SERVICE ACTIVITIES

My CV lists committees, professional activities and development, reviews, invited talks, and other service. Included here are some highlights categorized as follows: (1) Cooper Union Service, (2) Committee Work, and (3) Professional Activities.

COOPER UNION SERVICE

ME Department Chair, 2016 – present. I was elected Chair of the ME Department effective Fall 2016. Since then, I hold weekly ME faculty meetings with an agenda and take meeting minutes with decisions and action items that are kept on a departmental Moodle website. I worked with the faculty to craft a ME Department Vision statement, SWOT Analysis, Departmental Goals, Current Initiatives, and Current Needs/Ideas/Proposals. I am working with Development to close the loop by recognizing donors, sharing successes/achievements and funding ideas, and providing feedback on how the department is spending endowment funds and how to better connect with alumni and donors. I am implementing more systematic and better documented assessment processes. I created a School of Engineering Student Assessment of Learning Gains (SALG) template while serving on the Planning and Assessment Council. I have been assisting faculty with implementing online SALG surveys, and developed a Senior Capstone Design evaluation rubric and ABET outcomes matrix and templates. We dedicate time during our weekly faculty meetings to discuss student outcomes in courses and assessment of those outcomes, and to facilitate better coordination and collaboration amongst faculty teaching different courses.

Facilities Energy Efficiency Advisor, May 2014 – present, I advise Buildings & Grounds and work with external vendors regarding improving efficiency of our building systems, improving cogeneration operation, reducing energy costs, retro-commissioning, facilities upgrades, and other building related issues. I represent Cooper Union in NYC Carbon Challenge and NYSERDA REV Campus Challenge working to achieve our commitment to reduce our carbon footprint by 40% from 2014 peak levels by 2030. I submit required annual Carbon Emissions Inventory to NYC Mayor's Office of Sustainability and our annual campus energy use in EPA Portfolio Manager to comply with NYC Benchmarking Local Law 84 saving Cooper significant annual reporting costs. Since my appointment in 2014, we have achieved 10% reduction in energy usage saving Cooper substantial annual energy costs. I identified and coordinated reimbursement of $34,096 in utility overcharges. I coordinated Con Edison Commercial & Industrial Energy Efficiency Program Incentives totaling $12,410. I have saved Cooper approximately $12,000 in costs by coordinating multiple bids from NYSERDA Flex-Tech approved contractors for Testing & Rebalancing work for Local Law 87 Retro-Commissioning compliance. I was recently awarded two NYSERDA grants totaling $321,671 for energy auditing required by LL87, developing an energy master plan, identifying energy conversation measures, training facilities staff, and developing a new energy efficient building systems course.

ASME Student Section Advisor, 2008 - present. I currently serve as the American Society of Mechanical Engineering (ASME) Student Section Advisor (SSA). Before I became SSA, the

Cooper Union ASME Student Chapter was relatively inactive. Since I became SSA in 2008, our ASME Student Section has become very active on campus, in the region, and nationally. We inaugurated and held two Annual Metropolitan Intercollegiate Design Competitions, full-day events bringing over 50 students from five different New York engineering schools together with local industry professionals, section advisors, and ASME officials serving as judges for three engineering design challenges. I help the student section leaders organize a yearly ME Fall Forum, where students are introduced to ASME, the ME professors, and undergraduate research opportunities. We also hold numerous campus-wide and regional networking events, graduate school informational events (Georgia Tech comes annually to recruit), social activities, and design competitions. My students and I have attended annual Student Leadership Conferences with funding from ASME. Our ASME executive board members have served on the District A Student District Operating Board and attended national conferences.

My service as SSA has been recognized by the ASME Metropolitan Professional Section leadership, which nominated me for the 2012 Student Section Advisor Award. The ASME General Awards Committee awarded me the "District A" award and ahonorarium (Note that "District A"encompasses 13 U.S. States, Washington DC, Puerto Rico, and 6 Canadian provinces). This award and nomination packet, which includes five references from ASME district leadership and students, can be found in the Appendix D of this portfolio.

