

HOTLINE NEWSLETTER

FIRE PROTECTION ENGINEERING
A. JAMES CLARK SCHOOL OF ENGINEERING
UNIVERSITY OF MARYLAND

FALL 2019

CHAIR'S MESSAGE

In this, the 125th holiday season of the A. James Clark School of Engineering, we in Fire Protection Engineering take the time to reflect over that for which we are thankful.

Over the last decade, department research expenditures have doubled, the activities of which include wildfires, battery technology and refrigerant flammability research. In the last four years, undergraduate enrollment increased by over 40%. A second Endowed Chair has been established. In 2017, FPE had its first externally supported graduate fellowship – as of 2019, there are three, one of which is endowed. In the last five years, six new endowed scholarships were established for FPE students. Annual philanthropic support for FPE scholarships, assistantships and laboratories has grown from \$75K/yr to more than \$250K in 2019. Finally, our Design Challenge, a regional high school competition, has grown to eight schools in six years, including Baltimore, Frederick, Howard and PG counties in Md. and Alexandria, Va.

Much of this has only been possible because of the support we receive from our corporate partners and alumni. We thank you for all that you do, and wish you happy holidays!

- Jim Milke

A LETTER FROM FPE ALUM, AMY MURDOCK



Greetings fellow FPE family!

As we continue to grow our industry, I find myself wanting to participate more in the development of the UMD FPE graduates. The dedication from corporate sponsorships, scholarships, and involvement in Department initiatives truly embody the Family that Prof. Bryan started. More than the corporations, *each of us* are individual members in this FPE family and we must continue to support the Department for success!

The Legacy Campaign, Professor of Practice, is one of the many FPE Family success stories and with the continued financial assistance from *all of us*, the position will be solidified by next summer. We can achieve the goal *one donation at a time!* I ask that you *personally consider* giving to [The Legacy Campaign](#) to grow our industry, to grow our UMD FPE Family.

In 2014, Ken Isman, PE graciously accepted the inaugural position as the Professor of Practice. The Legacy Campaign, supported by Dean Pines and Clark School both fundamentally and financially, was initiated by a group of visionary alumni, departmental and Clark School leadership. The campaign has created an endowed fund currently

supporting the Professor of Practice, a permanent faculty member ensuring that the department's curriculum connects theory to applications. Ken has elevated our graduates through his teaching and mentorship. His dedication to the Department has created growth in research opportunities; shifting teaching responsibilities to allow other Professors to expand their research, allowing even more undergraduate and graduate level teaching and mentorship. Supporting The Legacy Campaign, Professor of Practice, supports all aspects of the UMD FPE Family! *Even if you gave in 2014, give again!*

Our goal is to bring the support of the Professor of Practice to \$3 Million by June 30, 2020. Doing so would allow this fund to competitively recruit future candidates to hold this position in our highly competitive industry, provide stability during market fluctuations, and provide the flexibility needed with the ever-changing demands of the role.

We currently sit at \$2.73 million - within striking distance of our goal. I hope that you will join me in supporting this pivotal position as you consider your support of the Department over the next few months.

Please don't hesitate to reach out to [Amy Murdock](#) or [Kyle Zeller](#) with any questions about your support or [make your gift online today!](#)

- Amy

ALUMNI PROFILE: STEVEN STUMPP

Steven Stumpp (M.Eng '10) has more than 10 years of engineering and technical design experience with the U.S. Navy, holding roles from mechanical engineer to naval architect. In his current role as Deputy Ship Design Manager for the civilian arm of NAVSEA, he works on technical design for the next guided missile frigate, making sure the fleet has the capabilities and meets Navy requirements.

Stumpp was working as a fire protection engineer for the Navy when his superiors suggested he enroll in the Clark School's Master of Engineering in Fire Protection Engineering degree program. Not only does UMD have one of the top programs in the nation, the option to pursue his degree online was a big selling point for Stumpp.

"I needed that inch-wide, mile-deep kind of knowledge to help be quickly become a master in the field," said Stumpp. "My leadership relied on me to break issues down into layman's terms for them, so it was crucial to take what I learned in my courses and apply them at work."

Stumpp's degree still pays dividends by giving him a deeper knowledge of how to understand specifications and technical issues, as well as manage risks and ensure the safety of all of the men and women who serve aboard the ships he designs.

"In my time at Maryland, I was lucky to work with some of the best faculty that the country has to offer," Stumpp said. "All of the professors brought varied industry experience to the classroom, showing us how what we learn could be utilized in real time."



ADT SUPPORT BOLSTERS 2019 FPE HIGH SCHOOL DESIGN CHALLENGE



Thanks to support from ADT Commercial, we were able to bolster our offerings for this year's Design Challenge. For the first time, the Department was able to provide transportation for participating students to the November 13th Opening Event as well as supply kits to ensure each team will have an equal opportunity to build their housing models. Several ADT engineers also volunteered to mentor this year's teams, providing guidance to students throughout the academic year as they develop their models. This new funding

also allowed us to recruit from new areas for the Challenge adding Frederick, Atholton and TC Williams (Va.) High Schools to the list of participating schools. The support we received from both ADT and our alumni have contributed greatly to our goal of empowering high school students to pursue both STEM majors, and especially Fire Protection Engineering. The final burn competition will be held in April, 2020, at the ATF lab in Greenbelt. To learn how you can contribute, please send an email to **Kyle Zeller** at kzeller@umd.edu.

FPE RESEARCH IN THE NEWS

BRE tests, created by Profs **Peter Sunderland** and **James Quintiere**, performed aboard the ISS have yielded tremendous insight into how solids and liquids burn in long-duration microgravity. A major finding is that steady-state flames of solids and liquids can exist for atmospheres of enriched oxygen expected in future spacecraft. This had been hotly debated following drop tower tests. The ISS tests also shed light on why most flames will extinguish in air. The implications for spacecraft fire safety are immense. To learn more about this study: <https://go.umd.edu/fpe-iss2>

Stanislav Stoliarov's group examined the

dynamics and hazards associated with cascading failure in Li-ion cell arrays of different cathode chemistries. Each array, consisting of cells loaded with Li-cobalt oxide (LCO), Li-nickel manganese cobalt oxide (NMC), or Li-iron phosphate (LFP) cathode, was placed in a wind tunnel supplied with a controlled gas flow – either nitrogen or air environments – to study the combustion impact. Thermal runaway was induced and then observed to propagate; the propagation speed was found to be greater in air than in nitrogen, offering insight into battery failure in household devices. To learn more: <https://go.umd.edu/SS-cascading-failure>

RECENT ANNOUNCEMENTS

The Fall 2019 semester will be FPE Associate Professor **Michael Gollner's** last at UMD. Gollner, a native Californian whose research on wildland fires and oil-spill remediation has helped elevate the Department's position across the globe, and in the media, will transfer to University of California, Berkeley, in December.

Gollner's insight and enthusiasm will be missed, but we wish him well in his future endeavors! The Department search for a new faculty member is currently underway. For more information, send an email to FPE Chair Jim Milke.

