Personal Statement of Service for Mark S. Sherriff

Since becoming an Associate Professor in 2013, I have intentionally made service a major component of my career at UVA. I believe that working together as a department, as a school, and as an education community is essential for achieving our goals of finding new and innovative ways for educating the next generation of computing professionals and engineers.

Curriculum Committees for the Department and School of Engineering and Applied Science

My primary form of service within the University has been the leadership of the undergraduate curriculum committees for both the Computer Science department and School of Engineering and Applied Science. For over half of my time at UVA, I have worked closely with my colleagues in the department and in the school to improve and innovate on our degree programs. As new ideas emerge, it has been my responsibility to work with the members of these committees to consider, revise, and eventually implement these changes for our students.

During my time as the chair of the Computer Science Undergraduate Curriculum Committee (CS-UGCC), I helped to create and implement several substantive changes to our program. The first was the addition of the capstone to the BSCS degree. As we saw our enrollment numbers increase, it became significantly more difficult for the department's faculty to manage and advise the number of senior thesis projects that were now required. Working with Prof. Aaron Bloomfield, I helped to design and pilot the first version of the Service Learning Practicum course, mentoring students working with non-profits to create software solutions. After a successful pilot, we proposed a major change to the BSCS degree that would allow students to take a version of the new capstone practicum course as a senior thesis option, thus allowing the department to manage further growth.

Another major change was a redesign of our CS 1 curriculum. In 2015, the CS-UGCC surveyed the faculty and solicited opinions from other departments as to their needs for a first course in computer science. One of the overwhelming takeaways was that the use of Java and object-orientation in CS 1 was not of much benefit to the rest of the engineering school. In fact, many departments were starting to consider their own introductory programming courses. To help meet the needs of the school, and to better focus our second course (CS 2110), I proposed a major change to our introductory sequence. The CS 1 courses could now use any language except Java and would now have a specified set of learning objectives that covered core ideas in basic programming and computer science. Our CS 2110 course shifted to be a primarily a course on object-orientation, which proved to be a better transition overall for students.

My largest undertaking with the CS-UGCC is still ongoing and has been a multi-year project to completely redesign the CS curriculum. In 2013, the ACM and IEEE released the latest curriculum guidelines, outlining what they believe should be core in a CS degree program. Working with the CS-UGCC, we performed a year-long analysis in 2014-2015 of our own curriculum against the guidelines, finding several areas that we needed to improve on. Following up on that, the committee had one-on-one interviews with all faculty members in the department to get their opinions on the current curriculum and how it should change in the future. The result of these efforts has been the creation of the CS 2020 Curriculum Proposal. The proposal is currently in the pilot stage as we first refine all of the required CS courses, creating what we are calling the "Foundation Courses," to provide a solid base for all CS majors. The second step will be to create a set of tracks that students can select to allow for more specialization in their degree program.

As chair of the SEAS Undergraduate Curriculum Committee (SEAS-UCC), I have worked with all of the other departments in SEAS at some point to enact changes to their programs, often meeting one-on-one with department representatives to refine proposals and help shepherd them through to approval. One of my main goals as chair in recent years has been to take a hard look at our first-year engineering program and make some needed corrections for accreditation, but also to improve the first-year experience and give new students the chance to explore more areas of engineering before having to select their major. I have also served as chair of the Committee on Academic Standards for the past three years, presiding over appeal decisions from students and working with faculty and students who have come into conflict over grading issues.

Other Department and School Service

While chairing both curriculum committees has been a major part of my service to the department and school, I also perform several other duties. Within the CS department, I have served as the TA hiring coordinator for hiring teaching assistants. Our teaching assistant staff has grown to over 200 undergrads each semester, and my role is to manage the application and matching process. I also helped create our TA training course, which Prof. Luther Tychonievich has continued on with to great success. I am the advisor for the Student Game Developers Club, a group dedicated to creating games and helping their members find careers in the game industry. Finally, I serve as a "faculty-on-call" throughout the entire calendar year, meeting with parents and prospective students, managing the placement test process for CS 1, and generally providing support to the associate chairs with information regarding the undergraduate program.

For the school, I have served on numerous other committees, including the SEAS General Faculty Committee, the SEAS Student Affairs Committee, and several hiring committees. Every summer since arriving at UVA, I have volunteered my time as an orientation volunteer, doing both panel discussion and taking on advising sessions to help incoming first years choose their classes. I have also been the department's representative on the SEAS Lab Fee Committee for several years, helping to allocate the money that comes in from differential tuition. I know that my time in the classroom is important, but I also believe that these other duties I fill help make the entire enterprise move more efficiently and for the betterment of our students.

National

On the national scene, I have made a name for myself as one of the senior teaching-track educators in the larger community of computer science educators. Within SIGCSE, the ACM Special Interest Group on Computer Science Education, and specifically at the annual SIGCSE Symposium, a conference of over 1500 attendees each year, I have steadily increased my involvement and visibility over the past ten years. Every year, I run an NSF-funded booth on the show floor that helps other educators disseminate their research. I proposed and now run the largest annual gathering of teaching-track faculty members, where we discuss issues and challenges in our profession. I have served as a reviewer each year and as an Associate Program Chair for the past two years. At SIGCSE 2018, I joined the organizing committee, serving as webmaster and database chair. I was responsible for the website for the conference, rolling out a new mobile conference platform, and also coordinating with the submission team to produce the conference program. Next year, I will continue with the same organizing role, while also joining the full program committee as a chair of the "Birds-of-a-Feather" sessions. I hope in coming years to be the program chair and eventually the symposium chair.

Because of my service with SIGCSE, I was selected to join a CRA committee to create a "best practices" memo on hiring and career practices for teaching-track faculty. As enrollments have grown, departments have scrambled to increase their teaching bandwidth, and as such, more and more teaching-faculty positions are being created. However, the rights and privileges for these positions differ wildly around the country, and hopefully this memo will provide more guidance for departments and schools. The memo will be previewed at the Snowbird Department Chairs convention in Summer 2018.

I have also just completed serving as guest editor for a special issue of the ACM Transactions on Computing Education. The special issue compiled research from around the globe on capstones and large-scale projects in computing education. Prof. Sarah Heckman (NC State University) and I handled the entire process, from creating the call and soliciting submissions, to initial reviews, through the revising stage, and publication later this year.

Local Community

In the community, I have worked in outreach both locally and around the country. For eight years, I helped create and run several week-long programming camps for middle-school aged underrepresented minorities in computer science. These camps were hosted at UVA and provided an opportunity for students to get excited about computing who might not have had the chance. In the past two years, the organization that sponsored the camp has changed their focus, but I hope to reintroduce these camps in the future. In Charlottesville, I helped create new library checkout systems for several elementary schools in the Charlottesville City School System. These systems allowed students to do self-checkout, allowing the librarians and assistants to better assist students with finding the right book, rather than working at the checkout desk.

Summary

Service is a vital part of any faculty member's role at a university and in the community at large. Even as a teaching-track general faculty member, where my career focus is in the classroom, I believe I can have a similarly powerful impact through my curriculum development work and working to improve the teaching faculty profession. I will continue to seek out high-impact opportunities that will improve how computing is taught around the world.