April 23, 2019

To: Rebecca Aanerud, Interim Dean
Graduate School

Kima Cargill, Interim Associate Dean for Academic Affairs
Graduate School

From: William Erdly, Chair and Associate Professor
Computing & Software Systems Division

RE: UW Bothell Computing and Software Systems (CSS) Academic Program Review Committee Report: Response to Recommendations

Dear Dr. Aanerud and Dr. Cargill:

This letter provides a summary of our actions and response to the Academic Program Review Committee Report received from the Graduate School on December 11, 2018 regarding the CSS 10-Year Self-study. It is important to note that there was a one-year period between the delivery of the CSS Division Self-study report to the Graduate School on December 15, 2017 and receipt of the review committee findings (based on notes from the site visit which occurred between January 28th – January 30th, 2018). We understand the circumstances of the delay and extend our best wishes to the members of the Review Committee – and appreciate their effort under challenging circumstances. We also want to thank the Graduate School staff in formulating the Academic Program Review Committee Report that we received.

We are pleased to learn that the review committee recommends that our next full academic review should take place in 10 years – and we appreciate the positive assessment of our overall health and suggested opportunities for improvement. We anticipate that by that time, there will be significant growth in each of the UWB School of STEM divisions so we would like to be engaged in any discussion regarding conducting an overall review of STEM versus independent reviews of each of the divisions.

We believe there is a strong convergence of findings between our own CSS Self-study review and committee recommendations. We are taking all recommendations into full consideration as important guidance as we move forward over the next ten years. Given that a significant amount of time has elapsed since the self-study review and site visit, we wish to note that the faculty, staff and administration continue to build upon what is a strong and vital Division within the School of STEM – and the University of Washington as a whole.

SPECIFIC RESPONSES TO REPORT RECOMMENDATIONS

Below, items from the Academic Program Review Committee Report, including "strengths, challenges, recommendations", are highlighted in YELLOW followed by our response.

Section I: Executive Summary

Program Strengths

- *Generally very positive comments across constituents in the review including program faculty, staff, and students*

- *Good mentoring and support for faculty*
- *Strong collaborative environment; faculty enjoy being at UW Bothell*
- *Strong, dedicated junior faculty*
- *The program provides a strong service to the local community and the regions with a high economic impact on the local area*

We were pleased to learn that faculty, staff, and students provided very positive feedback about their experiences with the CSS Division. As a unit, we focus on being a highly-inclusive organization as we respect the ideas, opinions, and concerns voiced by our community. We believe the program strengths as identified above are reflected through our actions as described in our self-study report. Our productivity and success is only limited by the amount of resources available to us.

We provide important access to UW-quality computer science and software engineering education. Our graduates are highly successful and make important contributions to economic development and our community. Our campus and programs are diverse – and our domestic and international students benefit from our focus on teamwork, group projects, writing, and industry/research collaborations, in addition to the requisite technical competencies expected of CSSE graduates.

Faculty mentoring is a high priority. We continue our work to have more effective mentoring for our full-time faculty and we are developing methods (e.g., comprehensive onboarding processes, course mentors, grader support, improved teaching reviews, and merit/reappointment processes) to better support our part-time faculty and address concerns identified during the site visit.

Challenges:

- *The STEM building should support CSS and CSS should be involved in the design of the STEM building. This will ensure that labs and other CSS spaces will meet its needs and support the program's growth.*

We agree with this recommendation. While funding and design for the new building is uncertain, CSS must play an integral role in its design and to ensure the proper allocation of lab, teaching and office space to meet the needs of a critical program for our region and the state.

- *There is a need to improve the number, quality, and access to advisors. Better communication between faculty and advisors will ensure that advice to students is consistent and uniform.*

During the 2017-18 academic year, the CSS Division Chair and School of STEM Dean allocated funds to hire an additional part-time advisor (50% FTE) to provide more support for CSS advising. This is in addition to our current CSS full-time advisor. The existing advisor for the Interactive Media Design (IMD) degree (jointly funded with the School of Interdisciplinary Arts and Sciences) is now co-located with the CSS advisors. We will continue to improve communication between the various advising units and the faculty. This will be done in collaboration with school administrators and STEM staff directors at both the undergraduate and graduate levels. In summary, the CSS Division will regularly monitor this centralized approach (for both undergraduate and graduate advising) to determine its effectiveness and adjust accordingly.

