

## **GIFTS: Engineers in gear: Building a student support model to transcend the COVID era**

### **Dr. Sheldon Levias, University of Washington**

Dr. Sheldon Levias is an Associate Director from the University of Washington's College of Engineering (UW CoE) Student Academic Services Team, and he manages the CoE's Engineering Academic Center, or EAC.

Sheldon has strong connections to the UW, the CoE, and the Seattle area. He holds a B.S. in Electrical Engineering from the UW and an M.A. in Teaching from Seattle Pacific University. Sheldon taught middle school mathematics and science for several years, and went on to obtain a Ph.D. in Learning Sciences from the UW College of Education.

As an undergrad, Sheldon participated in the EAC, and has fond memories of that time. He is extremely happy to have come full circle to support students now as they earn their undergraduate engineering degrees from the UW.

**Dr. Lynne Spencer Ph.D., College of Engineering, University of Washington**

**Mr. Kelsey F Gabel, University of Washington Engineering Academic Center**

## **GIFTS: Engineers in gear: Building a student support model to transcend the COVID era**

University of Washington College of Engineering

The COVID-19 virus pandemic spanning the last two years has profoundly affected all aspects of life, particularly for students and educators. Our university's engineering college community quickly responded to this pandemic by adapting courses to a remote learning format. Our staff, a team within the broader engineering college, adapted to this tectonic shift, creatively adjusting our practices in order to maintain a reasonable approximation of the in-person systems we have been utilizing for many years to support students furthest from educational equity.

Providing engineering academic support in a manner that is accessible and effective for engineering students who identify as women, first-generation, and/or students of color can be challenging in the best of times. The logistical difficulties posed by delivering engineering academic support services during a pandemic exacerbated these issues.

Technology has mitigated some of the effects of shifting to a virtual context. One such example is the adaptation of our *Engineers in Gear* (EIG) model to allow for remote participation. EIGs are 2-hour study sessions the week prior to exams that prepare students for the types of questions that could be asked on their upcoming assessments. EIGs support students taking prerequisite math, physics, chemistry and engineering fundamentals courses.

Each EIG session is led by a peer tutor, a junior or senior engineering student who has successfully completed the course themselves. Some of our session leads have been participants in our academic support programs in the past.

EIG session leads create mock-exams or problem sets with a separate set of solutions. These are archived in our study center repository for future use. When attendance is expected to be high for an EIG session, a second peer tutor will assist with leading the session.

Orchestrating technological tools such as Google Forms (available on our website for student registration and feedback), Zoom, Zoom whiteboards and XP-pens allow our session leads to emulate many of the features of in-person EIGs. Utilizing these multimedia tools and innovative strategies, our team persisted, and we continued providing valuable academic support services to engineering students in a remote environment. Over the course of Winter and Spring quarters, there were 726 total student registrations for our midterm 1, 2 and finals EIG sessions. A common sentiment expressed in student feedback is that they appreciate seeing additional practice problems, and there is easy access to a tutor to get instant feedback in their problem solving.

Our hope is that by sharing our experiences, other engineering educators can utilize this virtual EIG model to expand their repertoire of resources for student success.