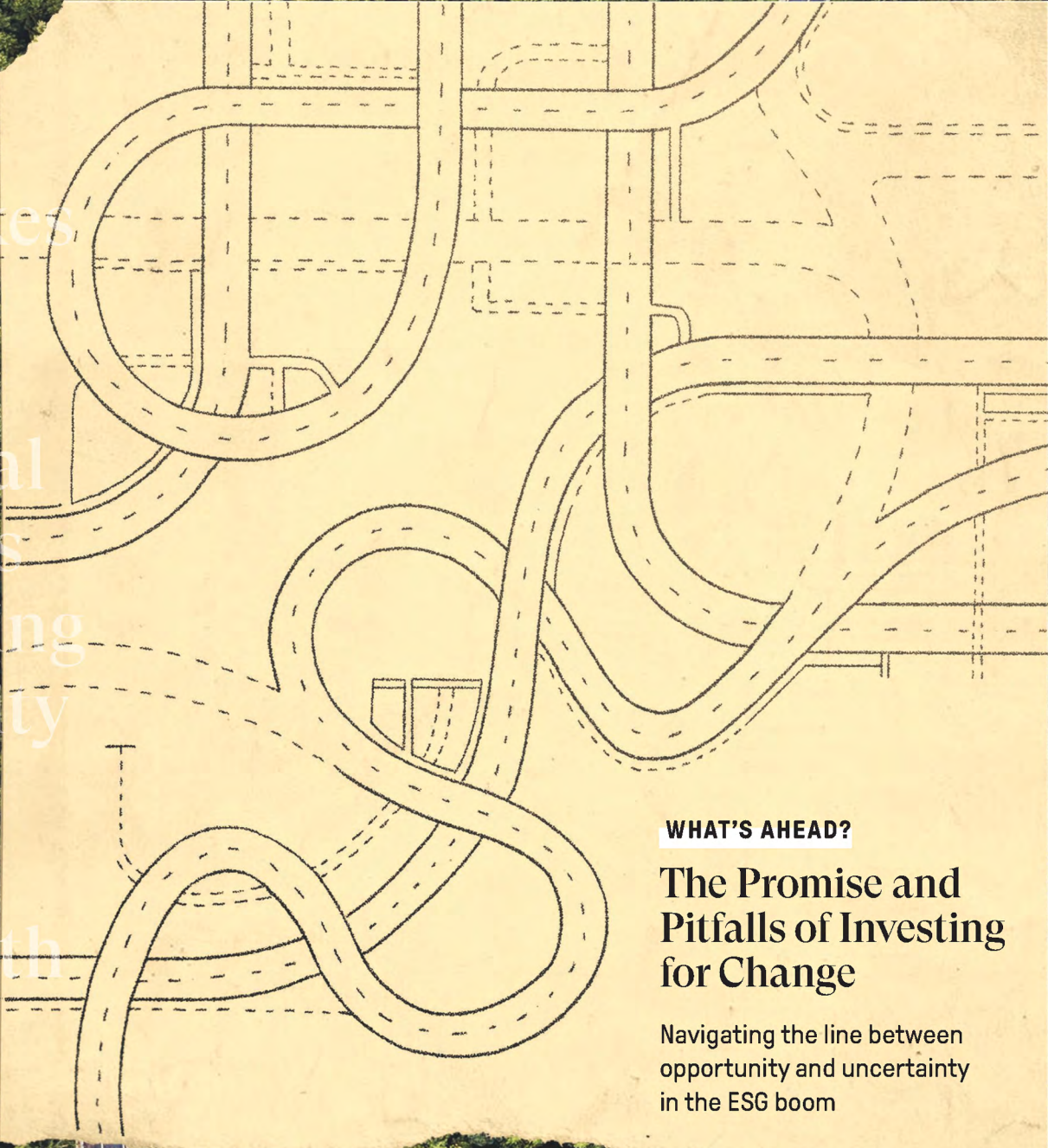


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WHAT'S AHEAD?

The Promise and Pitfalls of Investing for Change

Navigating the line between opportunity and uncertainty in the ESG boom



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A LETTER FROM DEAN JONATHAN LEVIN

How Business Can Guide Technological Progress

Last September, I was appointed to President Joe Biden's Council of Advisors on Science and Technology. When PCAST was established by President Franklin D. Roosevelt in 1933, it was focused on helping the country recover from the Great Depression. Today's focus is on how science and technology can create solutions to address economic prosperity, national security, public health, and climate change. Or, in the words of President Biden: "What next? How can we make the impossible possible?"

At Stanford GSB, we are asking the same questions — and technology plays an undeniable role in answering them.

Today, we are experiencing a revolution in data and computation, new communication technologies whose adoption accelerated during the pandemic, and potential breakthroughs in biomedicine and clean energy. These advances can transform lives around the world. They also come with risks: the potential to exacerbate societal inequities, displace workers, or degrade human and political interactions.

A key insight of modern economics is that the direction of technological change is a societal choice. We often think of this choice as one of policy; indeed, for many years after WWII, the federal government controlled the majority of national R&D spending. Today, business accounts for almost three-quarters of national R&D. As such, business has a greater opportunity to develop and deploy technology to improve people's lives and a greater responsibility to mitigate its potential harms.

In an era where business decisions drive technology, the GSB's leadership hinges on the research of our faculty, the way we teach students, and the impact of our alumni. Our strategy emphasizes preparing students to shape and guide technology responsibly, enabling our faculty to translate their ideas into practice, and collaborating across Stanford to marry the university's technical and scientific expertise with GSB management, entrepreneurship, and leadership.

A few examples illustrate some of the exciting activity going on at the GSB. In 2019, we started the Golub Capital Social Impact Lab to improve the effectiveness of social sector organizations through technology and



Jonathan Levin is the Philip H. Knight Professor and Dean of Stanford Graduate School of Business.

social science research. Professor Susan Athey, the lab's director, has led teams working on charitable giving, healthcare, education, and financial inclusion. This spring, she is teaching these methods in *Designing Experiments for Impact*, part of the GSB's Action Learning Program.

Paulo Somaini, an associate professor of economics, recently proposed revisions to the methods used to allocate donated kidneys that could significantly shorten waitlists. Professor Gabriel Weintraub, who teaches *Data Science for Platforms*, helped Chile design its COVID public-health policies. And Associate

Professor Daniela Saban, who teaches our core class on optimization and modeling, has partnered with companies to improve their market designs. She recently helped a major dating platform increase matches by 30% — a great example of technology for good.

Last month, in the GSB's Center for Entrepreneurial Studies, *Startup Garage* students presented technology-based solutions for everything from postpartum depression to the speed of clinical trials and methane emissions management for farmers. The intersection of healthcare and technology is a particularly active area. We are also seeing cross-disciplinary teams in areas ranging from biotech to workplace inclusion and sustainability.

A cross-disciplinary approach is especially important when it comes to incorporating ethics and social responsibility into applications of technology. Faculty members Neil Malhotra, Greg Martin, and Ken Shotts, who teach our *Leading with Values* core class, increasingly incorporate technology into case studies. We have been partnering on faculty research, courses, and executive programs with the new Stanford Institute for Human-Centered Artificial Intelligence, which seeks to bring ethics into frontier applications of data and computation.

At a recent PCAST meeting, President Biden urged us to "imagine the future and to figure out how to make it real and improve the lives of the American people and people around the world." His words capture what we hope for at the GSB, what we strive to accomplish in supporting our students and faculty, and what we can bring to the world. **GSB**

Business has a greater opportunity to develop and deploy technology to improve people's lives and a greater responsibility to mitigate its potential harms.



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“Creatio ex nihilo, or creating from nothing. That’s what design is. We absorb the energy of the moment, and we reflect its inherent beauty in everything we create.”

— Jason Mayden, MS '11, talking about the experiences and ideas that have inspired his career as a product designer.

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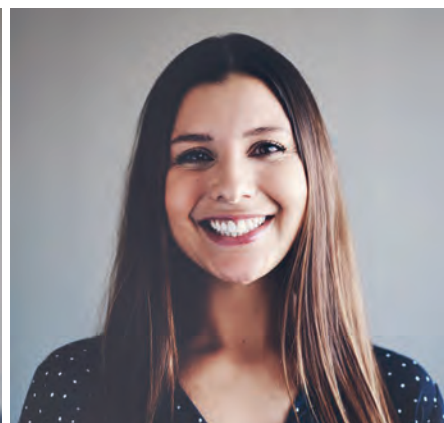
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How 2021 Nobel laureate Guido Imbens helped kick-start the
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ON THE COVER

Illustration by Tyler Comrie and Dexin Chen

“I lifted the glass ceiling as high as I could. Then, **Stanford** helped me break it.”

—SUSAN HARMAN, MBA '79



Susan is a member of **Legacy Partners**—a visionary group who’ve chosen to remember the Graduate School of Business in their estate plans. Their gifts ensure that future GSB students have the kind of life-changing experiences Susan had and go on to “change lives, change organizations, and change the world.”

For information on how you can leave your legacy or to request a confidential conversation, contact Susan Le Corre, Senior Director of Development, at slecorre@stanford.edu or 650.862.5210. Or visit us online at gsb.stanford.edu/giving/legacy-partners.

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EDITOR'S NOTE

What's the Big Idea?

TALK TO US

Have some constructive criticism? Praise? Story ideas? We welcome your input. Please email the editors at stanfordbusiness@stanford.edu.

As I sit down to write this, I recall the words of the regional manager of a fictional midsized office-supply company: “A blank piece of paper equals endless possibilities.” That’s supposed to be motivational, but it’s also kind of intimidating. Great ideas rarely pop out of our minds and onto the page fully formed and ready to change the world. More often, they’re the product of hours of preparation and iteration, as well as a fair amount of perspiration.

The hard work that goes into the pursuit of bold ideas comes up a lot in this issue. Our profile of Professor Guido Imbens (“An Unexpected Result,” page 50), who shared the 2021 Nobel Prize in economics, is a story of intense curiosity and patient collaboration. Those are also hallmarks of the creative process followed by Jason Mayden, MS ’11, a designer who draws inspiration from everything from birds to *Batman* (Maker, page 16). It begins, he says, by asking “big questions.”

Big questions are at the heart of *Business and Government* (“Obstacle Course,” page 44), a new class in which Professor Anat Admati and lecturer Robert Siegel, MBA ’94, push students to interrogate their responses to contemporary problems. That, in turn, echoes a lesson from Professor Deborah Gruenfeld (Class Takeaways, page 15) about how effective teams succeed by challenging assumptions.

Our cover story, “The Promise and Pitfalls of Investing for Change,” takes a bite out of a complex topic that we will undoubtedly come back to. It presents bullish and cautious perspectives on the growing movement to link profits and growth with societal and planetary progress. It’s a provocative idea, and its proponents acknowledge it’s hard to get right. But, they argue, inaction poses a much greater risk. Sometimes, leaving the page blank is not an option.

— Dave Gilson

In the Fall 2021 issue, the article “‘What’s a Nice Girl Like You Doing in a Place Like This?’” incorrectly stated that the five women of the Class of 1972 made up the largest cohort of women at the GSB to date. In fact, there were seven women in the Class of 1970. We apologize for the error.

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ON CAMPUS

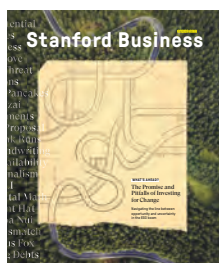
Where Innovation Is in the Air



Located in a sunny corner of the Knight Management Center, the NGP CoLab is a coworking hub that provides space and resources for students developing new business ideas. Right, artist Meredith Sadler visualizes the energy and collaborative spirit amid the CoLab's signature whiteboards and sticky notes.



ELENA ZHUKOVA



ABOUT THE COVER

In their illustration, Tyler Comrie and Dexin Chen convey the sense of possibility as well as the unknowns surrounding sustainable investing. Their work also accompanies our cover story on page 30.

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Briefings



TEACHING

A Sound Education

There's a new way to learn from case studies: introducing the podcast

While reading the case study “The Opioid Epidemic,” students in the GSB’s core class *Leading with Values* disentangle the events that led to 400,000 deaths from opioid overdoses in the United States between 1999 and 2017. And when Professor Ken Shotts introduced an audio version of the case, students had a new way to absorb the scale of the crisis: the daily death toll from opioids represented as raindrops. What begins as a *drip, drip, drip* eventually becomes a deluge.

They were hearing the first version of a new teaching tool — a “podcase.”

It began as an experiment. The GSB’s instructional media team was looking for an opportunity to make an audio version of a case study when multimedia producer Kelsey Doyle identified a good candidate. “The Opioid Epidemic,” written by case writer Sheila Melvin, “was like a story you would read in *The New York Times*,” Doyle says. “I thought, ‘This could be



HEAR HERE
 Find links to these
 podcasts at
[stanford.io/
 podcase.](https://stanford.io/podcase)

a podcast.” She approached Shotts with the idea, and he quickly signed on.

“It was something I could imagine working really well in class,” says Shotts, a professor of political economy. “If it’s available in audio form, some students will pay more attention to it, absorb it better, and may find it more engaging.”

Of course, “Being realistic, some may listen to it while they’re working out,” he says, smiling. Shotts was alert to this potential downside. “If I get the sense that the podcase makes them happy, but makes learning worse, then we’re not going to do this. So far I don’t feel that.”

Instructional media staff, part of the GSB’s Teaching and Learning Hub, have produced hundreds of videos for faculty over the past decade or so, and more

SEEN AND HEARD

“As long as you are speaking the truth, and as long as you are yourself, then that should be your form of advocacy.”