- *There is a need to hire within CSS. CSS is currently turning students away, and there is room to further serve the Bothell and Seattle area.*

The CSS Division is in the process of searching for two additional tenure-track faculty for the 2019/20 academic year – and requesting additional full-time faculty lines for the 2020/21 academic year. We are also working diligently to reduce our reliance on part-time faculty by hiring more full-time, competitive lecture- and tenure-track faculty. This may be achieved by consolidating several part-time lines into full-time, competitively-hired positions. Our fee-based resources are also being used in conjunction with state funds to help create additional full-time lines.

Recommendations:

- *Secure resources for long-term funding to initiate partnerships to integrate CSS with the University and local companies*.

We agree, and provide the following illustrations of these efforts. CSS is working closely with UWB's Corporate and Foundation Relations group to further develop partnerships with industry. They have hired a new development director that works closely with STEM (and CSS). We meet regularly with public and private organizations to identify potential collaborations. This includes sponsored capstone/internships, research opportunities for faculty and students, career day sponsorships, site visits for faculty and students, and many other forms of partnerships. Examples partnerships include work with T-Mobile, Pacific Northwest National Laboratory (PNNL), Microsoft, Avanade (in partnership with Accenture), and a number of smaller start-up companies. We are also strengthening our relationships with UWS and UWT through partnerships and collaborations on research grants, faculty communications, and support of undergraduate and graduate students via capstone/master's-level committee memberships. Also, we now have a CSS Technology Advisory Board (TAB) that includes representation from the private and public sectors – this was just launched in Winter, 2019. The members have significant interests in diversity, collaborations with industry, research/knowledge-creation synergies, funding opportunities, and many other areas. The CSS TAB also has a representative that is active on our STEM Advisory Board to find synergies and guidance on important initiatives.

Detailed Comments and Findings

I. Research and Teaching

Review Committee Recommendations Regarding Research and Teaching:

- *Conduct a Vision (R2, comprehensive?), Mission, and Goals exercise: who do you want to be/serve, then align initiatives.*

  As background, the CSS Division holds a retreat each year to validate and adjust (as necessary) our mission and vision statement. In the 2019/20 academic year, our campus will be focused on a campus-level long-term strategic plan. Likewise, the School of STEM is engaging in early stages of a strategic planning process, and has quarterly meetings to discuss new opportunities and strategies. CSS faculty and staff participate in these activities. CSS should play an important role in this process.

- *Consider creating a 5-year BS/MS degree. This is a good credential and includes longer time to work with each student, thereby helping to solve the problem with longevity of research students (e.g. by the time they are trained, they are ready to graduate).*

Our Graduate Curriculum committee is charged with exploring this (see committee charge letters in our self-study report) – and a workgroup will finalize details and notify the Graduate School.

- *Consider creating a teaching load policy to address lecturer teaching loads (we understand lecturer teaching loads to be 7 or 8 based on feedback from the site visit consistent with the campus norms). Consider a load policy that also rewards new course preps.*

Teaching loads and subsequent course assignments for lecturer-track faculty are reviewed by the individual faculty and the chair. The standard course load for all lecturer-track faculty in the School of STEM is eight courses (the current load as specified by the VCAA/AHR contract). Reductions in load due to new course preps, service activities, capstone project mentoring, microcredit releases (e.g., earned through mentoring capstone projects, independent study) are provided to our lecturer-track faculty specific to the situation. For part-time faculty, resources/mentorship is provided to support preparation for new/first-time courses. Creating specific policies for the workload reductions may be brought forward to the STEM Faculty Council for consideration.

- *Develop a comprehensive diversity & inclusion plan (K12 outreach, K12 scholarship, affinity group support of existing)*

We agree, and believe our ongoing activities as described in the self-study report serve as exemplars to help in creating a revised plan at our division, school, and campus levels. We hope that the UWB Dean of Diversity and Equity will assist CSS in creating this new plan.

- *Establish a better mentoring for part-time faculty that assists in the creation of learning outcomes and syllabi for courses taught by part-time faculty.*
- *Observe classes taught by part-time faculty, and filter out instructors who do not work out*

(The above two items are addressed here.) As described earlier, CSS (in coordination with STEM HR) is developing more detailed on-boarding procedures to better acquaint PT faculty with policies, procedures and general guidelines for working and teaching at UWB/CSS. Our CSS Part-time hiring committee is working to provide effective mentoring and support mechanisms. Reviews of syllabi with a full-time, regular faculty experienced in teaching the particular course now occur prior to teaching. The School of STEM also provides documentation and availability of training resources for new faculty that are teaching at UWB for the first time.

