in with new projects. Our funding officer was so excited that he gave us an \$50,000 to support Jim's work.

The last story is that while ACU has been, in our humble opinion, the best institution in the county for including undergraduates in nuclear physics research, we don't have graduate



students and we don't spend nearly as much time writing papers as our colleagues at R1 universities, which are the only metrics some reviewers care about. We've learned that college students can be great at building detectors, but we can't put them on a multi-year data analysis project like a grad student. Before Jim, we were often praised for our work with undergraduates and criticized for the lack of papers we've been primary authors in. Jim is filling that void. So not only did he get ACU into a thriving experiment, he is bringing new contributions that our group was lacking. During my 11 years here I have taken students all around the country to build nuclear physics projects that we couldn't do in Abilene. Jim is a co-PI on a nearly two million dollar NSF grant that funded our first ever detector project at ACU. In summary, Jim is not only helping to ensure that our research group survives, but he is starting a new era of exciting work we've never been able to do before.

To be clear, I don't want to diminish his abilities as a teacher, his service work, or his collegiality. I know he is a great teacher (in our department's 4-semester introductory course sequence, I teach the 1st and 4th while Jim teaches the 2nd and 3rd, so I can vouch for his good work). His service to the department and university are excellent, and he is a great colleague. I hope others have written to share his accomplishments in these important areas. Instead, I wanted to invest my time making sure the T&P committee is aware of how important his research contributions have been. Jim is the real deal. From my perspective, his work easily exceeds the requirements for Tenure and Promotion.

Please don't hesitate to contact me if I can be of any help.

Be well,

Mike Daugherty
Professor
ACU Department of Engineering of Physics