



Dear alumni and friends of the Division,

Just over one year has passed since I began serving as the Otis Booth Leadership Chair of the Division of Engineering and Applied Science (EAS). My goal has been to enhance the Division's resources and strategies so that we continue to move forward as an intellectually vibrant, diverse, and inclusive destination for the top engineering scholars in the world and maintain our leadership in undergraduate and graduate education, research, mentoring, tech transfer, and outreach. I hope you will see some of the fruits of these efforts in the pages of this issue of *ENGenious*.

It is my pleasure to report that we are continuing to attract the best minds in the world, with five new faculty members joining us this year. Our faculty are unique in that they drive advances that benefit humanity through basic engineering research that addresses deep challenges, and our new hires continue in this tradition. Three of the new faculty are joining EAS as Bren Professors: Aaron Ames (Mechanical and Civil Engineering), Andrew Stuart (Computing and Mathematical Sciences), and Lihong Wang (Medical Engineering and Electrical Engineering). The Bren Professorships have been established under Caltech's initiative to explore new territory

through interdisciplinary approaches to the biological and information sciences, including approaches that have roots in engineering fields. We also welcome Soon-Jo Chung to our Aerospace Department (GALCIT), and the new director of the Jet Propulsion Laboratory, Michael Watkins, to GALCIT as well.

Attracting the best minds in the world means we bring exceptional students to Caltech, and this issue of *ENGenious* features the adventures and accomplishments of 14 current EAS students. As you might expect, they are embedded in research groups that are pushing the limits of engineering education and research, but they are also applying their talents to endeavors that range from school leadership activities to mentoring students from underserved communities.

Covering research in depth, we offer two progress reports in this issue. The first looks at advances in nano- and micro-technologies related to the human eye, and the second considers silicon photonics, which, although still in its infancy, is the basis for the next revolution in communications. In both of these areas, the Kavli Nanoscience Institute (KNI) at Caltech plays a vital role. In conversation with the directors and staff of the KNI, we

discover how the KNI supports myriad research efforts at Caltech, helps push the frontiers of quantum science and engineering, and also plays a crucial educational role in motivating and nurturing students.

Finally, as many of you know, I firmly believe that EAS alumni play a key role in our success and are our best advocates and champions. In this issue, we profile two alumni whose Caltech education has propelled them into becoming influential players in their respective fields, financial services and the construction industry. Their stories illustrate just two of the infinite ways our alumni are shaping our society and the world.

I wish you the greatest success personally and professionally, and, as always, I look forward to receiving your thoughts and comments.



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