That suggests another five to six years to achieve a targeted endowment allocation, and a subsequent multiyear period to harvest the results. In the meantime, HMC and the University are also deep into an exploration of Harvard’s risk tolerance and the appropriate investment allocation and portfolio construction to achieve it.

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This is a long game, with crucial implications for the future fulfillment of Harvard’s academic mission. The institution is fortunate to pursue it fortified with operating surpluses and the support of dedicated, generous supporters. For detailed analysis of the financial and endowment reports, see harvardmag.com/financial-endowment-reports-19.

~John S. Rosenberg

Preparing for a Profession

Last summer, especially ambitious students enrolling for a Harvard professional education could have begun work simultaneously on their M.B.A., J.D., and Ed.M. degrees while the University was out of session. That possibility is, thankfully, impractical—and contrary to the intent of what is in fact a promising advance in post-college education. Several schools have deployed online instruction during the months before matriculation to introduce managers-, lawyers-, and teachers-to-be to the vocabulary, skills, and teaching styles they will encounter in the classrooms at the business, law, and education schools.

These summer experiences hold the potential for at least two significant educational gains central to the University’s mission. First, they equip students to learn from day one: an investment in their intellectual productivity, as they embark on expensive professional degrees. Second, they assure that increasingly diverse student cohorts—from different socioeconomic backgrounds (and increasingly, countries), college concentrations, and prior work—embark on their learning with some common preparation: a commitment to more fully inclusive schooling at Harvard. Over time, such instruction may be introduced by other University faculties, adopted by other institutions, and even offered for sale (the three-course business sequence already is).

• CORe. Harvard Business School (HBS)
Cohen recalled his own 1L experience as the most intellectually stimulating year of his life—but also the “most overwhelming,” a “baptism by fire.”

Because today’s HBS M.B.A. students are internationally diverse, from many different undergraduate traditions, and arrive in Allston with “broader backgrounds” in academic concentrations and prior business experiences, compared to past cohorts, CORe’s acculturating effects are, at a minimum, likely important for their comfort with and academic productivity in their first classes.

- Zero-L. Harvard Law School (HLS) aims explicitly at making students feel comfortable and at home through its puckishly named online program, run for the second time this past summer. The introductory module opens with a photo of an expressway on-ramp, and the 10 hours or so of short videos mix lectures and conversations with a wide array of faculty members, all of them at pains to speak personally and even humorously. Attwood and Williams professor of law I. Glenn Cohen, who led the faculty development team, jokes about his favorite federal statute (your pig wanders into fenced-in public areas: look it up); and in perhaps the bravest performance, Story senior lecturer on law Susan M. Davies introduces federal legislation by singing the Schoolhouse Rock lyric about how a bill becomes a law.

Although there is plenty of legal content, the focal points of the program are not so much substantive as instructional. An 11-module sequence shows how to read and brief a case (students are reassured that, specialized though it may seem, such close reading is not “discontinuous with what you’ve been doing your entire academic career”). And an eight-module mock classroom, conducted by Cohen and four upper-class students, illustrates the Socratic method. In the previous unit, Watson professor of law Jeannie Suk Gersen tells Cohen that being called on to speak out in class “was definitely one of my sources of anxiety,” before going on to explain that the intent, nowadays anyway, is to be “nurturing and supportive,” not imperious.

In the final module, Cohen talks with John F. Manning, who started the program shortly after becoming dean in mid-2017. Recalling his own nervousness as the first member of his family to graduate from college and go to law school, the dean said the best advice he got about his own sense of insecurity came from his mother, who told him, “Don’t compare your insides to other people’s outsides.”

Assessing the program’s aims and early results, Cohen recalled his own 1L experience as the most intellectually stimulating year of his life—but also the “most overwhelming,” a “baptism by fire.” Explaining everything from the structure of the U.S. legal system (one-sixth of entering J.D.s are from other countries) to varieties of professional practice—and embedding the contents in HLS’s pedagogy—enables students to acquire a sense of their forthcoming curriculum. And all 1Ls know that their peers have been exposed to the same material in the same way—which helps some overly wound-up matriculants relax and learn more naturally. An analysis of student comments yielded “prepared” and “excited” as the top descriptions.

- HPL. The Graduate School of Education (HGSE) is two summers into pilot-testing How People Learn (HPL), an entry-level, online program for master’s students. It aims to produce “a common core experience for all incoming master’s students at HGSE. The course will focus on connecting the science of learning and human development to professional practice in education across roles.”

This is an ambitious project, and one in which the school itself is the student. “Education” encompasses many possible professional paths, and there is far more disagreement on what an educator—as compared to, say, a law student—needs to know. Indeed, the definition of the profession, and how best to prepare HGSE degree candidates, are the subject of considerable work within the school now, as it considers its 13 Ed.M. tracks and determines what core competencies (in,
Award on Friedman University Professor Charles M. Lieber and Armand Paul Alivisatos, executive vice chancellor and provost of the University of California, Berkeley, for their pioneering work in nanoscience and nanomaterials. They shared a $500,000 honorarium. Some of Lieber’s work, with important biomedical applications, was reported previously at harvardmag.com/lieber-17.