— Nobel Peace Prize winner Malala Yousafzai, speaking at View From The Top in October 2021. Listen to the interview at stanford.io/vftt-malala.

recently have begun to dabble in audio storytelling. Justin Willow, associate director of instructional media and the manager of the podcase project, says it's important to give students "ways to absorb material without sitting and looking at a screen."

The initial podcase involved staff from multiple departments and took more than three months to make.

"We realized that if we really wanted this to come to life, it had to be more than just Kelsey and me reading the script," recalls digital content producer Jenny Luna, who helped narrate the podcase. She and Doyle found audio clips from the public domain and enlisted other staff members to do voice-overs. Willow says identifying and creating auditory enhancements — such as the "sonification" of the overdose data in the form of raindrops — was essential for making the podcast work. "It's not entertainment, but it must be engaging," he says, noting that it also had to be faithful to the written case study. "We want to make the audio as informative as a data visualization can be — both for people who choose to learn by listening, and those who might be visually impaired."

While production of the opioid podcase was underway, Shotts approached Doyle about doing a second one based on a case that he and Melvin were developing about intellectual property and access to COVID vaccines. Instead of three months, the team produced it in three weeks. "We had learned a lot," Willow says.

Students gave the first two podcases high marks. Of the 120 who listened, more than half rated them "extremely useful" or "very useful." Said one: "[The] podcast is really easy to follow and remember. I hope to have more."

Given the positive reaction, Shotts says podcases could become a standard offering for case studies that fit the format. "Usually when students like something, and are engaged by it, it's good for learning."

The podcases are now available to the podcast-hungry public. "If it's something others can use," Shotts says, "that's a great reason to offer them outside the GSB."

— Kevin Cool

PANELISTS

Perspectives on the Pandemic, Jobs, and Inequality

Voices from *Reimagining Work Post-COVID*, a webinar series hosted by Professor Brian Lowery and sponsored by the Leadership for Society program



"There is no industry that is immune from the effect of technology on reshaping the way work happens, and potentially automating certain occupations out of existence.... I worry less about 'Are all the jobs going to go away?' and more about 'What are the occupations that employ 50,000 people, 100,000 people that in the blink of an economic eye in two or three years might wink out of existence?'"
 — Roy Bahat, head, Bloomberg Beta



"Our care infrastructure is broken. If you are at home taking care of your family, taking care of your kids, taking care of an elder — that is work. And we have to make sure that you are compensated for that.... Over the course of this pandemic, I stayed at home with my two-year-old... while I was also running an organization. That's some of the hardest work I have ever done." — Aisha Nyandoro, CEO, Springboard to Opportunities



"This is the first time in human history where we have had five and six birth cohorts working together in the same workforce at the same time.... When we talk about the aging workforce, it kind of focuses us on those 65 and older. But really the issue is, how do people from very different backgrounds, very different ages, work together in a way that optimizes that diversity?" — Laura Carstensen, Fairleigh S. Dickinson Jr. Professor in Public Policy, Stanford



"It is hard for those of us who have been successful in America to grapple with and really confront the aspects of our society and our systems that are fundamentally unfair.... When those of us who own real estate, own second homes, have been able to invest in the equity markets, we are so much better off, two years into a pandemic, there is something fundamentally problematic that ought to encourage us to interrogate our systems." — Darren Walker, president, Ford Foundation

MERYL ROWIN



LISTEN

Join GSB finance professor Jonathan Berk and the Wharton School's Jules van Binsbergen on their new podcast, *All Else Equal: Making Better Decisions*, where they and their guests talk about avoiding common missteps in decision-making. Hear more at stanford.io/equal.

RECOGNITION



Michele Gelfand, professor of organizational behavior, was inducted into the National Academy of Sciences.

Sandra Horbach, MBA '87, will receive the Stanford GSB Excellence in Leadership Award.

Robert King, MBA '60, and his wife, **Dorothy King**, will be awarded the Degree of Uncommon Citizen in recognition of their rare and extraordinary service to Stanford University.

Hau Lee, professor of operations, information, and technology, was appointed to a two-year term under the Secretary of the Department of Commerce on the Advisory Committee of Supply Chain Competitiveness to help develop programs to strengthen the U.S. supply chain.

Mark A. Wolfson, founder and managing partner of Jasper Ridge Partners, and longtime member of the faculty, will receive the Stanford GSB Ernest C. Arbuckle Award.

Eric S. Yuan, SEP '06, and CEO of Zoom Video Communications, Inc., accepted the Stanford GSB Entrepreneurial Company of the Year Award (ENCORE).

The Stanford GSB 2022 Siebel Scholars are MBA students **Marcia Austin**, **Andrew Hanna**, **Evan Mendez**, **Caroline Sohr**, and **Christopher Stromeyer**.

HARD LESSON

Andy Laats, MBA '97: When a Smart Conversation Is the Wrong Conversation

My partner Chad DiNenna and I founded Nixon watches in 1997. Our goal was to create a premium product sold through surf, skateboard, and snowboard shops. We wanted to make watches that not only told time but also expressed your personal values and style, and that would stand up to gnarly environments. You could take it surfing, and it wouldn't leak.

One of our fundamental beliefs was that we had to support the small hard-core retailers first and foremost. We said, "We have to be the best brand in our category in the surf shop on the corner. If it's not working there, the whole thing crumbles." The theory was: the stronger the roots, the bigger the trunk, the higher the tree.

And that worked. We grew steadily and ended up selling the company to Billabong in 2006. Ironically, they eventually decided that our product category wasn't as core to the action-sports industry as their other brands, so they divested us. In 2012, we partnered with some private equity investors and bought Nixon back.

By this point, Nixon was in some of the better department stores, but not the second-tier stores where a lot of volume happens. Around 2013, our investors began to urge us to take the brand to these other big retailers, so we could really step on the accelerator and grow the brand.

Of course, we were worried how that might damage our reputation among the core retailers and customers, and it became the focus of much internal debate. I remember one of our investors saying, "Hey guys, you have to lose your virginity at some point." And we were like, "Believe us, we want to have sex. We just want to make sure our reputation's intact when the lights come on in the morning."

But it was hard to argue against his point. If you're in a total of 3,500 retail locations around the world and you can point to a handful of retailer chains that would add another 2,500 locations, you don't need a Stanford MBA to do that math. You could see how the growth could really accelerate.

And so we were really wrapped into this conversation, because our strength had always been in the effectiveness of our brick-and-mortar presence in the coolest shops. We were very good at in-store visual merchandising and supporting retailers. But that strength turned into



SERGIO MEMBRILLAS (COINS); RYAN FIELD (PHOTO)

BY THE NUMBERS

Shedding Light on DARC

282

terabytes of storage are on the computing cluster run by the GSB's Data, Analytics, and Research Computing team

15.3m

copies of Shakespeare's complete works could fit in DARC's storage

110k

jobs have been submitted to DARC since February 2020, much of it faculty research involving gigantic datasets





ANDY LAATS, MBA '97, is the cofounder of Nixon, which makes watches and other accessories for the action-sports market.

a blind spot, because while we were having that argument, we were barely thinking about online sales.

We had spent over 15 years developing relationships. It's really tough to just say, "Hey, thanks for the last 15 years, but everybody's buying online now, so we're going to go over there." We couldn't just abandon our partners. But at the same time, new companies who focused exclusively on online sales and didn't have those relationships were suddenly kicking our ass.

It took us a couple of years just to get our internal engine right, but eventually our DTC channel started showing positive growth and became a crucial part of our income stream. But that was years in the making, and we were definitely late to the party.

When I look back on it, I see that all of our arguments and concerns about expanding into department stores, and how that would hurt the brand, was wasted calories. It was a smart conversation, and I think we came up with the right answer for the conversation we were having. We were just having the wrong conversation. — *Told to Steve Hawk*



HOW TO

Cold Open: What the Leftovers in Your Fridge Say About You

In her recent book *Creative Acts for Curious People*, Stanford d.school executive director Sarah Stein Greenberg, MBA '06, offers 81 chapters of advice, tips, exercises, and activities for nurturing creativity and collaboration. There's a

warm-up involving a zombie apocalypse. Then there's the Banana Challenge and the Hundred-Foot Journey Map and First Date, Worst Date.

One of our favorites is What's in Your Fridge? Developed by Lia Siebert, MBA '07, the vice president for product and design at Cleo, this icebreaker uses something familiar to reveal fresh perspectives. Here's how it works:

- 1 Put people in pairs and ask them to share photos of the inside of their refrigerators.
- 2 Invite observations from each partner about the other's fridge. What did they notice? What do the contents imply about the person? Siebert urges participants to "ask 'why' a lot." Put the photographs side-by-side and talk about the differences.
- 3 Encourage partners to probe when they sense an emotional response to a question. "You know you're doing well if you start to hear family stories, embarrassed laughter, pride, fears, hopes, or rituals," Greenberg writes.

A similar exercise could feature a bathroom cabinet, a car trunk, or a bookshelf, Stein Greenberg notes. "The trick is to select something thematically related to your work that's more personal than you would generally show a stranger, but not so private that you can't get people talking."

Siebert says she got the idea while working with people in healthcare focused on childhood obesity. What is in a person's refrigerator may reflect norms and habits. Or not. "What people think they should do is often very different from what they actually do," Siebert says in *Creative Acts*. "In that gap lie important insights about beliefs, values, barriers, challenges, and motivations. Once you get people talking within this gap, you reveal many opportunities for creative solutions." — *Kevin Cool*

119b

records are stored in DARC's cloud platform

4.7k

"Turkers" have been used by DARC to do jobs on the crowdsourcing platform Mechanical Turk

327k

DARC-related tasks such as parsing documents have been completed on Mechanical Turk

20k

movies were compiled into a dataset by Assistant Professor Justin Berg for a recent study about creativity

841k

movie reviews from Rotten Tomatoes were processed by DARC for Berg's study

OFFICE ARTIFACT

Claudia Allende's Rongorongo Tablets

Claudia Allende Santa Cruz is an assistant professor of economics at Stanford GSB.

IN THE 19TH CENTURY, dozens of Rongorongo tablets were discovered on Rapa Nui, or Easter Island. Those are all in museums or private collections now. I bought these replicas when I visited the island 10 years ago, between my undergraduate and master's degrees.

Even though Rapa Nui is a territory of Chile, the culture is nothing like my home country. The locals speak the Polynesian language of Rapanui. The population is concentrated to just one town of about 8,000 people. You can't really rent bikes there, so when we went, my friends and I brought ours. We biked around to the villages and met locals, hiked, and went scuba diving. We stood on the top of Ma'unga Terevaka, an extinct volcano

where you see water in every direction. Rapa Nui is the most isolated inhabited island in the world.

I bought the tablets from a local artist in the town of Hanga Roa. They aren't something you can get in a tourist shop or order online. If you look closely at them, some of the inscribed glyphs look like people and fish, others look like palm trees and sea turtles. But the script has never been deciphered. That's how the whole island is — it's full of enigmas.

My research isn't about staying in the office on my computer; I travel to the countries in which I work. I study how firms compete within markets. I've done research in Chile, Peru, the Dominican Republic, Colombia. It's really on-the-

ground: I'm working with government organizations, talking to people, and using local data. I feel like a modern-day Indiana Jones. As a scientist you need theory, of course, but for me, being in the place is a key part of my research.

I travel to Chile frequently. Right now, I'm studying the economics of school choice there. More than 70% of the schools are private, so most families use the voucher system. I work with the government to build interventions that will help families search for schools. We created an app where parents can see the schools in their area, how they rank, and take a virtual tour. We call it marketing for school choice, or marketing for social decisions.

People think of economics in monetary terms. But it's the study of human behavior and the decisions we make. And people often don't have enough information to make the choice that's best for them. Growing up, my parents talked a lot about the societal problems our country was facing, and I became interested in how to use the market and policy design to address inequalities.

I've carried the tablets with me to my various offices since that trip. They're the first things in my new office here at Stanford. I got the Rongorongo tablets the same way I get my empirical research: by experiencing a place and learning about its people.

— *Told to Jenny Luna*





CLASS TAKEAWAYS

Leading a Team Is a Balancing Act

When you're building a team, how do you maintain structure and focus while also inviting participation? Professor Deborah Gruenfeld shares five key lessons from *Managing Groups and Teams*, a course taken by all first-year MBA students:

1. Build teams with the end in mind:

Assembling a great team goes beyond picking people you want to work with. "You have to start with the end in mind," Gruenfeld says. "You can't know who to work with or how to structure your team until you know what's needed for the team to succeed. The teams should be designed around a clear, engaging direction — a goal."

2. Consider diversity and hierarchy:

"Do you want to maximize diversity to prioritize learning outcomes and sharing different perspectives and inclusion, or do you want to control for the effects of diversity by making sure team members' goals are aligned and an agreement can be reached so the team can move forward?" Then you need to think about hierarchy — "whether to make sure participation and influence are even or to make sure that the voices of experts or key stakeholders are more influential than the voices of people who are more competent, but whose opinions shouldn't matter as much."

3. Go beyond surface-level diversity: "It's not enough to compose teams with people who create the appearance of surface-level

diversity and assume the rest will take care of itself," Gruenfeld says. To ensure that team members' varied experiences and perspectives are recognized, you should "normalize raising alternative points of view, asking questions, and challenging others' assumptions."

4. Create space for equal participation:

"Expertise rarely predicts influence in teams, while things like physical attractiveness and gender predict influence very well. It's good to have ways of drawing out quieter members and gently quieting others to create space for less hierarchical, more equal participation."

