

Since becoming Chair of the Division of Engineering and Applied Science (EAS) over five years ago, I have observed again and again that the size effect is the single most important factor that determines the advantages and constraints, as well as the behavior and choices, of both Caltech and EAS. Caltech is a tiny but elite institution with a reputation of outsized impact. Similarly, the EAS Division is very small compared to most schools and colleges of engineering worldwide. In relation to our hiring practices, the size effect translates into our adoption of a very careful approach. It has been to hire young stars, capable of generating multiple interdisciplinary connections with other departments and divisions, whom we support very generously. We also recognize that it is impossible to cover the entire spectrum of engineering activities, so we tend to hire on the basis of overall excellence rather than to fill a specific gap in a research area.

In this issue of *ENGenious* you will be introduced to eight new faculty members. Here I mention them briefly: joining the Department of Applied Physics and Materials Science are Simon Ramo Professor of Materials Science Katherine T. Faber and assistant professors Marco Bernardi and Stevan Nadj-Perge (both joining in 2015). Joining the Department of Computing and Mathematical Sciences are assistant professors Yisong Yue and Thomas Vidick. Electrical Engineering is welcoming assistant professor Victoria Kostina. Returning to Caltech is Joanna Austin (PhD '03), who is joining the Aerospace faculty in GALCIT as a full professor. And finally, the Department of Mechanical and Civil Engineering will be the



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new home of professor Domniki Asimaki. I want to give a special thanks to all the EAS faculty who served on the search committees that selected these stellar new colleagues. We are looking forward to seeing them shine!

Our faculty recruits often inquire about the support they may receive should they wish to bring their research from the lab to commercialization, and I am delighted to let them know about the work of the Caltech Office of Technology Transfer and Corporate Partnerships (OTTCP), which is being featured in this issue of *ENGenious*. Start-up creation and technology transfer activities are absolutely flourishing within Caltech. EAS has played a leading role in these efforts, and our faculty have been among the main beneficiaries of Caltech's technology transfer revolution. Since 2007, 28 start-up companies have been founded by EAS faculty. Caltech (excluding JPL) receives more invention disclosures per faculty member than any other university in the nation. In the last

10 years, licensing efforts have resulted in 40 to 50 patent licenses per year, and OTTCP fosters start-up companies at a rate of about eight per year—a very high number in view of our small size.

Finally, I have wonderful news to share regarding three exceptional gifts to Caltech from Foster and Coco Stanback. First, GALCIT will be establishing a mentorship and research program with Orange Coast College called Bridge to the Future: NXT Program. This program is centered on the development of a special-purpose bio-fueled aircraft. The project is a test bed for new composite materials and technologies. The imaginations of the faculty have been piqued in a new direction, and this project gives them and their students an opportunity to mentor community college students in research and to encourage them to pursue advanced degrees in a variety of engineering fields.

In addition, the Stanbacks are establishing an endowment for the Foster and Coco Stanback Fellowships in EAS, which will allow us to bring stellar graduate-student talent to Caltech in any area of aerospace engineering—giving us the opportunity to nurture and develop these young people to create impact in areas with which we are familiar and, most importantly, in areas in which we only dream at present.

These two gifts will contribute to the vitality and evolution of GALCIT and the Division both in the short and long terms, and they would be cause for great celebration on their own. However, the Stanbacks are also endowing the Foster and Coco Stanback Space Innovation Fund in EAS, permitting us the incredible freedom to pursue the best ideas from wherever they spring and in perpetuity support space-related engineering research across the entire Division—the type of research that is the hallmark of the Caltech style and vocation.

Taken together, the Stanback gifts total \$7.8 million and represent enormous opportunities for EAS to create lasting impact in research and in the development of



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human potential. I would like to thank Foster and Coco for seeing so clearly into the heart of Caltech, particularly in the areas of aeronautics and space, and for taking such magnanimous action on our behalf.

Yours proudly,

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