PreK-12 STEM Outreach, ongoing I encourage activities and programs that instill professional and social awareness in Cooper Union students. I initiated an outreach program to create an Interactive Light Studio at the American Sign Language and English Lower School (PS 347) to inspire children, including deaf and hearing impaired, to learn about science and engineering. I co-authored with my students five ASME Diversity Action Grant proposals which were awarded from 2011-2016 totaling $13,000 in funding. This project was featured in an Eyewitness News WABC-Channel 7 segment with 480,400 television viewers, on Time Warner cable news and on "Connect a Millions Minds" nationally and online in many articles. I co-authored with my students two ASME K-12 Outreach conference papers, wrote two ASME newsletter articles about the project, and had our students present this project to the Engineers without Borders New York Professional section.

In Spring 2012, I advised Iridescent's Engineers as Teachers (EasT) program and attended Family Science Session at Iridescent Studio in the Bronx. I volunteered at two LaSalle Academy's Science Day & Fairs and gave four presentations to different classrooms on "my role in the world of science". I have spearheaded STEM outreach sessions together with students at The American Sign Language and English Lower School (PS 347), The Parkside School (PS 130K) in Brooklyn, New Explorations in Science, Technology + Math (NEST+m), and the 43rd Street Kids Preschool. We have created science-related activity cards and manipulatives to encourage science exploration, puzzle play and spatial skills. We used funding from an ASME Diversity Action grant to purchase LEGO WeCanDo Engineering kits and Engineering is Elementary storybooks and curricular kits developed by the Boston Museum of Science and used these in STEM outreach sessions. I have given tours of Cooper Union laboratory spaces and had students present their projects to NEST+m and P.S. 347 faculty and elementary and middle school students interested in engineering (refer to Thank You notes in the Appendix D).

Over the 2013-2014 academic year, I advised a Stuyvesant High School student, Stephanie Kwan, on her New York City Science and Engineering Fair (NYCSEF) and Intel Science Search project entitled *Investigating the Suppression of Mid-Range Harmonics in Violins.* The NYCSEF final report can be found at the end of this section.

Women in Engineering and Society of Women Engineers. I initiated conversations with Admissions on how we can increase women (as well as underrepresented groups and those who overcame adversity/disadvantages) at Cooper Union. These conversations resulted in our taking a second look at Summer STEM candidates during the admissions process last year and having a luncheon with current students to discuss not only increasing women at Cooper Union but how to improve the culture for women.

I gave well-received tours at both the 2016 and 2017 Women in Engineering events. I was later told by current students that these tours were influential in their decisions to apply and ultimately come to Cooper Union. I was invited to the 2010 Annual SWE Intercollegiate Mixer to speak on my career until now, obstacles I have faced, what it is like being a woman in a male-dominated field, and how to manage a career and having a family. I participated on the 2009 Cooper SWE Alumnae Panel.

Other Misc. Service. Since 2008, I have volunteered to help coordinate tours and student volunteers for the Fall Open Houses and Spring Admitted Student Receptions. I served as a judge for the Senior Speech Contest twice, for the Invention Factory, and for the Institute for Sustainable Design "Visualizing Climate Change" fellowship. I helped coordinate installations and presentations every year since 2011 for the annual End of Year Shows. I have attended many Cooper Union events, including Academic Affairs, Board of Trustee Dinners, Cooper Union Alumni Council, and Engineering Advisory Board Meetings. My students and I have presented at the 2016 and 2017 From the Lab events and annually at our End of Year Shows. I used my NSF funding to support Cooper students creating a content management website (engfac.cooper.edu), which Prof. Wolf and I rolled out to the School of Engineering community, so faculty can more easily post course-related materials, student projects, and faculty research.

I have advised numerous mechanical engineering and BSE/IDE students both formally and informally and have written multiple recommendations for over 50 students for graduate schools, job recruiters, internships or REUs. A number of these students were accepted to Master's or Ph.D. programs at places, such as MIT, Georgia Tech, UC Berkley, Penn State, Carnegie Mellon, UIUC and the University of Michigan. One student was awarded a Tau Beta Pi fellowship, three students were awarded the Congress-Bundestag Youth Exchange Fellowship and another a Fulbright Fellowship. I have developed several industry contacts (Chrysler, Arup, TEC Systems, AECom, Smith Engineering, Gradus Group, etc.) resulting in hiring of many of our students and often work with the Career Center to organize recruiting events with companies.