5. Balance participation and control:

In the end, Gruenfeld says, "Managing or leading a team is a delicate balancing act between imposing enough top-down structure and control while inviting enough bottom-up participation. Imposing direction and structure can feel oppressive or paternalistic, but failing to articulate and reinforce a clear vision of success can leave team members feeling lost and unmotivated. The takeaway here is that it's not a leader's job to manage teammates' feelings or be as likable as possible. The job is to manage the team's performance and outcomes in a way that engages, stretches, and develops the team and guides them forward to success."

Watch a video of Professor Gruenfeld's Class Takeaways at stanford.io/teams.

CAREER ADVICE

4 Tips for Building Your Reputation



When you're meeting and mingling with new people, there is no greater currency than a stellar reputation. It is the "echo that proceeds you into a room and the echo that remains after you leave," says Allison D. Kluger, a lecturer in management at the GSB. Here are some of her tips for creating and managing your reputation, which she shared with organizational behavior lecturer Matt Abrahams on the podcast *Think Fast, Talk Smart*:

1 Think about your entrance: The adage is true: First impressions are everything. Be aware of how much space you take up when you enter a room and how well you listen to others. Consistency is another important aspect of self-presentation, Kluger says. Show up exactly as you are, time and time again. Authenticity is attractive and plays a huge role in how others perceive you.

2 Show up on their radar: Kluger explains "trust radar," a concept she learned from *Reputation Rules* by political scientist and Vanderbilt University Chancellor Daniel Diermeier. Four elements are essential for creating trust with people: expertise, empathy, commitment, and transparency. By utilizing them, you match warmth with competence and boost your colleagues' belief in your intention and ability.

3 Roll with it: Regardless of what happens in a social situation, there will always be a positive way to react — an idea that Kluger also teaches her young children. "It can be the worst moment of your life, or it can be a moment where you triumph," she says. "You turn it around, or you accept it, or you do something of value." Be comfortable being uncomfortable: "Let how you choose to deal with it define you."

4 AIM high: Audience. Intent. Message. To communicate with your peers effectively, break the interaction down into those three parts. You need to know your audience and put yourself in its shoes. Next, what do you want to achieve in this interaction? Do you intend to entertain, educate, or fundraise? Finally, Kluger advises repeating your message and opening and closing with it so it's the last thing your audience remembers. — *Justine Sombilon*

Listen to this episode of *Think Fast, Talk Smart* at stanford.io/reputation.

MAKER

Trillicon Valley

Jason Mayden, MS '11

LONG BEFORE HE AND HIS team hack together a prototype of, say, a high-performance sneaker, Jason Mayden asks “big questions.”

“Since I work in sports, the questions are always about human potential, whether it’s biomechanical, physiological, or cognitive, because most athletic performance begins in the mind,” says Mayden, CEO and cofounder of Trillicon Valley, an award-winning design and strategy consultancy. “What is the future of human potential? How far can the body go?”

If the shoe will be used by basketball players, maybe the questions are about flight. “The easiest way to innovate is to use two widely disparate objects and find the center point. I know that we have nothing physiologically in common with a peregrine falcon, but if you dig deep enough you find some areas that overlap. There are similarities that lie just beneath the surface of every living being that can provide tremendous insight and inspiration when viewed with a discerning eye.”

Asking these questions comes naturally to Mayden, a polymath who is drawn to both the science and art of product design. He believes the art is the easy part. “Once we understand the performance requirements of the athlete, then we allow the product to determine our inspiration for color and materials and trim,” he says. “But if you start with aesthetics before setting proper performance requirements, you potentially create an object that could disrupt the outcome of an athletic endeavor. The difference between no medal and a gold medal can often be found in the small nuances of the product worn by the athlete.”

It isn’t until Phase Four — after intensive study, insight-building, and customer decoding — that an embryonic product begins to materialize. And when that happens, it is chaotic and messy. “It’s sketches, it’s notes, it’s listening to podcasts, watching documentaries — it’s everything I can think of to help me become a fast expert.”

Mayden began his career at Nike, where he spent 13 years. He cofounded his first company, Trillicon Valley, eight years ago, and remains dedicated to the notion that “designing is a lifestyle, not a vocation.”

“If you’re a person that doesn’t come from a socioeconomically privileged background, you understand the concept of *creatio ex nihilo*, or ‘creating from nothing.’ That’s what design is. We absorb the energy of the moment, and we reflect its inherent beauty in everything we create.”

— Kevin Cool

DESIGN WITHIN REACH

Mayden’s workspace is carefully curated for each project he’s working on. He needs to “spread out,” to surround himself with books, photographs, ephemera — a “physical mind map” that creates an environment where magic can happen.



Photo courtesy of Jason Mayden



MOCK TRIALS

Model making often takes place in-house, whether it's a cardboard mimic of a piece of furniture or a sewn together piece of apparel.

CHARACTER REFERENCE

Mayden often travels with a copy of *Batman #307*, which introduced Lucius Fox, a Black inventor, executive, and the caped crusader's gear guy. Fox became an inspiration to Mayden, who has had a lifelong love of gadgets. "We call the place we're working the Hero Lab; it's like Fox's lair."

RARE AIR

Sneakers aren't just footwear; they are style statements, and, in Mayden's hands, cultural icons. He worked with basketball legend Michael Jordan for more than a decade, first as a senior product designer and later as senior global director of Nike's Jordan brand.

TRANE OF THOUGHT

Mayden compares design to improvisational jazz, and John Coltrane is often a go-to soundtrack in the background. "Good design has harmonious balance, similar to when you hear good music."

Insights

CULTURE SHOCK

Why the Pandemic Slammed “Loose” Countries Like the U.S.

When crises hit, cultures with less strict social norms may not respond quickly enough.

BY DAVE GILSON

Michele Gelfand has spent her career making sense of the often unseen and unwritten forces that shape our behavior. “Culture is omnipresent: It’s all around us, but it’s invisible. We take it for granted,” says Gelfand, who recently joined the Stanford GSB faculty as a professor of organizational behavior. “Often, when we get outside of our cultural bubble, we realize we’ve been socialized profoundly to have a certain set of norms and values.”

How those norms vary and evolve is one of the primary focuses of Gelfand’s research. Most notably, she has found that cultures’ adherence to social norms falls along a spectrum from tight to loose. “Tight cultures, generally speaking, have more order,” she says. “They have less crime, more monitoring. There’s more self-regulation.” Think Japan, Singapore, Austria. Loose cultures, on the other hand, “have more openness and more tolerance.

They have more creativity and they also, generally speaking, are more open to change.” Examples include Brazil, Greece, and the United States.

Gelfand introduced these ideas in a study of 33 nations in *Science* in 2011 and has since expanded upon them in numerous studies and her 2018 book, *Rule Makers, Rule Breakers: How Tight and Loose Cultures Wire Our World*. With her collaborators, she has found that the tight-loose model doesn’t just apply to countries but to American states, organizations, households, and to some extent, individuals. (You can take a quiz on her website to see how tight or loose your mindset is.)

Both tightness and looseness come with advantages and trade-offs, Gelfand says. Take the U.S., which has grown progressively looser over the past 200 years. Creativity has increased, while social order has decreased. “People are



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Illustrations by Alvaro Dominguez

always asking, ‘Which is better? Tight or loose?’” The answer is neither. However, she adds, “the extremes of both are really problematic.”

Loose Countries in a Tight Spot

The pandemic has exposed some of the pitfalls of cultural looseness. In March 2020, as the coronavirus spread, Gelfand wrote an op-ed in which she cautioned that Americans’ “decentralized, defiant, do-it-your-own-way norms” could prove dangerous in the months ahead. That warning was borne out in a study of 57 nations published in *The Lancet Planetary Health* a year later, in which Gelfand and her coauthors found that the U.S. and other loose countries had had much higher numbers of COVID cases and deaths.

She elaborated on this finding in a recent paper in *Current Directions in Psychological Science*. Borrowing a concept from evolutionary biology, Gelfand described loose countries’ inability to tighten up in response to COVID as a “cultural evolutionary mismatch.” Just as our bodies’ propensity to soak up fats and sugars has gone from a survival advantage to a health risk, loose cultures’ optimism resulted in misjudging a major public health threat. Compared to tight cultures, she found that loose cultures had far less fear of COVID even though their illness and mortality numbers were worse. In the first two years of the pandemic, she wrote, “Loose societies generally had a conflicted reaction to tightening norms, with tragic consequences.”

Understanding why loose countries like the U.S. have fared poorly during the pandemic is linked to why they’re less strict in the first place. Cultural tightness, Gelfand explains, generally evolved

as a response to persistent historic threats ranging from natural disasters to invasion. “It’s a pretty simple idea,” she says. “When you have a lot of chronic threat, you need stricter rules to coordinate to help you survive because it’s not something you individually can handle by yourself. So norms provide that coordination.” Accordingly, tight countries have, in general, pulled together more quickly and efficiently to confront COVID.

The United States’ response to the pandemic shows how the advantages of looseness can become liabilities in a crisis. “From an evolutionary perspective, when you haven’t had chronic threat, we have this afforded optimism. It’s a great thing to be an optimistic culture.” But, she notes, “That’s not a great trait in a context of a collective threat.”

Balancing Freedom and Structure

That’s not to say that loose cultures can’t buckle down when things get tough. Gelfand points to New Zealand’s “ambidextrous” response to COVID. “The Kiwis are famously loose,” she says. Yet their political leadership sent a clear message that some temporary tightening would be necessary. (It also helped that they live on an island.)

The U.S. has proved that it can tighten up quickly, particularly in response to threats like terrorism and military attack. And, paradoxically, culturally looser states like California implemented some of the strictest responses to COVID, while relatively tighter states, particularly in the South, have been more lax. “It’s possible for tight cultures to follow the wrong norm,” Gelfand says. Here too, leadership has played a significant role in shaping people’s perceptions of risk. “When your leaders tell you this is no big deal, that’s even more comforting in a context where it’s pretty abstract and we don’t want to have to give up our liberty for constraint.”

The ability to pivot away from looseness or tightness is important not just for societies but for organizations seeking both innovation and order. Gelfand mentions her recent work with a grant from the Navy. “They need to be tight, but how do you insert a little bit of discretion into that system? We call this flexible tightness.” Companies that veer loose, like Silicon Valley startups, have the opposite challenge. “How do you insert some structure, some accountability, into those systems? We call that structured looseness.”

Gelfand also brings these ideas to her teaching on negotiation, where she emphasizes cultural intelligence — not simply respecting other cultures but understanding how they work beneath the surface. “Social norms are probably one of our most important human inventions,” she says. “We can harness their power to pivot when we need to.” **GSB**

**“It’s a great thing to be an optimistic culture.”
But: “That’s not a great trait in a context of a collective threat.”**

THE TIPPING POINT

The Subtle Psychology and Economics of Taxi Fares

Passengers hate mental math — and other lessons from one billion New York City cab rides.

BY SHINHEE KANG

From 2009 to 2013, Kwabena Donkor drove a taxicab through the heart of New York City to pay for college. It was a perfect stint while attending school, he recalls, because he wasn't tied to a nine-to-five that might keep him from an economics exam. It was during these trips that the seed for his recent scholarship was planted. "The personal experience helped me to ask questions beyond what one would just sit down and think abstractly about," he says.

It always fascinated Donkor that even an uncomfortable or negative interaction with a passenger didn't seem to affect whether or how much they tipped him. Why was that? He also began to wonder: Why do people even tip to begin with?

"The behavior of tipping in NYC cabs is not rational according to traditional eco-

nomic models," explains Donkor, now an assistant professor of marketing at Stanford GSB. Classical economics assumes that customers are rational and self-interested. Yet the choice to pay for a service and then give something extra to the service provider is not exactly that. Some studies indicate that people give tips to increase the likelihood of better service in the future. But in New York, where there were more than 11,000 yellow cabs before the pandemic, the chances of getting the same driver twice are very low.

Looking for another way to explain passengers' decision to tip, Donkor turned to behavioral economics and its focus on social norms. "Tipping is not obligatory but discretionary. But because this norm exists, people don't avoid it," Donkor says. In a recent working paper,



ELENA ZHUKOVA



KWABENA BAAH DONKOR
is an assistant professor of marketing at Stanford GSB.

Donkor uses theoretical and empirical analysis to quantify the economic value of tipping in New York’s yellow cabs. “We know norms matter, but by how much? How do we figure out how binding it is?” he asks.

A Fare Share

It helped to have a dataset of 1 billion NYC taxi trips paid for with credit cards, which allowed Donkor to track how far passengers went and how much they tipped during a single year. He observed that a striking 97% of customers left a tip, which strongly suggested the presence of a norm. The “social norm tip” was around 20% of the total fare.

Donkor added another layer of analysis by looking at how passengers interacted with the touch-screen payment devices in the cabs. The screens presented passengers with a menu of tip options: 20%, 25%, or 30%. There was also a button to opt out of the default tip menu and punch in a custom amount. Donkor found that around 60% of people chose a tip from the menu, indicating that most passengers prefer not to calculate a tip in their heads.

The most popular tip menu option was 20%. However, as taxi fares went up, passengers veered away from the typical rate. “Twenty percent of five bucks is not that much. But then when the fare’s \$50, it’s like, ‘Oh, I don’t want to stick with 20%. Now I’m going to move away from the menu. Because it’s worth my time doing a calculation, compared to giving 20% of \$50 to the driver,’” Donkor explains.

He found that the share of people who opted for the menu defaults decreased as fares increased. And more than 80% of passengers who skipped the menu tipped less than 20%.

To further understand the way people tip, Donkor designed a model that suggested that when a passenger tips, they aren’t simply paying the driver but also avoiding the psychological cost of leaving a small tip or not tipping at all. “You have something in your mind that you think is the norm or the right thing to do. And deviating from that results in a feeling like shame or guilt.” he says. That “norm-deviation cost” increases as passengers stray from the norm: When a customer tips 10% rather than 20%, this cost is around \$1.30.

