

To: Brice Smith, Chair  
Physics Department

From: Douglas Armstead, Chair  
Physics Department Personnel Committee

Date: February 15, 2019

RE: Reappointment Recommendation for Dr. Eric Edlund

As a result of the limited tenure stream faculty that are active on campus this semester, after consultation with the chair of the Physics department, the Faculty Personnel Committee is acting as a committee of one this semester. I vote to **Recommend** him for reappointment at this time. My recommendation is based on Dr. Edlund's portfolio and is explained below in accordance with the policies and procedures outlined in the College Handbook and the Physics Department Personnel Policies. Looking at Dr. Edlund's first year at SUNY Cortland as well as his previous two years teaching experience as Visiting Lecturer, Preceptor and Lecturer at California Polytechnic University, Princeton University, and Rider University provides a significant track record upon which to evaluate his performance and supports my recommendation that he be granted a reappointment to the faculty.

#### Mastery of Subject Matter

Dr. Edlund is a highly qualified professor holding a baccalaureate degree in physics from the California State University, Chico in physics and mathematics and a PhD in physics from the Massachusetts Institute of Technology. He is an expert in the field of plasma physics as demonstrated in part by his positions as Research Physicist at Princeton's Plasma Physics Laboratory, Research Scientist at US Department of Energy's Office of Fusion Energy in Germantown, MD, Staff Scientist at the Massachusetts Institute of Technology's Plasma Science and Fusion Center, and Visiting Scientist at the Max Plank Institut für Plasmaphysik Turbulence and Transport Group in Greifswald, Germany. His expertise is also demonstrated by his author and key personnel status on the US Department of Energy grant "Construction of a phase contrast imaging diagnostic for Wendelstein 7-X" and co-PI status on the US Department of Energy grant "Phase contrast imaging for Wendelstein 7-X" (renewal). Dr. Edlund has presented numerous talks and poster presentations, been first author on 8 peer-review articles and contributing author on an additional 16 peer-review articles.

#### Effectiveness in Teaching

Dr. Edlund has taught a number of courses including introductory algebra based physics, introductory calculus based physics, and classical mechanics. The trend in his teaching since his arrival has been one of growth, with the exception of his PHY420 course which has some anomalous aspects. In his discussion of his CTE scores in section IV-2 of his portfolio Dr. Edlund splits his

classes into two cohorts. While there is some merit in considering the cohort of students that met Dr. Edlund in PHY201 and PHY203 in the spring of 2018 separately there are strong similarities in their experience during that semester as expressed in their numerical CTE scores and written comments. Both encountered a professor who had high expectations of them both in terms of their performance in the class and in terms of the work they needed to do to prepare for class. Both cohorts came with high expectations of him: that he would give them the context to understand the significance of what was being taught (“teach as though we are new to it”, “explain as if they had never heard of it before”); that relationships would be derived from first principle (clearly this was done) where reasonable (“occasionally, when trying to break down a concept...the instructor complicated the material more. Find better ways to clarify and simplify.”); that the tools to apply principles and relationships would be developed and demonstrated (both craved more of this); that points at which they would have difficulty would be anticipated (“not succinct”, “clearly is a disconnect between what is being taught and what is being learned”, comment that this is an area for growth by Frank Rossi); that when they ran into trouble their concerns would be heard (“...we explained that our disconnect was...the concepts...[h]e ignored this until...”, “...Prof. Edlund listened to suggestions eventually but he was a bit defensive at first”, “...listen to students on how they learn...”); and that they would be treated with dignity (Condescending/Demeaning). Both groups saw improvement in Dr. Edlund’s teaching effectiveness as the spring semester progressed. Dr. Edlund has acknowledged many of these things and has both made and presented in his portfolio concrete plans for addressing some of them in various ways including producing new materials, shifting focus, restructuring etc. That he managed to continue to improve in the eyes of the PHY201/PHY202 group is obvious from the CTE numbers (nearly every average has risen) and the comments (“Professor Edlund has very much improved his second semester”). I point out in particular that the response to “My background is sufficient to enable me to use course material” is significantly higher in the fall PHY202 course than it was in either spring course. I would argue that the preparation they received in PHY201 from Dr. Edlund is likely to be a significant contributor to that. Having said that, there is clearly still room for growth as his students still identify a need for greater understanding of the context (“...could have been a little bit clearer with how things connect to one another”) as well as strengthening his reliance on things other than derivations for explaining the material (my interpretation of “...not skilled in effectively disseminating this level of information. He belongs teaching higher level courses...”). I look forward to seeing evidence of his continued improvement in these areas in future portfolio reviews.