Addressing autism. Harvard Medical School will lead a University research program on the biological causes of autism-related disorders. The work is funded by a $20-million gift from K. Lisa Yang and Hock E. Tan, M.B.A. ’79, CEO of Broadcom; the initiative will be named in their honor. Pusey professor of neurobiology Michael E. Greenberg, chair of the department of neurobiology, will be the inaugural faculty leader. The Harvard program expects to collaborate with a similar center, funded by the same donors, at the McGovern Institute for Brain Research at MIT (Tan’s undergraduate alma mater).

Honor roll II. Higgins professor of molecular and cellular biology Catherine Dulac (see “The Mr. Mom Switch,” May-June 2015, page 11) and Pusey professor of neurobiology Michael E. Greenberg—chair of the department of neurology, and inaugural faculty leader of the new autism program—were jointly awarded the Society for Neuroscience’s Ralph W. Gerard Prize for lifetime achievement in neuroscience. Eni, the Italian oil and gas company, has conferred its Energy Frontiers award, for research on renewable energy sources and storage, on Sykes professor of materials and energy technologies Michael J. Aziz and Cabot professor of chemistry and professor of materials science Roy G. Gordon for work on an innovative battery technology.

Landscape laurels. The Cultural Landscape Foundation has established a biennial $100,000 prize in landscape architecture, named in honor of Cornelia Hahn Oberlander, B.L.A. ’47—a graduate from the Design School’s second cohort of women. It will be conferred beginning in 2021, the centennial of her birth.

say, data analysis, cognitive and learning science, management and leadership, and policy) the students enrolled in future master’s programs may need to acquire.

In this sense, HPL and HGSE’s curriculum are simultaneously being built anew, shaping each other. Enrolling master’s candidates may be even more diverse in background and interests than those headed for HBS and HLS, and so may especially need common preparation for their Cambridge studies—which are compressed into a single year on campus, rather than two and three at HBS and HLS, respectively. What could be more appropriate than their doing so at a place that is itself demonstrably a learning organization?

An in-depth report on these programs and their possible application elsewhere at and beyond Harvard appears at harvardmag.com/on-ramps-19. ~J.S.R.

THE UNDERGRADUATE

Working at Beauty

by Drew Pendergrass ’20

One of the more frustrating things about learning math is that professors insist it is beautiful. Imagine not just asking toddlers to eat their vegetables, but demanding they appreciate the subtle interplay between asparagus and a balsamic glaze, and you will have some sense of how I felt when I enrolled in my first college math course. After a long night of writing proofs, fueled by off-brand cereal and stale coffee, beauty was too high a concept for me. I came to see aesthetics as a kind of bragging. Saying math is beautiful is like riding a bike with no hands—it implies total mastery. I found it very annoying.

Just before Thanksgiving my freshman year, a friend and I were struggling to prove an abstraction about convergence—the way patterns of numbers fall together at infinity. We were frustrated, tired, and the Doritos stocks were running low. It felt like we were fiddling with tiny loops of yarn in a knitted tapestry, working endlessly on fine motions of logic. Suddenly, we both stepped back from the blackboard in astonishment. The minutes of chalk appeared a deep connection, fusing completely different ways of thinking about convergence into a united picture.

The novelist Marilynne Robinson sees beauty as intimately related to a sense of wholeness, a way of holding a complex system in the palm of the hand without crushing it into something simpler. To a pair of young math students, the proof was staggeringly beautiful, connected and branching like a tree. Math, I’ve realized, is like wandering through an art museum flooded with maple syrup. It takes all my strength to trudge from painting to painting, hours of hard work behind every proof. After all that effort, after I’ve slogged to the next piece of art, I usually don’t feel anything beyond a vague appreciation. But, just as I’m about to give up, I see something that kicks me in the stomach. I don’t know where those moments of beauty come from, what snaps and lets unrelated ideas suddenly fall together into something transcendent. The mathematician Alexander Grothendieck said that the perfect proof is like a nut submerged underwater—after weeks and months of letting the shell soften, suddenly it peels open as naturally as a flower. Something that extraordinary must be shouted from the rooftops.

The most beautiful thing about beauty is its resistance to capture, its fluidness. Beauty cannot be owned, not even linguistically, which is why great art leaves us breathless. “Human speech is like a cracked kettle on which we beat out tunes for bears to dance to, when we long to move the stars to pity,” write Gustave Flaubert. With description gone, the only response to beauty that remains is duplication. Beauty demands to be shared, copied, and imitated—so social media fills with photos of sunsets, Monet paints multiple haystacks, and mathematicians organize conferences.

After soaking in the moment of convergence that November night, my friend and