In 2016, I initiated a new Study Abroad program with University of Applied Sciences Karlsruhe and Dresden University of Applied Sciences, which includes travel and tuition scholarships for two Cooper students per year (4 students so far) to attend a 2-week HAWtech Summer School program in Karlsruhe, Dresden and Berlin.

COMMITTEE WORK

Over the past ten years, I have served on the following committees:

Dean Search Committee, Fall 2016 – present

Middle States Commission on Higher Education (MSCHE) Working Group Standard III: Design and Delivery of the Student Learning Experience, May 2016 – present, I collected responses from constituents to help Christine Osinki prepare our self-study response. I view assessment as a tool to critically assess how we operate and as a way for us to find areas for us to improve. As a result of answering the self-study questions, I made improvements to our departmental advising processes, such as by attending an ASME Advising session to help answer student questions before registration. I am leading the ME Department in efforts to continually look at how we advise our students and how to improve the student learning experience overall.

The Cooper Union Institutional Review Board (IRB), 2012 – present. As a member of the IRB, I review research protocols which involve human subjects. The goal of this oversight is to protect the rights, privacy and welfare of all human participants in research while respecting, supporting and enhancing responsible and ethical scholarship activities of the faculty, students and staff.

NYC Dept. of Design & Construction Town+Gown research partnership representative, 2014 – ongoing. I serve as an alternate representative to the NYCDDC Town + Gown, a city-led initiative that facilitates partnerships between academics and practitioners on research projects aimed at making changes in practices and policies. I attend Town + Gown meetings and showcased four student projects related to the built environment at the 2014 NYCDDC Town+Gown Engineering Design Projects Poster Session and at the Wanted Design Industry City Poster Exhibit from May 9-20, 2014 in Brooklyn, NY.

Chair of Ad-hoc Committee on Curriculum Reinvention, Fall 2012. I chaired this committee and led the committee's efforts to benchmark our programs and recommend potential innovative curriculum initiatives. My work on this committee culminated in the *Undergraduate Curriculum Committee Report,* which I authored.

Planning and Assessment Council (PAC), 2013 – 2015. As part of this committee we reviewed assessment data and made recommendations to the administration on planning and assessment. I created a School of Engineering Student Assessment of Learning Gains (SALG) template and have helped a number of faculty, both in the ME Department and outside, implement SALG surveys in their courses.

Advisory Committee on Campus Security, 2008 – 2012. This committee reviewed current campus security policies and procedures and made recommendations for their improvement.

Interdisciplinary Engineering and Bachelor of Science in Engineering (IDE/BSE) Faculty Advising Committee, 2009 – 2012. I volunteered to join this committee out of desire that students in this program have a committed faculty member advise them on establishing a program with depth, rigor, and coherence. From 2009-2012, I have advised 5-7 IDE/BSE per year, in additional to advising approximately 14-20 ME students per year. The ME Dept. is currently reviewing and looking to improve how we do advising in our department.

Engineering Representative to Humanities & Social Sciences (HSS) Faculty, 2009 – 2012

Academic Standards Committee, Summer & Fall 2010, Summer 2011

*ME Transition Committee, 2008 – 2012.*I served on this ad-hoc committee whose charge was to critically assess all facets of the Mechanical Engineering program, to develop recommendations for program improvements and to develop a transition plan to incorporate these changes.

PROFESSIONAL ACTIVITIES

ASME Metropolitan Section. In addition to my involvement in the ASME Student Section, I am an active member of the ASME Metropolitan professional section. I regularly attend Technical Dinner Meetings and Executive Board Meetings and have hosted three events at Cooper Union and given a talk at a Technical Dinner Meeting.

Associate Editor of ASME Dynamic Systems & Controls Division (DSCD) Newsletter, 2009-2014, I solicited and edited articles from events, such as the Dynamic Systems & Control Conferences and American Control Conferences.

Professional Development. I have attended numerous regional and national Engineering Education sessions, proposal writing workshops, and industry technical training seminars. Some of these are listed in my CV.

Peer Reviews: I have reviewed numerous technical papers, textbooks, fellowship and grant proposals, and sat on interview committees/juries. Some of these are listed in my CV.