Returning to the question of student preparation at the beginning of the course, the students in the spring 2018 PHY203 course felt noticeably less prepared than those in the spring PHY201 course. The students in PHY203 were in an unusual and challenging situation. They had received inadequate instruction during the first two semesters of their introductory sequence from well-meaning but underqualified staff brought in to temporarily replace on-leave faculty. Their preparation gained in their PHY201 course is very relevant to the experience they had in the fall 2018 PHY420 course where they were a significant portion of the class. They were not, however, likely to be the entirety of the PHY420 course as there is often significant mixing in our upper level courses between

students that entered Cortland at different times (i.e., some students are from a different Cortland PHY201 cohort) and from different places (i.e., some students had their PHY201 equivalent course at a different university). This may or may not have led to inhomogeneity in the student make-up between the WI version of the course and the non-WI version. It is clear, however, that both the instructor and the students saw their experience in PHY420 as being a poor one. The students' use of Chegg is clearly a very significant contributing factor and there appears to be a rather slippery slope from learning aid to cheating aid. Its use has significant implications far beyond Dr. Edlund's course. The warning signs that students are falling behind when using Chegg are no longer as obvious in the homework/take-home exams and have to be picked up in other ways (e.g., performance on an in-class quiz, questions asked in class, engagement with in-class problem solving etc.). Dr. Edlund was in the unfortunate situation of having to discover its misuse and respond to it on a large scale. Dr. Edlund made a sincere effort to make confronting the students a growth experience rather than strictly a shaming experience. I base this on the observations of Marinda Souva as a third party witness that she shared in her letter to the Physics department in Dr. Edlund's portfolio. I applaud Dr. Edlund's professionalism in this regard. At the same time it is clear that his professionalism took a hit when after learning about his students' transgressions, he allowed the quality and consistency of his class sessions to degrade. The front loading of better teaching and the back loading of poorer teaching will skew the CTE results seen from the immediate end of the course as the poorer teaching is fresher in the students' minds. The reduction in quality is none the less real and it saddens me to see it. In my mind the most salient point regarding this episode is that Dr. Edlund has done a service to the physics department and the greater college by bringing this episode to light.

In future reviews I would like to see more of a discussion by Dr. Edlund of insights that he can take away from his students' comments to improve his teaching and less of an effort to refute the less useful ones. This comes off to this reader as a resistance to listen to useful information your students are trying to share with you. Clearly this is difficult to do when dealing with the situation in PHY420, especially when some of the comments are vicious and personal, but I wouldn't expect that situation to be repeated.

Dr. Edlund's invitation to three different faculty members for classroom observation is commendable. I am inclined to agree with Dr. Rossi that over time Dr. Edlund will become an excellent teacher. While I respect and appreciate the desire to give independence to each level of personnel review and understand that this is why you have no observation letter from Dr. Smith, I would encourage you to add your reflections on the conversation you had with Dr. Smith following his multiple day observation of your class.

#### Scholarly Ability

Dr. Edlund's scholarly ability is impressive and I am hard pressed to see how it could credibly be questioned. His continued productivity with one peer-reviewed article, one technical report and one white paper is to be commended. Also to be commended is his continued participation in the Wendelstein 7-X experiment this summer along with the inclusion of SUNY Cortland student



Nathaniel Rose in that experience. On-campus experiments are a vital part of a physics program and I look forward to seeing his plans to build both a waves in inhomogeneous media experiment and a rotating turbulence experiment come to fruition.

#### Effectiveness of University Service

In regard to service Dr. Edlund has participated on three Physics department committees including the time consuming task of a faculty search. He is also advisor to 10 physics students. He has also taken on service to the greater university by his participation on both the Education Policy Committee and the Dowd Gallery Director Search Committee. He is a member of the American Physical Society and the American Association of Physics Teachers and served as referee on four different academic journals. His service has been entirely adequate.

#### Conclusion

In summary I, as the Department Personnel Committee of one, find that Dr. Edlund has been effective in his time at Cortland and has a strong desire and proven ability to address his identified areas for improvement. His substantial record of prior service further supports my conclusion that Dr. Edlund is a respected and productive scholar with substantial promise to be an excellent teacher and contribute to the Physics department and the College as a whole. As such I **Recommend** that he be granted a reappointment to the faculty at SUNY Cortland.

Sincerely,



Douglas Armstead  
Assistant Professor of Physics  
SUNY Cortland