

30 UNDER THIRTY



In January, *Forbes* magazine presented its annual 30 under 30 listing of young game changers, movers, and makers. Included are three GSAS students (and six alumni, detailed in Noted on page 26) who personify the amazing work undertaken by our graduate students.

Evan Daugharthy, a PhD candidate in systems biology, helped develop a new technology called *in situ* sequencing, which allows researchers to detect single RNA molecules where they naturally reside—inside biological samples. “I’m currently in the process of extending this technology to detect other types of biomolecules, such as proteins and DNA,” Daugharthy says. “This is really exciting because it’s the first time researchers have been able to look inside cells and see thousands of different types of molecules at the same time.” *In situ* sequencing holds the potential to affect many different fields, including the study of development, neuroscience, and cancer. “For example, every tumor is different at the molecular level, having a unique pattern of single-cell cancer mutations, or infiltration of immune cells,” he explains. “*In situ* sequencing can detect this variation and find chinks in the tumor’s armor that a doctor can target with a specific drug.” This “personalized medicine” approach to cancer treatment may ultimately improve outcomes and reduce costs.

While winning the award was surprising, Daugharthy was pleased to be included. “I know several other people who have won this award and done really great things, so I was honored to join their ranks,” he shares. “It’s great that the *Forbes* editors and award committee recognize the potential of my research to influence the future of healthcare.”

Eran Hodis, an MD/PhD candidate in biophysics, studies how genetic mutations contribute to cancer, particularly melanomas. Working in the labs of Levi Garraway and Aviv Regev at the Broad Institute, Hodis investigates malignancy at the molecular level as he attempts to elucidate how a normal cell becomes cancerous. “This knowledge is interest-

ing and valuable in its own right, but, crucially, molecular understanding of disease underpins our best efforts to discover effective treatments,” he says. “An important next question for us to ask, especially of the newly-discovered and poorly-understood mutations, is ‘How do various constellations of mutations act in concert to transform a normal cell into a cancer?’” Being named to the *Forbes* list as he attempts to shed additional light on this well-studied question is a great honor, but one Hodis knows is shared. “It always feels great to have your work recognized, especially in a public manner,” he says. “Being selected is recognition not only of my own efforts, but of the efforts of all of my colleagues and of the mentorship of my advisors.”

Though only 21, this is not **Sabrina Gonzalez Pasterski**’s first 30 under 30 award. As an MIT sophomore in 2012, she was named to *Scientific American*’s 30 under 30 list for her reputation as an up-and-coming physicist. Pasterski studies high energy theoretical physics, believing that it holds the potential to transform multidisciplinary fields. “I see no limit to what we can achieve and view the word ‘impossible’ as a challenge,” she says. “This kind of physics will create undreamed of advances that transform the way we live and the world we live in.”

Pasterski took her first flying lessons at age 9 and, a few years later, decided to build her own airplane, which she flew solo the summer she turned 16. Asked what it felt like to be named to the *Forbes* list, she said, “It feels awesome! Like sticking the landing on my first solo flight.”

Recently, Pasterski coauthored a paper with Andrew Strominger, the Gwll E. York Professor of Physics and director of Harvard’s Center for the Fundamental Laws of Nature, that proposes a new method for detecting the net effects of gravitational waves. Strominger has since moved Pasterski, as a second year graduate student, into “Mode 2,” where she is given the latitude to work without his direct supervision on any topic of her choosing with anyone she wishes. ☐