We are also working to improve on the quality and preparation of our industry part-time faculty. In our field, it is important to maintain strong partnerships with industry – and it is a great benefit to our students as they are provided with industry perspectives on next-generation technologies, methods and perspectives.

- *Research*
  - *Reduce the teaching load for tenure-track faculty for the first 3 years instead of the current 2 years*

This is an excellent idea – and will require additional budget allocations from the school and campus-level administration.

- *Explore the Scholarship of Teaching and Learning as a research area (this could be a* broad impact initiative that ties in nicely) and broadens participation in scholarship.

The STEM Faculty Council has adopted and refined the Boyer Model for pedagogical research related to the scholarship of teaching, scholarship of discovery, scholarship of application, and scholarship of integration (see School of STEM Boyer Model). CSS faculty (lecture- and tenure-track together) are engaged in a variety of Community-based Learning and Research (CBLR), with a several faculty members receiving campus fellowships. These types of projects have resulted in publications, conferences, and other venues that demonstrate scholarly impact. CSS has made great strides in this type of work – and several of the initiatives are now moving in status as toward a Center. These are described in our Self-study report – Appendix J (Research Groups).

- *Modernize the course material for those courses that are out-of-date.*

This recommendation is already a regular charge to our curriculum committees and to faculty course champions (individual faculty responsible for course content). The newly-formed TAB will further provide industry perspectives and advice. All of our courses have been organized into "course clusters" and are examined regarding overlap, omissions of competencies, and modernity/relevancy. We constantly review courses to determine relevance to our fast-changing discipline as well as examine learning goals and content for each of our courses. The CSS leadership team also has regular meetings with advising to identify potential courses that may need attention.

II. Growth of Student Body

Review Committee Recommendations Regarding Growth of Student Body

- *Increase spending to hire course readers/graders*
- *STEM school should permit peer facilitators as well as graders*
- *Faculty should be able to make decisions regarding whether they need graders or peer facilitators for courses.*
- *Student workers should be hired and paid quickly so they can be utilized to support teaching efforts.*

(The above four items are addressed here.) The STEM Faculty Council has adopted an overall policy for requesting graders and/or peer mentors for courses, and it is in the process of updating this policy to provide more input from the divisions. The goal of this policy is to assure that each division has the necessary budget and latitude to customize this resource per our own specific needs; we hope that this will indeed be the case.

- *CSS should take leadership in working to reduce teaching load.*
- *More transparency is needed on the determination of class sizes and teaching load. As far as the Review Committee could tell, the teaching ratio appears to be 21:1, a number which seems to have remained fairly stable. Yet, the committee heard from faculty that the class sizes have increased (or are perceived to be large). More detailed analysis of class size over time for each course and section is needed to identify any imbalance.*

(Response per two items above) CSS recently implemented a standardized process for submitting annual course requests. This new process addresses individual course loads in a systematic manner.

It is now much more specific in identifying faculty member needs such as professional growth/development, scheduling, buyouts (service; student mentoring such as required capstones/thesis and projects; and grants) and other factors. As we get more detailed data from UWB institutional research regarding class size/load per level/type of class/student outcomes, we will continue to make adjustments to address any imbalances.

- *Hard money earned from student fees should be used to support necessary activities, and soft money should be used to support initiatives.*

The Chair works closely with the STEM fiscal staff, the Associate Dean of Graduate Studies, and the Dean to identify proper sources of funding for initiatives. Student fees ("hard money") and the appropriate use of these funds are determined by CSS needs and then funds are processed by STEM staff. We have a number of mechanisms to help identify project needs from faculty, staff, and students that best support our Division. Portions of our "soft money" are allocated to support projects and activities that enhance the educational process.

- *Revamp advising program to increase availability, consistency of advice, and improved communication with faculty.*

This item is addressed as part of the general recommendations (challenges subsection) on Page 3.