“There’s a trade-off,” Donkor says. “How much am I going to save myself versus adhering to this norm? So this context is what allowed me to quantify these unobservable behavioral fundamentals that we know matter but are really hard to measure.”

His model also quantifies the cost of a passenger not sticking with the menu suggestions and computing a tip. “It’s the cognitive cost of you doing your own exercise,” Donkor explains. The average cost of this calculation — a.k.a. the menu opt-out cost — is around 90 cents. “People would rather avoid computing 17% of \$13.75 and would rather pay \$1 to avoid that situation,” Donkor says.

Tips for Better Tips

These findings demonstrate the benefits of on-screen tip menus for both drivers and customers. As Donkor explains, “If you don’t give them any menu options, you can force the passenger to do the computation themselves. But then, if you give them the right options, it would increase tips, so it increases the profits

that drivers are going to make. And it also increases the welfare that customers have, because they don’t have to do the computation.”

And this quickly adds up. In New York City, there were more than 250,000 taxi rides per day before the pandemic. If the cost of computing an acceptable tip is around a dollar, then the amount saved by passengers who pick a default tip plus the increase in drivers’ average tips is considerable. Donkor calculates that pre-COVID, the tip menu increased both cabbies’ and riders’ welfare by more than \$200,000 per day compared with no menu at all.

As payment screens have replaced tip jars and outstretched palms, Donkor’s findings have implications for cafes, restaurants, delivery services, or any industry where workers rely on tips to supplement their income. Tip menu suggestions can “actually increase the wages of workers without necessarily making life terrible for consumers or taking money away from them,” Donkor says. “In fact, they don’t have to do as many computations; we’re making it easy for them to do these calculations. So this is a win-win situation.” **GSB**

Tip menu suggestions “increase the wages of workers without necessarily making life terrible for consumers or taking money away from them.”

VENTURE TIME

The Data on Unicorns Everyone's Looking For

What makes billion-dollar startups so special? These numbers may hold the answers.

BY DAVE GILSON

Like their mythical namesakes, corporate unicorns are surrounded by a glow of mystery and magic. Yet beyond the hype, do we really know what makes these billion-dollar startups so unique?

That's hard to say since there's little comprehensive data on unicorns, says Ilya Strebulaev, a professor of finance at Stanford GSB. He's been trying to fill in that gap, spending the past few years compiling data on every U.S. unicorn since 1995, from virtually unknown tech firms to household names like Tesla, Uber, and Airbnb.

"Every single time a company becomes a unicorn, it gets into my data," he says.

Working with his research assistants, Strebulaev has been tracking more than 530 unicorns (defined as privately held,



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UNICORN STATS

Magic numbers

\$4 billion

is the average unicorn valuation at exit

13%

of unicorns have one or more female founders

36

is the average age of unicorn founders

2/5

of founders are serial entrepreneurs

19%

of founders have an MBA or equivalent

56

unicorn founders are college dropouts

States with the most unicorn HQs:



venture-backed startups with a reported valuation of \$1 billion or more).

He first shared his data with his class on VC financing. “Students were really interested,” he recalls. “I said, ‘Well, let me share this more broadly.’” Last fall, he started posting some aggregate numbers and charts on LinkedIn. Thousands of new followers snapped them up.

Among the stats Strebulaev has shared: It takes startups around seven years, on average, to achieve unicorn status. Among unicorns that exit, 54% issue IPOs, 34% are acquired, and 4% fail. At exit time, the average unicorn was valued at \$4 billion.

Strebulaev has also drilled down into the demographics of unicorn founders. About 44% were under 40 when their companies became unicorns. While 87% of unicorns have only male founders, less than 2% have only female founders. Around 44% of founders were born outside the U.S., with India as the most common country of origin. Less than one-fifth have an MBA degree or equivalent. Fifty-six are college dropouts.

Strebulaev cautions that his data is purely descriptive and shouldn’t be used to draw sweeping correlations or conclusions. For example, nearly one-fifth of unicorn founders attended Stanford. “But by itself, it doesn’t mean anything,” he says, “because if you take 10,000 venture-capital-backed companies, you’ll find out that many of them have a Stanford cofounder. It tells us a lot about

Stanford, but it will not show you causality about unicorns.”

Strebulaev plans to continue to release more numbers while he finishes a study that compares unicorns with other VC-backed firms. When they go up against more ordinary-seeming companies, will unicorns prove to be exceptional? His previous research suggests there’s reason for skepticism. In 2017, he showed that many unicorns were massively overvalued and were not, in fact, unicorns at all. The gap between some firms’ reported valuation and fair valuation was as much as 196%.

The fascination with unicorns continues, yet Strebulaev wants to look past the glow. “I wouldn’t say that I’m really that interested in the unicorns for unicorns’ sake,” he says. “I’m more interested in defining success and factors behind venture capital-backed companies. Unicorns are really only the first step.”

Strebulaev has also been tracking people who have taken his course *Angel and Venture Capital Financing for Investors and Entrepreneurs*. Among the more than 800 alumni, almost one-third have gone on to found startups. His advice to his next cohort of students: “Follow your unique journey and remember that you will eventually end up in my data.” **GSB**

“Every single time a company becomes a unicorn, it gets into my data.”

EMISSION STATEMENTS

Giving Companies a Real Incentive to Take Climate Action

Making corporations disclose their carbon footprints doesn't have to be painful.

BY LEE SIMMONS



The COP26 climate summit, held in Glasgow, Scotland, last November, was long on stirring pledges and promises. What it lacked were concrete plans to fulfill those commitments. Activist Greta Thunberg dismissed the proceedings as a lot of “blah, blah, blah.”

Ultimately, any serious effort to stop climate change will likely involve carbon pricing and direct emission regulations — policies that so far have been politically difficult to enact.

However, says Stanford GSB accounting professor emeritus Stefan Reichelstein, there is a relatively painless step that could

be taken right now to build momentum and prepare the way for more aggressive future policies. In a series of recent papers, he and a group of colleagues argue that we should require corporations to disclose their CO₂ emissions in their annual reports.

In March, the Securities and Exchange Commission announced a plan to do just that, unveiling a draft rule that would require publicly traded companies to publish their emissions data. To be clear, carbon reporting wouldn't require firms to cut their climate impacts. It would merely oblige them to measure their carbon footprints and show how

those numbers are changing (or not) from year to year.

What good would that do? Quite a bit, it seems. The United Kingdom enacted such a policy in 2013 — the only country to have done so — and a recent analysis by Reichelstein and his coauthors shows that the affected companies reduced their carbon emissions by 8% over the next several years, compared with similar European firms. And that's almost certainly a conservative estimate.

“What the British experience shows is that mandatory disclosure actually leads to voluntary reductions,” Reichelstein says. “By making the numbers visible to all of the company's stakeholders, it creates an incentive for management to take action.”

Remarkably, the researchers also found that those British firms saw no significant decline in their financial performance, despite incurring costs to modify their operations. That suggests, Reichelstein says, that they were able to pass along those costs in higher prices — possibly because their carbon-cutting efforts led to increased customer loyalty.

Along with creating incentives and accountability, mandatory carbon reporting would also meet the pressing need for better information — not only to inform policy and help companies develop effective mitigation strategies, but to help focus the boom in ESG (environmental, social, and governance) investments.

It's a “modest proposal,” Reichelstein says, “and it's no substitute for a comprehensive policy mechanism. But this is



STEFAN J. REICHELSTEIN

is the William R. Timken Professor of Accounting, Emeritus, at Stanford GSB.

something that is immediately feasible, and we believe it's an essential first step. As the saying goes, 'You can't manage what you don't measure.'"

The Pillory Effect

Before 2013, UK firms were already disclosing their carbon outputs at the facility and factory level, as required by the European Union's carbon trading system. The only change made by the reporting requirement in the Companies Act was to aggregate those numbers at the corporate level and have the results published in companies' annual reports.

"In principle, the information was already out there, if you wanted to dig through the weeds in the EU Emissions Trading System logs," Reichelstein says. "That's how we constructed our sample data, and I can tell you it was pretty painful. What the British law did was make that information easily accessible and tie it clearly to corporate brands." The new reporting requirement made it easy to compare emissions from companies in the same industry.

By putting the names and faces of managing directors on the results, Reichelstein thinks it has a "pillory effect," evoking the wooden stocks once used to expose wrongdoers in the town square. Of course, proactive leaders can use the disclosure as an opportunity to build goodwill and demonstrate that their firms are cleaning up their acts.

Being able to measure those improvements is a big deal in capital markets, where many institutional investors have made sustainability efforts and ESG

indices key criteria for their funding decisions. Companies whose carbon footprints caused them to be shunned by these large investors would, in turn, face a higher cost of capital.

Carbon reporting also provides new sticks and carrots to employees and customers, Reichelstein says. Workers who are proud to be part of a company tend to be more loyal. Customers, likewise, can vote with their wallets. In short, when carbon emissions are made public, reducing those emissions isn't corporate altruism; it's a hard-nosed business strategy.

Keep It Simple

One objection to mandatory carbon reporting is that it places a burden on firms. Reichelstein says it's akin to the financial reporting requirements that have long been routine for public companies. Indeed, in one way, it's the same thing: Companies with large carbon footprints may face heavy penalties down the road, and that's a risk that equity investors should know about.

Far from being antibusiness, "mandatory disclosure of important information is the bedrock on which capital markets are founded," Reichelstein cowrote in a column in anticipation of COP26. "Investors need to know what they're buying and selling."

Ideally, as with any kind of regulation, carbon reporting should offer a level playing field. In that respect, the British law, which covers only publicly listed firms, falls short. "Private firms should also have to report," Reichelstein says. "Otherwise, you could just outsource certain activities to private suppliers so they go off the radar."

And as with financial accounting, standards are needed to ensure that the numbers reported by different companies are verifiable and comparable. It would

also require a system of third-party auditors. Those things are currently lacking in the data provided voluntarily by some well-intentioned firms, as Reichelstein and his coauthors note in another recent paper: "Membership in the 'Net-Zero by 2050 Club' is thus virtually free, but lacks transparency."

In particular, he recommends that carbon disclosure mandates cover only "direct emissions" — that is, CO₂ released by a company's own activities — rather than trying to capture what happens upstream and downstream. An automaker, for example, would report only the carbon cost of building and selling cars, not the fuel burned by drivers or the emissions from its entire supply chain. (The proposed SEC rules cover both direct and indirect greenhouse gas emissions.)

"That may not be everything you'd want. Counting indirect emissions might give you a more complete picture of a business's contribution to climate change. But it gets complicated very quickly, and you run into all kinds of issues like double-counting," Reichelstein says.

His advice: Let's not make this so hard it never happens. If we can just get companies to put their name on their emissions, maybe we can get the ball rolling on more ambitious efforts — and begin to move beyond "blah, blah, blah." **GSB**



CARBON COPYCATS

Reichelstein talks about the surge in corporate pledges to achieve net-zero emissions and the "Wild West" of the carbon offset market at stanford.io/netzero.



VAULT LINES

What a 19th-Century Bank Crash Can Teach Us Today

Digging through old bank ledgers reveals the lasting impacts of financial meltdowns.

BY SARA HARRISON

Sitting six levels underground, Chenzi Xu started to question her life choices. Here, in a secluded room beneath the vaults of the Bank of England and beyond the reach of cellphone reception, she felt like an intruder. She was monitored by cameras and forbidden from taking pictures of her surroundings because the bank didn't want anyone to glean information about its security protocols.

But Xu, then a graduate student in economics at Harvard, wasn't interested in the central bank's gold. She was combing through its archives to find a different kind of asset: data.

Stitching together tens of thousands of 19th-century loan and shipping documents, Xu, now an assistant professor of finance at Stanford GSB, assembled the

story of how the London banking crisis of 1866 rippled across the world, slowing development and disrupting patterns of international trade for decades. Her reconstruction of this major panic could help scholars understand how more recent disasters like the 2008 financial crash can play out for years.

It's often tricky to zero in on the impact of bank failures because banks rarely fail in a vacuum, so it may be hard to say if failing banks were a symptom or a cause of a larger financial crisis. Even if researchers could untangle the various economic threads, they still can't conclude what the long-term effects of more recent crises will be. "You don't get to see those outcomes for many, many, many years," Xu says.

She realized she could avoid those problems by examining an older example,



CHENZI XU

is an assistant professor of finance at Stanford GSB.

and the London banking crisis of 1866 was the perfect test case.

The similarities to today are striking. By the mid-19th century, there was a vast network of international trade that is considered the beginning of the modern financial era. The tools used to finance trade in the 19th century are still used today. Exporters took out loans so they could keep operating while awaiting payment as their goods traveled to faraway destinations. “That financial instrument hasn’t changed at all,” she says.

Panic in the Suites of London

The crisis wasn’t precipitated by an underlying weakness in the economy. Instead, it began when a poorly managed interbank lender unexpectedly failed, triggering a run on other banks as worried customers desperately tried to get their money out.

The panic caused 17% of the multinational banks headquartered in London to fail — a devastating shock to a globalized economy that largely operated on British currency. “Corporate bonds, sovereign bonds, bank lending — the vast majority of financing around the world was in pounds, much like the way it is in dollars today,” Xu says.

There was just one big problem with studying this episode. There is a ton of data from this period, but Xu had to collect it first. That’s how she found herself in the subterranean archives of the Bank of England for weeks at a time. “I think it’s one of these projects where had I known when I started it how long it would have taken, I probably wouldn’t have started it,” she says.

