SUNY Cortland
Physics Department

To: Karen Downey, Chair Math and Science Sub-School Personnel Committee
From: Douglas Armstead, Chair Physics Department
RE: Reappointment and Promotion Recommendation for Dr. Eric Edlund
Date: March 1, 2021

In my role as chair of the Physics Department I am writing to **Recommend** Dr. Eric Edlund for reappointment and rank-to-rank promotion. 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 three year of work 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 both reappointment to the faculty and rank-to-rank promotion.

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. Since joining Cortland three years ago he has been 6 peer-reviewed articles including one as first author.

Effectiveness in Teaching

Dr. Edlund has made significant strides in his teaching effectiveness since his last review. His Statement of Teaching Philosophy has significantly evolved for the better. There he puts forth "Three actionable principles leading to a positive learning environment define the basis of my teaching philosophy: mutual respect, a shared understanding of class expectations, and courses designed to lead students to new skills." I believe they provide a good structure for reviewing his portfolio and will address them in reverse order from which they are presented.

When it comes to putting effort into course designs to lead students to new skills Dr. Edlund results are exemplary. From the redesign of the 200 level physics labs, to the development of support materials (e.g., problem solving flow chart, flipped class room modules, papers to scaffold discipline

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appropriate writing, python script for trajectories in rotating reference frames, etc) to the lectures he gives (both online and in person) he has been very productive. Not only has he produced documents and activities, he has also sought the input of his colleagues across campus in the form of peer observations of his courses. Reading through the letters provided there is a clear trend of improvement with time. It is worth noting that his efforts have added to his effectiveness both in person and online instruction.

When it comes to setting expectations in his classes Dr. Edlund has also made good strides. After the shocking experience he had with widespread cheating in Fall 2018 it is clear that he strived to change students' expectations. This includes what constitutes a reasonable amount of work, the burden of learning from both the textbook and the lecture, and pushing back against academic integrity violations (especially Chegging). These efforts are woven into the materials presented, both in the shared teaching materials and the shared reflections. These broad and sustained efforts are a significant positive contribution to the culture of the physics department.

When it comes to mutual respect between Dr. Edlund and his students, explicit discussion of this actionable principle is light, constituting one paragraph in this substantial portfolio. I believe, however, that this light explicit treatment is a writing style choice rather than a substance choice. The respect he affords his students comes through most clearly in a major shift in the comments from his students in the course evaluations. Reviewing the student comments included in this portfolio since the last review the comments about arrogance and disrespect are not simply better, they are gone. In their place there are comments about how Dr. Edlund has altered the course to better meet their needs (e.g., "I think Professor Edlund has improved a lot in explaining and teaching the subject since last year."). Where students make substantive critiques (e.g., "...during lecture we only get through one type of question...") this is now met with ideas and/or materials to address the student need (e.g., the problem solving flow chart). This is a profound step in the right direction making him a much more effective instructor. The one caveat to this discussion is that not all courses with student comments have been included in the portfolio under consideration. The one class that is not included is the 100 level physics course that Dr. Edlund team taught with two other instructors from the physics department.

In summary Dr. Edlund's portfolio documents a significant and sustained improvement in the effectiveness of his teaching. I am confident that he is committed to making this trend continue in the future.

Scholarly Ability

Dr. Edlund's scholarly ability is impressive and I continue to be hard pressed to see how it could credibly be questioned. His continued productivity with six 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 he has risen to the challenge of providing this opportunity to our students, supervising five SUNY Cortland undergrads in on-campus research.

Effectiveness of University Service

In regard to service Dr. Edlund has participated on three Physics department committees including the time consuming task of two faculty searches. He is chair of the physics curriculum committee. In that capacity he led the departmental seven-year review, saw through the addition of several courses to the curriculum as well as adjusting the prerequisites of several classes to make our students better prepared to succeed in those classes. 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 chair of the physics department, 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 reappointment to the faculty at SUNY Cortland and rank-to-rank promotion.

Sincerely,

Douglas Armstead
Physics Department Chair
SUNY Cortland