Integration with School of STEM

Review Committee Recommendations Regarding STEM Integration:

- *Communicate to faculty that there is advising and IT support dedicated to CSS, but these resources are centrally administered.*
- *More socializing and/or dedicated meetings between advisors and faculty from respective programs.*
- *IT: Faculty need to provide prioritized requests. Creative hiring is needed (hire department alums, hire non-traditional, utilize student workers in Linux and security labs, etc.)*
- *Clearly communicate to the faculty and staff the allocation of resources such as budget, staffing, and space within STEM to dispel the perception that CSS is receiving fewer resources that other STEM units.*
- *Clearly communicate resource constraints to faculty and staff in CSS*

(Response per five items above.) We will hold a regular (quarterly) meeting to provide updates on staff activities – and provide a social event immediately following the formal portion of the meeting. This is in addition to our current CSS Division social events such as the end-of-year gathering, quarterly all-STEM potlucks, and the STEM and CSS retreats that occur at the beginning of each academic year.

IT staff hiring has been completed. Hourly workers and support for special projects, such as student guides to Linux as well as recommendations for lab configurations and use, are regularly completed.

Communication about budget, staffing and space is critical and should be improved. This communication needs to come from multiple levels to represent perspectives and issues that we are facing. These perspectives need to be provided by the Chancellor's Office, VCAA, the School of STEM Dean's Office, the Associate Dean, the division chair – and the STEM Faculty Council. Also, faculty governance plays an important role in this communication. While various avenues exist, this

information needs to be provided in ways to ensure faculty awareness, participation and relevance in our planning and decision-making processes.

- *Consider the possibility of an administrative assistant for the CSS chair/division.*

It would be great if this would be supported. Currently, the CSS chair must rely on faculty and staff to perform a variety of tasks specific to the needs of CSS, such as support of Graduate Programs (via our Graduate Program Coordinator), Undergraduate Programs (via the Director of Undergraduate Education who now also supports course scheduling), STEM support (via fiscal services, meeting support, searches, special events), and other areas. As CSS continues to expand, there will likely be further need for additional faculty support/buyouts in the absence of such staff. We are not sure this approach is sustainable.

- *Rethink the committee structures and faculty governance. Consider merging the scopes of different committees and reducing the sizes of the committees to reduce administrative burden of the faculty.*

- *Administrative workload of the faculty should be balanced in that the more demanding committee work should be effectively rotated among faculty.*

(The above two items are addressed here.) Regarding committee workload, we have consolidated the number of committees from 14 to 11 and reduced membership by one faculty member per committee. All committees have staff representation to provide perspective and communication. Workload factors for each committee are determined and balanced per faculty member. Discussions with each faculty member occur regarding committee choice based on interests and individual goals and objectives (per Chair conferences with each faculty member). Charge letters are now done in a collaborative method with the Chair to determine realistic goals/benchmarks for each AY.

- *CSS and STEM must give immediate and serious attention to the integration of CSS into the school, given the perception by CSS faculty that workloads have increased. While multiple, concurrent changes have occurred since the creation of the School of STEM, the current resource allocation to CSS seems fair in the context of STEM.*

Growing a new School of STEM has indeed increased workload. The CSS Division is heavily involved in activities related to developing policies/procedures; shared governance (e.g., STEM Faculty Council); shared services; faculty and staff hiring; processes for promotion & tenure, merit reviews; course scheduling; budgeting and much more. This has all occurred during a high growth period for all divisions within the school – and while occupying a new building and creating a large number of new course/degree options. More clarity now exists regarding roles and responsibilities of staff – and methods of communicating requests for support to STEM staff are improving in areas such as processing of travel requests, reimbursements, payroll adjustments, hiring processes/support, course/room scheduling, and event planning.

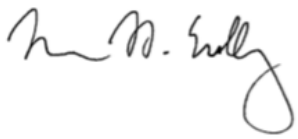
Closing remarks:

We value the feedback we received resulting from the review committee site visit. We hope our responses demonstrate our commitment to carefully considering these. The CSS Division continues to make great strides in teaching and research productivity – and is establishing itself as a significant provider of a number of distinctive and important computing-related degrees. We have received national recognition in reference to the quality of our Master's degree program (6th in the United States in 2018; Source – SR Education Groups) as well as the percentage of women who graduate with a baccalaureate degree in

computing (4th in the United States in 2019; Source – Chronicle of Higher Education). Demand for our degree programs continues to soar – and we work toward effective, strategic growth given available state funding and through several fee-based credentials. We hope that a new building will provide CSS with additional space – and that funding will be available for hiring much needed faculty and staff.

Our thanks to the review committee members, the Graduate School staff, and administrators for their many efforts in supporting this review and feedback process. If there are any questions or requests for additional information/clarification, please feel free to contact me.

On behalf of the CSS Division,



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