Bankers recorded transactions at branches around the world in enormous ledgers, so big and heavy it takes two people to carry them. Those ledgers are also nearly illegible. “They had really bad handwriting because this wasn’t meant for the public to see,” Xu says. She returned to the archives over several years,

photographing entries for more than 11,000 loans made by 128 banks between 1865 and 1866. Transcribing each entry, she then digitized the data herself.

She also combed through archival copies of *Lloyd’s List*, a newspaper that reported on the progress of ships, noting when they left and reached port. The paper was like a tracking system for investors who anxiously followed their cargoes and wanted to know when ships were delayed, damaged, or sunk.

These sources helped Xu construct what British lending and international trade were like before and after the crash.

The immediate impacts of the 1866 crisis were huge. One year after the crisis, countries that were more heavily dependent on failed banks saw their exports decrease by over 8%.

The long-term repercussions were also significant. The crisis stunted trade growth for many economies. Even four decades after the crisis, importers bought, on average, 21% fewer goods from companies in countries that had depended on the failed banks. “This is a period when the levels were growing, everybody was trading more,” Xu says. “But when you had more bank failures, you grew relatively less. This means that in the long term, you missed out on a lot of the massive expansion in trade that happened during that period.”

New Lessons from Old Papers

Xu says she’s often envious of colleagues who study more recent events and whose data arrives digitized and ready to use. Yet she says there’s lots of value in digging into historical moments that can shed light on why resources are distributed in specific ways today and how these imbalances and inequalities unfolded over time.

Trade is a way to indirectly measure a country’s economic output, but it also directly impacts people’s well-being, Xu explains. “A reduction in trade usually means people consume fewer types of goods and at higher prices,” she says, which means the 1866 crash harmed not just bankers and merchants but people around the world.

As more archives are digitized, Xu thinks they will provide economists with a valuable source of big data. “Institutions like central banks and census bureaus are also taking an interest in at least scanning these sources and making them available online for researchers,” saving them from the task of sifting through old ledgers by hand.

Ultimately, Xu believes the historical lens provided by archival data helps scholars better understand how economies function. “We’d like to be able to say that we’re explaining something that’s kind of fundamental, right? That we’re getting at something more like a natural law,” she says. “You don’t want your theory to only work in the post–World War II world.” Given the slow economic recovery from the 2008 crisis, Xu says, historical examples like the crisis of 1866 are more important than ever if economists want to predict when and how countries will bounce back. **GSB**



CUPID’S CODE

Daniela Saban, an associate professor of operations, information, and technology, explains how strategic changes to dating apps could lead to more — and better — matches at stanford.io/dating.



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The Promise



of Investing

BY ALEXANDER GELFAND AND DAVE GILSON

ILLUSTRATIONS BY TYLER COMRIE AND DEXIN CHEN

and Pitfalls



for Change

Navigating the line between opportunity and uncertainty in the booming ESG market

When Engine No. 1 succeeded in seating three new directors on ExxonMobil’s board in June 2021, the move was widely hailed as a David versus Goliath moment. And rightly so: The hedge fund, which launched in late 2020 with \$250 million in assets, owned a mere 0.02 percent of the energy giant’s shares.

Engine No. 1 had waged a proxy campaign that savaged the company for its lackluster financial performance and lack of a clear path to a low-carbon future, ultimately gaining the support of ExxonMobil’s largest shareholders, including Vanguard and BlackRock. Since the election of its new directors, the company has declared its intention to achieve net-zero greenhouse gas emissions by 2050. By February 2022, its stock price had soared by more than 90% — roughly doubling competitors’ gains at a time when oil prices were booming.

For Engine No. 1’s managing director at the time, Michael O’Leary, MBA ’19, the ExxonMobil coup was proof of concept for the firm’s approach to impact investing, which combines targeted investments with old-fashioned shareholder activism. Its goal is to reap financial rewards while advancing environmental, social, and governance (ESG) aims. “That was a test case,” says O’Leary, now a strategic advisor at the firm. “It was not easy. But we were able to show that if you have the right set of ideas, the right strategy, and the right partners, you can create real change.”

The market for investments that consider ESG criteria and seek ESG-related impacts is exploding. Estimates of its size vary widely. In 2020, the Global Impact Investment Network pegged the total market for impact investment at \$715 billion, while the World Bank’s International Finance Corporation reckoned it was worth \$2.3 trillion. The Global Sustainable Investment Alliance has tallied more than \$25 trillion in assets under management using an “ESG integration approach” — a 143% increase since 2016. Whatever the figures may be, there’s no doubt that vast sums of money are now chasing earnings alongside returns such as reducing carbon emissions, strengthening worker protections, and diversifying boardrooms.

ESG “put a name on something that I think has always been there,” says Jim Coulter, MBA ’86, the executive chairman and founding partner of TPG, a private equity firm based in San Francisco. Socially responsible investing is not new; a subset of investors has long sought to prioritize investments that somehow contribute to the well-being of the planet and its

inhabitants. Yet in the past few years, there’s been a rapid shift to a “new ethos” the likes of which Coulter has seen only a few times over the course of his nearly four-decade career. “I think of it as the world of *and*,” he explains. “Businesses are going to be measured for what they do *and* how they do it. It’s not *or*. You’re going to be measured for both.”

TPG got a head start, adopting an ESG performance policy in 2012 and signing on to the United Nations-backed Principles for Responsible Investment the following year. It launched an impact investing platform, The Rise Fund, in 2016. Coulter and Steve Ellis, MBA ’90, serve as two of the fund’s three co-managing partners. (The fund’s founders board includes Laurene Powell Jobs, MBA ’91, Jeff Skoll, MBA ’95, and Bono.)

“Any type of company has the ability to participate in ESG,” Coulter says. But for investors who want to go beyond putting their money into corporations that are trying to do better, there’s investing for impact — “the extra credit of ESG.” When The Rise Fund launched, Coulter recalls, “impact investing was something we had to sell rather than something people were looking to buy.” Today, Rise is the world’s largest private equity impact fund, with \$13 billion in assets and investments in 50 companies across six continents. At the end of 2020, it reported having delivered an estimated \$3.3 billion worth of impact in areas including education, health, and decarbonization.

There is a growing consensus that the stakes are too high not to try to harness the power of profit to tackle urgent environmental and social issues. Yet as players such as TPG and Engine No. 1 articulate a vision for long-term investing in change, the landscape is still dotted with heated debates and potential pitfalls.

Like O’Leary, Coulter notes that doing well by doing good is not easy to get right. “This is hard,” he says. “It’s an attractive type of investing, but it’s a difficult type of investing because we’re adding a whole other level of complexity by holding ourselves to the highest standards for measuring and delivering impact. But being early means you have to build the tools and refine your approach as you go.”

Measuring Up

David Larcker, a professor emeritus of accounting at Stanford GSB and director of the Corporate Governance Research Initiative, believes it is imperative to achieve ESG goals. But he has some questions about how that will happen. He has found that many investors and



MICHAEL O’LEARY, MBA ’19
Strategic advisor and former managing director at Engine No. 1

“If you have the right set of ideas, the right strategy, and the right partners, you can create real change.”

Chasing the Green

How big is ESG-focused investing?
It depends how (and whom) you ask.

See sources for charts at stanford.io/esg.



companies are unclear about what, precisely, they are trying to achieve by pursuing ESG goals, and as a result can't honestly say whether they are succeeding. And that uncertainty is compounded by numerous flaws in how policies and impacts are measured and analyzed. "There's a lot of bad assumptions, bad measures, and unsupported claims," he says.

In a recent paper, Larcker exploded several "myths" surrounding ESG investing — starting with the idea that it has a widely accepted definition. What exactly constitutes an ESG activity isn't cut-and-dried. If a U.S. bank invests billions in initiatives to advance racial equality and economic opportunity, for example, is it really pursuing ESG objectives — or is it simply taking credit for complying with federal regulations that require it to serve low-income communities? After Russia invaded Ukraine in February, a German defense industry group said that weapons makers should be recognized for their "positive contribution to 'social sustainability' under the ESG taxonomy." Larcker questions why governance is part of the formula: Shouldn't shareholders value good governance at *all* companies, regardless of their environmental and social priorities?

Measuring the effects of even the most well-meaning ESG effort is tricky. "You start peeling back the onion, and it becomes very complicated," Larcker says.

While calculating the environmental impact of a company's carbon-reduction program might seem relatively straightforward, it becomes considerably less so if one considers all the emissions generated along the enterprise's supply chain. Putting a figure on the "S" is even more challenging: How, for example, do you quantify the impact of a socially responsible policy on the lives of workers in the developing world?

"Good luck measuring the impact of an investment on social or economic inequality," says Amit Seru, a professor of finance at the GSB and a senior fellow at the Stanford Institute for Economic Policy Research. "The data are messy, crude, and measured with a lag."

Most publicly traded ESG funds construct their holdings by considering the universe of all stocks, excluding the most obviously "dirty" companies, and weighting whatever remains according to a rating system. This strategy descends from a tradition of socially responsible investing focused on avoiding "sin stocks" and morally questionable enterprises (think of the movement to divest from apartheid-era South Africa).

But ESG screening is more complicated than simply excluding firms from a particular industry: a company

"There are a gazillion ESG measures. If you don't have good measures, how the hell do you build your investment portfolio?" Larcker asks.



DAVID LARCKER
The James Irvin Miller Professor of Accounting, Emeritus, at Stanford GSB

“You start peeling back the onion, and it becomes very complicated.”

that promotes good governance or racial equity, for instance, may still have a huge carbon footprint. And without mandatory disclosure or commonly accepted metrics, it's difficult to make apple-to-apple comparisons of firms' track records. Corporations may cherry-pick the numbers they disclose, increasing the possibility of greenwashing or greenwishing — mistaking good intentions for meaningful impact.

There is little overlap among the various proprietary methodologies for rating public companies' ESG performance. A company might get high marks on one scale but failing ones on another. O'Leary cites the example of a medical-device maker in Engine No. 1's portfolio that, according to one rating provider, has lower E and S scores than the Altria Group, one of the world's largest producers of tobacco products.

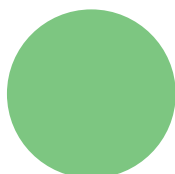
"There are a gazillion ESG measures, but who knows whether any of them are really relevant?" Larcker says. "Are they measuring what they claim to be measuring? And if you don't have good measures, how the hell do you build your investment portfolio?"

Known Unknowns

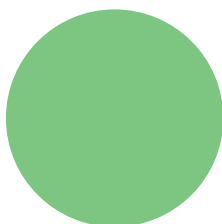
Fuzzy numbers can complicate decisions about whether to invest in a company or encourage it to undertake a particular ESG initiative. "It's hard to push them until we really have that data," says Madeline Hawes, MBA '17, a director at Engine No. 1. Her firm tries to make up for the lack of high-quality information through "the magical work of our data science team," which employs imputation methods to fill in gaps in the data.

Coulter says "information availability" is more of a problem in the public market than the private market. Nonetheless, "we would like clear standards," he says. "We remind people that it took 70 years for GAAP to

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\$25.2 trillion
AUM with "ESG integration" in 2020
Global Sustainable Investment Alliance



\$41 trillion
Projected total ESG AUM in 2021
Bloomberg Intelligence



\$100 trillion
AUM by signatories of the United Nations Principles for Responsible Investment
UNPRI

develop and 50 years for Moody's to come up with A/B ratings for bonds. But we can't wait. We've got to get action."

To that end, TPG launched its own research arm, Y Analytics. It's designed to "take the guesswork out of our impact assessments by deliberately avoiding intuition-based definitions of impact in favor of peer-reviewed, research-based definitions," Coulter explains. "And we assess the potential impact of our investments on a net basis, so we are taking into account the potential for both positive and negative outcomes."

Seru worries that the scarcity of consistent, quality information could place a ceiling on how much the overall ESG market can expand. "There's a big conundrum here," he says. "Standardization is hard. And because standardization is hard, it's going to create pockets of people who more or less agree on things. But they're going to be very specialized pockets, and as a result, the market will not grow as much as people might think."

There is also the question of how many truly attractive opportunities the market contains — and whether



AMIT SERU
The Steven and Roberta Denning Professor of Finance at Stanford GSB.

“The whole idea of win-win only works at scale if you have a bunch of mismanaged firms.”

there are enough to make this type of investing work at scale. Larcker says there's not enough evidence behind claims that focusing on ESG criteria inevitably leads to better returns. A 2021 meta-analysis of 1,400 studies performed by researchers at the Wharton School, NYU, and Johns Hopkins indicates that the financial performance of ESG investing has on average been indistinguishable from conventional investing.

A 2019 study of the municipal bond market that Larcker conducted with Edward Watts, PhD '20, now at the Yale School of Management, found that investors were unwilling to pay a "greenium," or sacrifice returns to invest in eco-friendly securities. On the flip side, GSB finance professor Jonathan B. Berk recently showed that divestment from companies that fail to meet ESG criteria has little impact on their financial performance or their cost of capital.

While Larcker and Seru acknowledge that there are situations where investors can make money while making the world a better place, they question just how many

Is Impact Possible Without Trade-Offs?

Frontiers of Social Innovation, a new book edited by GSB professor of political economy Neil Malhotra, explores a range of topics facing philanthropists, social entrepreneurs, and investors who seek "effective solutions to challenging and systemic social and environmental issues." Its nearly 20 contributors include academics, practitioners, and leaders who teach courses as part of the GSB's Certificate in Social Innovation and Public Management.

A major focus is the incentives and obstacles surrounding impact investing and ESG-driven investing. In their chapters, Malhotra and Bernadette Clavier, the executive director of the Center for Social Innovation, question whether the current wave of sustainable investors recognizes the challenge of realizing both meaningful impact and competitive returns.

NEIL MALHOTRA: Traditionally, investing has focused on maximizing risk-adjusted returns. Impact investing posits a third factor in the objective function in addition to risk and return: impact. Note that this conflicts with "win-win" conceptions of impact investing that assume away trade-offs (*i.e.*, "The best way to maximize long-term profits is to take into account social performance."). If you believe in this world of no trade-offs, then there is no difference between investing and impact investing. The only value of the concept of impact investing is that we need to consider scenarios where we gain impact at the expense of risk-adjusted return.

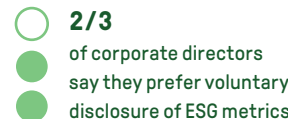
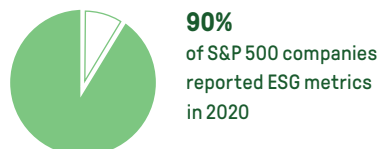
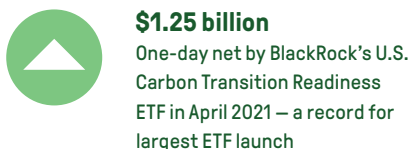
BERNADETTE CLAVIER: As demonstrated by the success of the ESG investing space, capital owners are attracted by more-ethical ways of continuing to make money at similar rates. In other words, the popular approach

is to "do no wrong" as opposed to proactively making a positive impact.

However, market-rate returns are precisely not the point of the social enterprise. The point is to create social value; it is hoped without losing money and possibly while producing a little bit of financial return. We don't have a social ventures supply issue. Rather, we have a demand issue for the social enterprise value proposition, the vast majority of which is subcommercial. The "doing well while doing no harm" opportunity is quite large, but the "doing well by doing good" proposition is overhyped.

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NANCY ROTHSTEIN



of them are sprinkled throughout the broader economy. “The whole idea of win-win only works at scale if you have a bunch of mismanaged firms,” Seru says. Well-governed firms, he explains, will already have undertaken all the projects that could potentially maximize shareholder value — including those with obvious environmental and social benefits.

By that logic, ExxonMobil would be the exception rather than the rule, at least in developed markets. Seru argues that Engine No. 1 was able to rally larger shareholders to its cause because the oil company was already seen as being so poorly managed that it was failing to maximize returns. A well-run company, however, would not have needed any outside nudging to pursue an ESG-friendly course that clearly served its bottom line.

Or, as Larcker puts it, “If there were returns to be had, the greedy capitalists would already have been doing it.”

Confusion and Opportunity

The issues raised by researchers like Larcker and Seru are not news to the proponents of sustainable investing. Coulter has stressed that ESG depends on accountability, not promises. “We have 1,500 companies that have made net-zero pledges — and yet none of them can say how that’s going to happen,” he told Bloomberg last year. In 2020, O’Leary published a book, *Accountable: The Rise of Citizen Capitalism*, which echoes much of Larcker and Seru’s critique. He and his coauthor wrote an article last year for *Harvard Business Review* with the ominous title “An ESG Reckoning Is Coming.” “A movement meant to benefit the public good risks becoming a buzzword co-opted to keep maximizing short-term profits,” they warned.

But O’Leary and Coulter are determined to overcome and even capitalize on the uncertainty in the current boom. “It’s like a three-sided coin: We have need, chaos, and opportunity,” Coulter says. “Any time you flip the coin, you’ve got to ask which side you’re on. The way you deal with the chaos is through knowledge. I think this really speaks to the need for specialized capital and dedicated impact investing efforts.”

“Good investing of any type requires that you can take a contrarian stance and place a bet on a company or a trend that is different from what the rest of the market thinks,” O’Leary says. “And that’s possible right now because there’s so much confusion over what ESG investing even means.”

Coulter is adamant that investing for impact can — must — be a win-win. From the outset, The Rise Fund was intended to be “absolutely, unapologetically,



MADELINE HAWES,
MBA '17
Director at Engine No. 1



It’s hard to push them until we really have that data.”

non-concessionary.” “An impact deal doesn’t know it’s an impact deal from a financial point of view,” he says. If competitive performance is viewed as a tradeoff for positive impact, he argues, impact investing can’t scale. That defeats its purpose, which is to generate the capital necessary to spur large-scale change. “If you are building real companies that are solving real problems, there’s no reason that you can’t get real returns. And you create a more sustainable company,” Coulter says. “If you ask people to take below-market returns, there isn’t enough below-market capital out there to solve the problems we have to address.”

Coulter thinks there’s much more untapped demand, not just from ESG-curious investors but a new generation of entrepreneurs seeking “impact capital.” “I think there’s an opportunity for this market to grow — substantially,” he says. He has said that he believes the “climate revolution” will mimic the explosion of the digital economy: Many people 30 years ago knew tech would be big, but they still underestimated just how big it would get.

So far, institutional investors have driven much of the growth in ESG investing. Engine No. 1 hopes to bring its approach to active ownership to the masses with a recently launched exchange-traded fund called Engine No. 1 Transform 500 ETF (ticker symbol VOTE). Composed of the 500 largest companies in the U.S. public equity markets, it is by exposure virtually identical to any S&P 500 fund. The difference lies in how it plans to wield its shares.

The asset managers who run many ESG funds often vote their shares in ways that run counter to the values of impact investors. “There are climate-focused funds that have voted against 90 percent of climate-related proposals,” says O’Leary, who came up with the idea for VOTE while sitting on the second floor of Bass Library at the GSB. “Every additional dollar in the [VOTE] fund makes us one dollar stronger in our voting and our advocacy work.”

It remains to be seen how many investors can muster the level of ambition and expertise required by Engine No. 1 and TPG’s respective strategies. Whatever happens next should provide an excellent test of Larcker’s and Seru’s questions about the potential size of the sustainable investment market.

Larcker looks forward to seeing how it all pans out. And he is willing to concede that when it comes to investing for change, the perfect should not be the enemy of the good. “At some point,” he says, “there’s a leap of faith where it’s like, ‘Let’s go for it and see.’” **GSB**

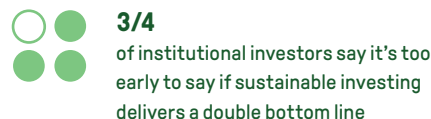
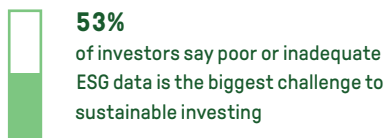


JIM COULTER,
MBA '86
Executive chairman and founding partner of TPG



If you are building real companies that are solving real problems, there’s no reason that you can’t get real returns.”

COURTESY OF ENGINE NO. 1; COURTESY OF THE RISE FUND



Redefining the Narrative

First-generation, low-income students reflect on what it means to “be FLI.”

PHOTOGRAPHY BY ELENA ZHUKOVA



Steven Ferreira
MBA '22
DANBURY, CONNECTICUT

“My family has always cheered me on during pivotal moments in my career. Their struggles and belief in a better future motivate me to use my privilege and opportunities to create that future.”

First-generation, low-income (FLI) students at Stanford GSB have distinctive perspectives and experiences that enrich the community in multiple ways, but they also face special challenges. And they have a student organization of their own to enhance their sense of belonging and provide support for each other.

The FLI Club, founded in 2019, offers social activities, guest speakers, and discussions to promote dialogue and help students navigate the complexities of graduate school life. It aims to strengthen relationships across the GSB and build a network of allies who can advocate for FLI students.

Kevin Fauzie, MBA '22, says the club has been a source of

both solace and strength. “For me, being part of the FLI Club means knowing that I am not alone. Knowing that there are others who have gone through similar struggles to get where we are now.

“Most importantly, the club helped me embrace my background and recognize that being FLI is a strength, not a weakness. We should be proud that we have come this far despite our circumstances, and the fact that we have successfully done so means we have the attributes to reach even higher heights in the future.”

Over the next six pages, eight more students reflect on what “being FLI” means to them.



Amanda So

MBA '22

JACKSONVILLE, FLORIDA

“Being a FLI student at the GSB to me means having the audacity to embrace ambition in the face of doubt. It means bringing a different perspective to the table, but also gaining the confidence and leverage required to make room at the table for those who will come after.”



Viet Nguyen
MBA '22

SAN JOSE, CALIFORNIA

“Being FLI at Stanford means knowing that every opportunity I have is a result of my parents’ immense sacrifices to give me a better life. It also means being responsible for opening doors and dismantling structural inequities to change the institutions I’m in to be more diverse and inclusive for others.”



Jo Zhu
MBA '22
BEIJING, CHINA

“My mother came to Canada with two suitcases, a handful of optimism, and a dream for a better life. It was on her shoulders that I was able to climb to new heights. I don’t for one second lose sight of how lucky I’ve been for this opportunity and where my roots come from.”



Phan Nguyen MBA '22

PHAN THIET, VIETNAM

“The support I received along my journey has taught me that, sometimes, one single opportunity is the only thing that separates my life from that of someone with similar background, drive, and aspirations. My gratitude for the sacrifices made by my family and the opportunities offered to me encourages me to do the same for others, to provide access and open doors for those who come behind me.”



Monika Juzwiak **MBA '22**

MIDDLETOWN, NEW JERSEY

“Being FLI has made me more independent and self-disciplined. Growing up, it meant that I was learning how to navigate this country along with my parents. Now at Stanford, it means I am part of a community of students who understand why I am the way that I am.”



Marcia Austin
MBA '22

SAN DIEGO, CALIFORNIA

“Coming from a FLI background means harnessing the power to overcome societal expectations and breaking through ceilings. It means creating a legacy for my family. It means creating stability and redefining the narrative. It stands for progress and growth.”



Jaime Munoz

MBA '22

SANTA CLARA, CALIFORNIA

“My parents and my grandparents have lived and continue to live a life of sacrifice and frugality for me. This selfless love is something I won’t ever be able to forget, and it inspires me to keep going.”

Obstacle Course

An inside look at *Business and Government*, a new class that pushes students (and instructors and guests) to question their assumptions and confront real-world challenges.

BY DAVE GILSON

ILLUSTRATION BY DALBERT VILARINO

On a Friday morning last November, two representatives of the social media giant formerly known as Facebook stopped by the GSB. The visit had been arranged well in advance, but the timing was a bit awkward for a company seeking to rebrand amid bruising hits to its image and stock price.

MULTIPLE-CHOICE PROBLEMS

Business and Government grew out of the idea that this generation of business students faces a tangle of questions that aren't typically addressed in management and finance courses.



However, for the nearly 50 students taking Professor Anat R. Admati and lecturer Robert E. Siegel's *Business and Government: Power and Engagement in the 21st-Century World*, this encounter could not have been timed more perfectly.

The Wall Street Journal had recently reported on “the Facebook Files,” a trove of documents revealing the company’s awareness of its products’ negative effects on teens and how its platforms had been used to spread disinformation. Shortly afterward, Frances Haugen, the former product manager who leaked the records, told a U.S. Senate committee that Facebook’s choices were “disastrous for our children, for our public safety, our privacy, and for our democracy.” She contrasted her ex-employer’s actions — and inaction — with a lesson she’d learned while getting her MBA: “We are responsible for the organizations that we build.”

Her comments hit squarely on the themes of *Business and Government*, a five-week deep dive into the role of business leaders as they navigate increasingly complicated matters of accountability, trust, corruption, and governance. So, when the guests from Meta Platforms dropped by during the second week, there was plenty to talk about.

The discussion was off the record, but it’s not disclosing too much to say the visitors, one of them a senior executive, were put in the hot seat. “To be fair, I think we did make them sweat a little bit,” says Frances Simpson-Allen, a second-year MBA student. “But if you’re one of the biggest companies in the world and arguably one of the few companies that reaches almost half the world’s population, you should be in a position to take some tough questions.”

As Admati and Siegel later reflected on the Meta moment, they seemed a bit surprised by the intensity they’d witnessed that day. Yet this was precisely the kind of probing, unflinching discussion they’d sought to spark with their new course.

The students, Admati says, had demonstrated just how seriously they were weighing the big questions facing leaders not just in Silicon Valley but in every industry: “Who calls the shots? Who governs?” In that session and those that followed, Siegel says, “I think we touched every third rail that was out there — and I hope we did so in a way that allowed the students to engage with it and not hide behind platitudes.”

BUSINESS AND GOVERNMENT GREW out of Admati and Siegel’s shared belief that this generation of business students faces a tangle of challenges that aren’t typically addressed in management and finance courses.

For Admati, the George G. C. Parker Professor of Finance and Economics, the class was a culmination of nearly 15 years of research, advocacy, and teaching about the often-troubled relationship between the public and private sectors. A prominent proponent of reforming the banking sector, Admati saw the 2008 financial crisis as a wake-up call, a stark illustration of how failed oversight can enable both corporate excess and fragility. In 2018, she founded the Corporations and Society Initiative (CASI) at the GSB to promote “more accountable capitalism and governance.”

Expanding on ideas explored in her courses *Power in Finance* and *Is the Internet Broken?*, she started to brainstorm a new class with the working title *Capitalism 3.0*. She explained the need for such a course in a 2019 *Harvard Business Review* article in which she called on business schools to restore trust in the economic and political system by promoting “civic-minded leadership” — “a way of conducting business and citizenship based on a holistic understanding of how individuals, corporations, and governments interact, one that emphasizes the importance of good governance mechanisms and seeks to create a system in which capitalism and the market economy can deliver on their promises.”

Through his work as a GSB lecturer in management, venture capitalist, executive consultant, and former technology leader, Siegel — a graduate of the MBA Class of ’94 — had also come to see that the intersection of business and government “is a foundational issue that crosses almost every industry. Whether you’re running a large multinational or you are running a small organization, you’re going to have to deal with geopolitical issues in ways that my generation didn’t have to.”

They were also responding to demand. As the co-director of CASI, Admati says, “I’m working with students who want to have these discussions and are hungry for more content like this.” Siegel heard similar things from recent grads. “When I started talking about this class as Anat and I were working on it, you could see the light bulb go off with the alums,” he says. “I wish I had a dollar for every time one said, ‘Ooh, can I come back and take that?’”

GSB administrators had connected Admati and Siegel, and as they discussed a potential collaboration, Siegel eventually suggested that they teach together. As he recalls, “Because I’m a troublemaker, I looked at Anat,

“It’s really important that we have these conversations in the classroom before folks are put into quite meaningful positions of influence where they’re going to make tough calls.”

who'd been making trouble for some years by then at the GSB and in the world, and said, 'We should do a class on this. That would be fun.'

Admati and Siegel make no secret of their differences in perspective, politics, and approach to the issues. Both recount the "triggers" that would pop up in their conversations. Siegel felt that Admati's critiques of capitalism failed to acknowledge its overwhelming benefits: "She would share articles about capitalism being broken, and my reaction would be, 'Except for every other economic system that's ever been created, right?'" Admati bristled at Siegel's belief that "regulation stifles innovation." "Rob, you like the rule of law, right? Let's call them laws instead of regulations," she recalls shooting back. "The issue is the rules of the game, and we want to design them to allow innovation without undue harm."

Rather than letting their disagreements become barriers, Admati and Siegel found a mutual desire to push past knee-jerk reactions toward a deeper understanding. In separate interviews, each expressed their distaste for oversimplified ideological categories. (Siegel: "I hate to use the labels." Admati: "I hate the labels.") "It was when Anat and I would really unpack those issues we found where we had common ground," Siegel recalls. Admati adds, "Rob likes to say that we disagree on everything, and I say, 'Actually, that's not true. We talk things through and then we end up agreeing.'"

THE CHALLENGING YET CONSTRUCTIVE dynamic between Admati and Siegel would provide a model for *Business and Government*. In their own distinctive ways, they poked and prodded students to question assumptions and eschew convenient narratives.

Admati kicked off the first day with one of her signature lectures, an expansive synthesis of history, law, data, and examples ripped from the headlines. A slide presenting the "false contrast" between "'free' markets" and "'big' government" echoed the discussions she and Siegel had had while planning the course.

She also introduced a concept that would become a touchstone in the weeks ahead: The "circles of interests" that surround everyone, from the individual level to the planetary. "If you believe there are rights people should have and you want those rights for yourself and the circle of people around you, you must also wonder who you can count on to protect them," she said.

Siegel's M.O. was kinetic: Pacing in front of the room, he'd lure students into Socratic exchanges, like this one about how companies should operate in countries that violate human rights:



WALKING THE TALK
Siegel and Admati found a mutual desire to push past knee-jerk reactions and oversimplified ideological labels.

THE SPY WHO CAME IN FROM THE CODE

A *New York Times* reporter details how the government and tech companies are leaving the U.S. vulnerable to hacking and cyber espionage.

Nicole Perloth remembers the moment she realized nobody was coming to get the bad guys.

She had recently begun reporting on cybersecurity issues for *The New York Times* when hackers hit the newspaper. Perloth was there when FBI agents showed up, ostensibly to collect evidence. The *Times* identified the culprits — based in Beijing and sponsored by the Chinese government — but the feds “closed their binders, thanked the team, and left — and we never heard from them again,” Perloth recalled. “American businesses were being targeted by advanced nation-states, and there really was no cavalry.”

Speaking at the GSB in November as part of a speaker series sponsored by the Corporations and Society Initiative, Perloth, the author of *This Is How They Tell Me the World Ends*, gave a sobering assessment of the growing threat posed by cyber espionage and digital warfare.

(She also spoke to Anat Admati and Robert Siegel’s *Business and Government* class.)

Perloth described how hackers, often working at the behest of foreign governments, exploit weaknesses in software to attack critical infrastructure, more or less with impunity. “Everywhere you look, businesses are experiencing hundreds, thousands — in some cases, millions — of cybersecurity incidents every week,” she said.

She detailed how undetected software holes known as “zero-days” are collected, bought, and sold, in some cases for millions of dollars. It isn’t just rogue agents from other countries that stockpile zero-days — so does the government. “Most people have no idea the trade-offs that our government makes in the name of national security at the expense of cybersecurity,” Perloth said. “When the U.S. government holds onto a vulnerability in the software, they are also making it more likely that someone else would find that hole and use it against American infrastructure.”

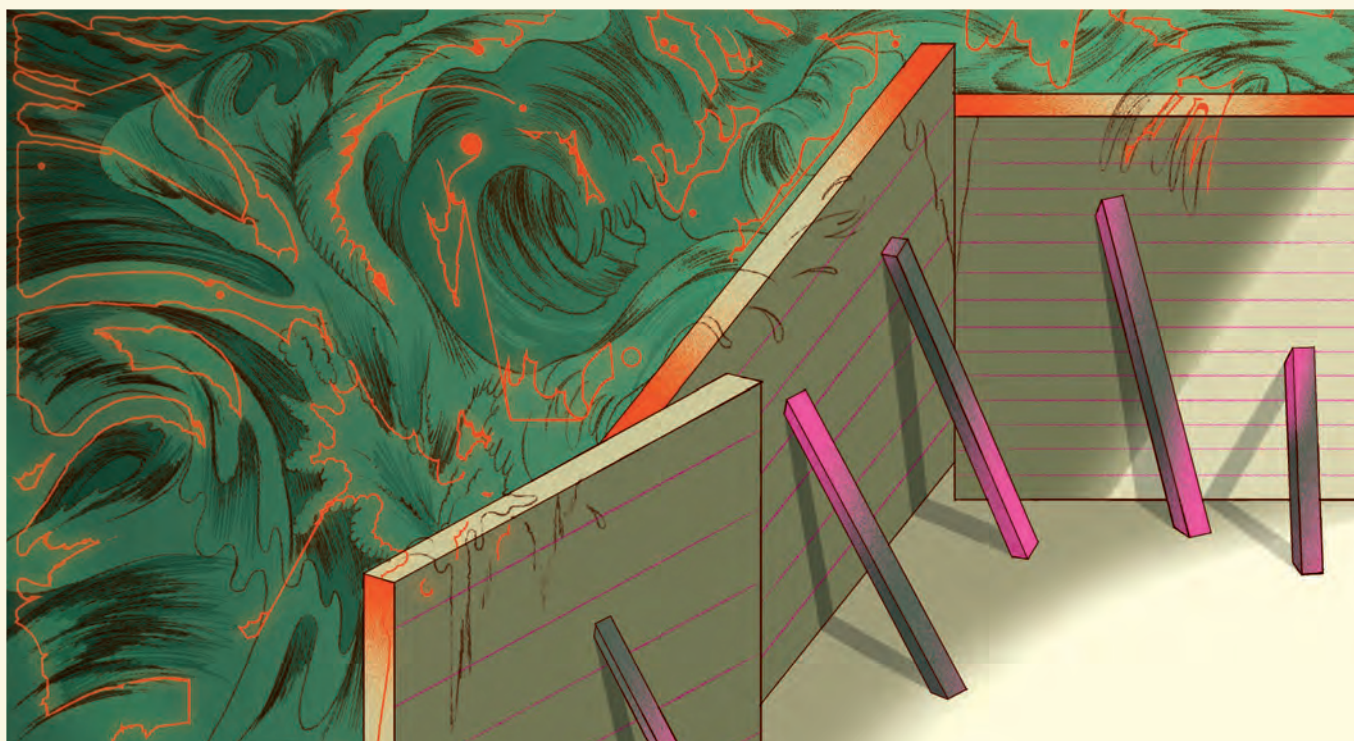
According to Perloth, the digital arms race has also been enabled by tech companies’ laissez-faire attitudes, which may prioritize speed and convenience over security.

“Speed is the natural enemy of security. Security teams are considered whiners, the party poopers,” she said. “No one wants to be bothered with updating their software if it creates lag times.”

So far, the destabilizing effects of cyberattacks have been short-term and limited, but the prospect of a catastrophic event is growing. “I really think that the next major geopolitical conflict will either be a cyberwar or will have some major cyber component to it,” Perloth said.

However, there’s one hopeful scenario: “There is some pressure for a digital Geneva Convention. Shouldn’t we agree not to hack one another’s elections or hospitals or civilian systems like the power grid?”

— Kevin Cool



Student: I think businesses have to have core values and ethics, independent of which country they operate in. I know, it sounds idealistic.

Siegel: So, I want to unpack that. They have core ethics and values that are independent of the country that they operate in? This isn't an ethics class; this is a governance class.

Student: I understand, but every company should articulate its values, its core values, its principles. And when they operate in other countries with different governance, it's up to [them] how they like to adapt their values in the context.

Siegel: Values get adapted?! Tell me more about that! How do you adapt your values? Where are times that you have values that are one thing and where are times that you have values that are another thing?

Student: (laughing) Maybe I should rephrase that.

"Anat and Rob both did a great job of really pushing people's positions," Simpson-Allen says. "It was really nice to see the two of them come together," says Veena Katragadda, also a second-year MBA student. "I felt like I was getting a different perspective from each side, but both of them were basically saying the same thing: This is an urgent issue that we need to think about."

In keeping with the course's focus on real-world topics, nearly every session included a high-profile guest. Former General Electric CEO and GSB lecturer Jeff Immelt spoke about doing business in China and Saudi Arabia. Young Sohn, the former president of Samsung Electronics, discussed global supply chains. Another spirited session featured Rep. Ro Khanna, a Silicon Valley Democrat who boosts big tech and backs higher taxes for billionaires. "Loved the class and the students," he tweeted afterward. "The classroom is far tougher than how I remember it."

The emotional crux of the course was an appearance by Linda Ginzel, a consumer activist and clinical professor of managerial psychology at Booth School of Business. (She'd become close friends with Admati while she was an assistant professor of organizational behavior at the GSB in the late 1980s.) After her 16-month-old son Danny suffocated in a defective crib in 1998, Ginzel had launched a campaign to fix the product safety system that allowed dangerous products to stay on the shelves. Her story crystallized another core theme of *Business and Government*: Corporate leaders can do great harm even when they follow the rules. "That brought it home," Simpson-Allen says. "It was a very moving session."

Ginzel urged the students to dispense with the notion that they must wear multiple "hats" representing their various professional and personal identities. Instead, she called for a less compartmentalized view of leadership, an idea that meshed with the concept of circles of interest. "People wear their 'management hat' when they're maximizing profits and some other hat at other times," Admati says. "When your child dies, you're not wearing any hat."

Admati and Siegel say their overarching goal was to provide students with frameworks for a deeper understanding of our economic and political system. GSB students, Admati says, "are grasping for answers how to think about their place in society and how they reconcile their different interests and connect the dots" from different disciplines. After completing the course, Siegel says, "I hope the students could understand that it can't just be 'Do the right thing.' It's much more complex than that."

FAR FROM BEING DAUNTED by this complexity, students say they came away with a sense of clarity. "I used to have a disconnected vision of the world," says Ricardo Monastier, an MSx student. "When I used to think about business before I came to the GSB, I thought, 'Yeah, I would do the right thing.' But now I understand how complex and interconnected the reality is."

"The lines between government, business, and stakeholders have almost blurred," Katragadda says. "It was exciting to see a class that was trying to intellectually discuss what those lines and responsibilities are."

"This is one of the only classes that forces you to take on very tough positions," Simpson-Allen says. "I don't mean firing someone — we roleplay that all the time. I think it's really important that we have these conversations in the classroom before folks are put into quite meaningful positions of influence where they're going to make tough calls."

Admati and Siegel plan to teach the course again, most likely next winter. Beyond that, they'd like to ensure that all GSB students are exposed to its message in their time at the school. "I think this is the single most important issue the students are going to deal with for the next several decades," Siegel says.

Admati says it was particularly gratifying to coteach a course that took a step back to look at the bigger picture and examine assumptions, something she'd like to see become more of a habit — not only in the classroom. "Ask yourself: If you follow this strategy, will the world be a better place? What are you assuming if you answer 'yes' — and what might go wrong?" **GSB**

An Unexpected Result

How Nobel laureate Guido Imbens helped kick-start economics' "credibility revolution"

BY JULIA KANE

PHOTO BY ELENA ZHUKOVA

The breakthrough came on a warm, clear afternoon early in the summer of 1991. For months, Guido Imbens and his colleague Joshua Angrist had been contemplating a variation on a question that had vexed philosophers and other observers of the world since the days of Aristotle:

How do you prove causation?

LIVING PROOF

Ideas developed by Imbens and his collaborators have enabled economists to draw striking conclusions from real-life data and observations.





Imbens had been sitting in his office in Harvard's economics department, thinking about the problem for so long that his head hurt. When the seed of an idea popped into his mind, he jotted down some notes, paused, and realized, "This is pretty much the best thought I've had."

Imbens, now the Applied Econometrics Professor and Professor of Economics at Stanford GSB, has devoted his career to developing ever more precise methods for answering questions of cause and effect. Though it involves applied statistics and an alphabet soup of Greek symbology, it's far from a purely academic pursuit: Understanding causality is perhaps the closest you can get to having a crystal ball. If you can find the causal relationship between two events — if you can pinpoint which one caused the other — then you can better understand why things are the way they are and possibly even predict how future events will play out.

The cleanest way to answer a cause-and-effect question is through a randomized control trial, such as the large-scale clinical trials used to prove the efficacy of COVID-19 vaccines. Of course, it's not always ethical, or practical, to run experiments involving people. Researchers cannot withhold education from children to determine the effects on their future income, nor adjust immigration levels to see how they affect the labor market.

That's where Imbens' work comes in. In many cases, researchers can extract lessons from what's known as a natural experiment — a real-world situation brought about by chance or policy that roughly mirrors a randomized control trial. It's easier said than done. As Imbens explains, one of the trickiest questions in empirical economics is "once you move away from clear and crisp randomized experiments, what can you learn from observational data?"

The ideas that Imbens and Angrist formulated would help refine the answer to that question and spark a transformation in their discipline, imbuing it with a new sense of reliability and relevance. Imbens' contributions eventually led to him sharing the 2021 Nobel Memorial Prize in Economic Sciences with Angrist, now at MIT, and David Card of the University of California, Berkeley.

Such a result must have seemed impossibly remote on that summer afternoon in 1991. Still, Imbens recalls his excitement as he set off, notepad in hand, for the Greenhouse Café to meet with Angrist. Striding along the tree-lined sidewalk, Imbens thought, "We've got this. We've nailed this."

IN 1979, WHEN GUIDO (pronounced HEE-do) was a 17-year-old high school student in the Netherlands, his economics teacher lent him a slim hardcover book called *Econometrics* by Jan Tinbergen. Though Imbens couldn't make much sense of the book's equations, the notion that you could wield mathematics as a tool to shape economic policy and benefit society stuck with him. He applied to study econometrics at Erasmus University in Rotterdam and was accepted to the program that Tinbergen, who won the first Nobel Prize in Economic Sciences in 1969, had founded.

Imbens had an aptitude for econometrics. During his time in Rotterdam, a visiting American professor named Marcus Berliant offered a rigorous course that probably should have been taught to graduate students. On the first day of class, there were five undergraduates. On the second day, there were three. After a week, it was just Imbens, plus a handful of faculty. Impressed and a little amused, Berliant was the first person to suggest that Imbens pursue a PhD.

Imbens would go on to earn his doctorate in economics at Brown, and in 1990, he applied for a position at Harvard. That's when he met Angrist.

At first, it seemed unlikely the two would become collaborators, much less friends. Angrist, who had been teaching at the university for one year, had strong views on which research questions were not worthwhile as well as which candidate Harvard should not hire — namely, Imbens. In Angrist's opinion, the subject of Imbens' dissertation "wasn't a very interesting problem." Harvard hired him as an assistant professor anyway.

The new colleagues quickly got to talking about solutions to problems that Angrist did think were worthwhile. "In the short run, they just seemed like interesting problems to work on," Imbens says. "I didn't have the big picture view that this was going to change the way the profession viewed empirical work."

In the 1980s, most economists viewed empirical research in the same way that picky eaters view street food — they weren't sure how it was made, and they didn't quite trust it. In a famous 1983 paper, Ed Leamer, an economist at UCLA, argued that much of economists' data analysis involved making unreasonable assumptions and relying on "whimsical" inferences. He quipped, "Hardly anyone takes data analyses seriously. Or perhaps more accurately, hardly anyone takes anyone else's data analyses seriously."

It was in this context that Imbens and Angrist began discussing a recent paper in which Angrist had used the Vietnam War-era draft lottery as a natural experiment to

L.A.T.E. BLOOMER

In 1994, Guido Imbens and Joshua Angrist published an article on what they called the local average treatment effect, or LATE. Though it would eventually help earn them a Nobel, it took years for its importance to be fully recognized. Google Scholar's tally of Imbens' citations by other researchers also tells the story of how his influence has grown over the course of his career.

1995
26 citations

estimate the causal effect of military service on lifetime earnings. Analyzing Social Security data, he revealed that veterans who served during the period earned approximately 15 percent less than non-veterans, even 10 years after leaving the military. His results were credible and interesting enough to merit publication in *The American Economic Review*, but there was something about the methodology that didn't sit well with him or Imbens.

The econometricians James Heckman and Charles Manski had recently argued that, in a natural experiment, there should be some factor — an instrumental variable — that neatly splits a population into subsets, with one subset experiencing an intervention and another subset not experiencing that intervention. With the draft, this neat division wasn't possible. Some men whose numbers were called never served, while some who were not drafted volunteered and served anyway. Still, Imbens and Angrist suspected that there was still a way to obtain credible results using the draft lottery as a natural experiment.

These were the sort of dilemmas that the two young professors would discuss on Saturday mornings as they did their laundry in the basement of Angrist's apartment building. Sitting across from each other on empty machines, legs dangling, they'd compete with the rumbling of the dryers as they lobbed ideas back and forth. (Each year, the Nobel Prize Museum asks laureates for an object that represents their work. "My plan is to give them a box of laundry detergent," Imbens says.)

Angrist had experience doing empirical work and could focus on inconsistencies between methodology and real-world studies with laser-like precision. As for Imbens, "he was super methodical," Angrist says. He'd work through a problem step by step until the logic led him somewhere interesting. If Angrist posed a question during one of their weekend brainstorming sessions, Imbens would show up in Angrist's office on Monday with a sheet full of notes.

FOR MONTHS, IMBENS AND ANGRIST pondered what, if anything, researchers could learn from seemingly imperfect natural experiments like the draft lottery. Imbens read what statisticians had to say on the subject, though sometimes it seemed their papers were in a different language. "I was very junior, so I wasn't bothered by the fact that I had to make a lot of investments into thinking about how other disciplines think," he says.

Then, early in the summer of 1991, inspiration struck. Building on the work of Donald Rubin, the chair of Harvard's statistics department, Imbens and Angrist realized

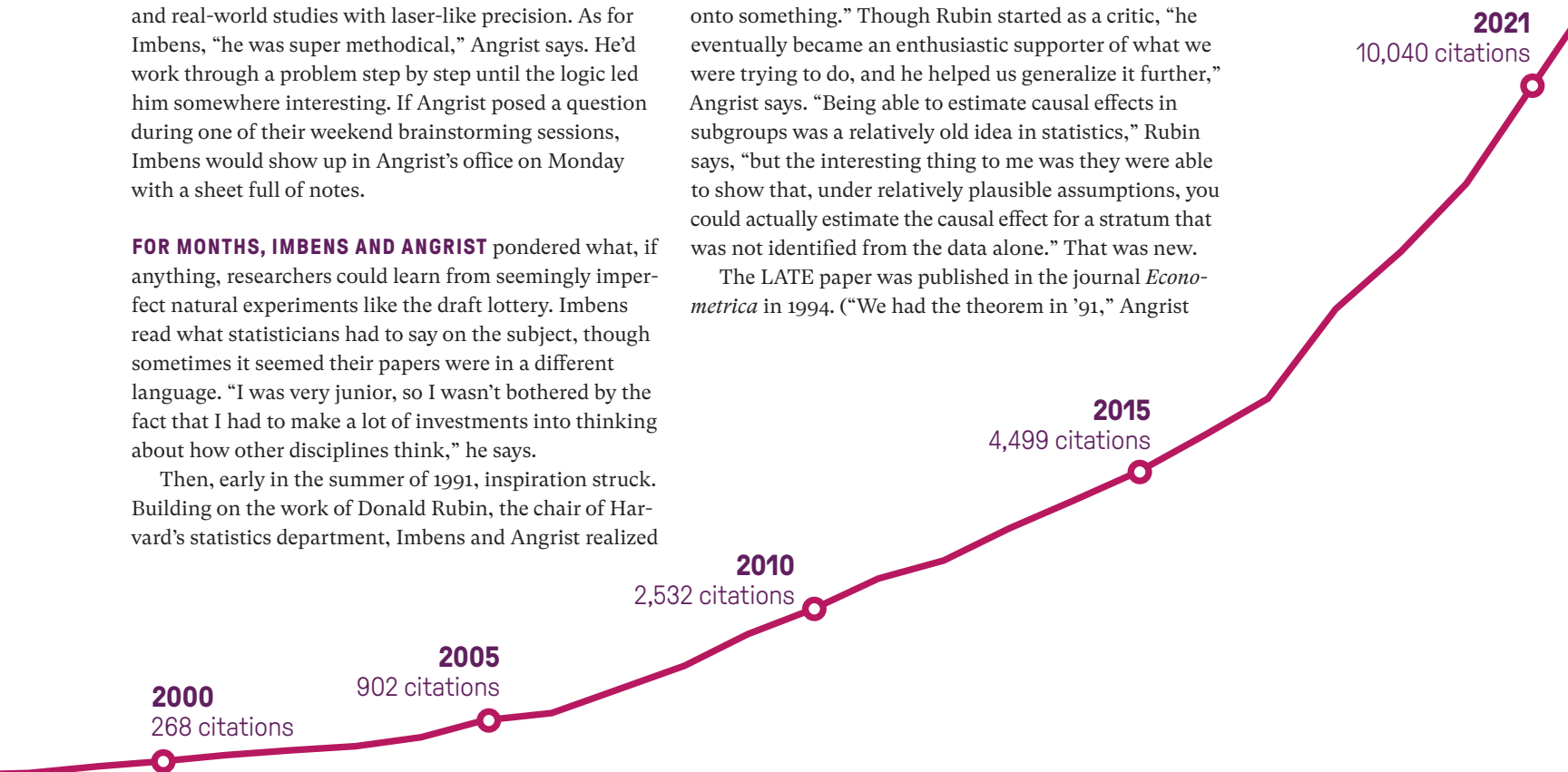
that using instrumental variable methods couldn't tell you about the causal effect for an entire study population, but it could tell you about the causal effect for a specific subpopulation.

Take Angrist's draft lottery study. Some men were volunteers; they would join the military regardless of whether they were drafted. Other men would never serve, even if they were drafted — say, due to medical exemptions. You needed to exclude data from those two groups, because whatever led them to enlist or be rejected might affect how much income they brought in down the road. Once you statistically filtered out those two groups, you were left with men who served only because they were drafted. You could then determine the causal effect of military service on earnings for that specific group. "That may not be the thing you're most interested in, but that's all you're going to get," Imbens says.

This was the insight that Imbens and Angrist discussed on that early summer afternoon, which they eventually developed into a groundbreaking paper on what they called the local average treatment effect, or LATE. It showed that even if a natural experiment was not completely analogous to a randomized control trial, you could still learn something significant from it. "We made precise exactly what you can learn in those cases," Imbens says.

Angrist and Imbens decided to show a very early draft of their paper to Rubin, the statistician whose work had inspired them. When Rubin called a few weeks later, Imbens recalls him saying, "The way you're doing it is all wrong — but I think, actually, you guys are really onto something." Though Rubin started as a critic, "he eventually became an enthusiastic supporter of what we were trying to do, and he helped us generalize it further," Angrist says. "Being able to estimate causal effects in subgroups was a relatively old idea in statistics," Rubin says, "but the interesting thing to me was they were able to show that, under relatively plausible assumptions, you could actually estimate the causal effect for a stratum that was not identified from the data alone." That was new.

The LATE paper was published in the journal *Econometrica* in 1994. ("We had the theorem in '91," Angrist



says, but “in economics, publication is like pulling teeth.” It was simple. It was elegant. It was largely ignored.

Though Imbens and Angrist were confident that they had contributed something novel and useful to the field, few economists saw the value in their work. Card, their Harvard colleague and mentor Gary Chamberlain, and Princeton economist Alan Krueger (the only one to coauthor papers with all three future laureates) were among the exceptions. One detractor, Princeton’s Sir Angus Deaton, would write that to use the LATE methodology was to “let [a light] fall where it may and then proclaim that whatever it illuminates is what we were looking for all along.”

Imbens and Angrist went on to coauthor a related paper with Rubin on how to identify causal effects using instrumental variables, and Imbens and Rubin cotaught a class at Harvard on causal inference. (The course catalog mistakenly advertised a class on “casual” inference — not the last time this mistake would be made.) Imbens continued refining the methodology for gleaning causal effects from natural experiments, but his ideas were slow to gain traction. In 1997, Harvard rejected his application for tenure and he made his way to the West Coast.

ONE DAY IN 1999, while Imbens was teaching at UCLA, he heard that Susan Athey was going to be giving a talk at the University of Southern California. A few years earlier, *The New York Times* had declared Athey “the top draft pick in economics,” and Imbens had been on the Harvard job panel that interviewed her after she had earned her PhD from the GSB in 1995.

Imbens braved the Los Angeles traffic to catch the presentation, and afterward he joined Athey and a group of USC faculty for dinner. The two hit it off, and in 2002, they were married in what Imbens joked was “a very high-powered economics wedding,” with Angrist as best man and a total of four future Nobel laureates in attendance. (Card would have made five, but he sent his regrets along with a bottle of wine.)

From the outset, the couple formed an intellectual partnership. Their first collaboration began when Athey was analyzing the effect of counties adopting enhanced 911 systems to direct ambulances based on caller ID. She ran into some econometric questions and asked Imbens about them, but he didn’t know the answers right away. “That’s a good signal that there’s something interesting there,” Athey says. To date, Imbens and Athey have authored more than 20 papers together.

When Imbens is trying to move beyond a conventional way of analyzing causal effects, “he spends a lot of

SWEDE DREAMS

News of the Nobel woke up Imbens (with his son Andrew, right) at 2:13 a.m. “When you get that phone call in the middle of the night, it takes on this dreamlike quality,” says Susan Athey, his wife and frequent coauthor.



time in the intuition space,” Athey says. He’ll sink deep into a problem, mulling it over until he can pin down exactly what’s making him uneasy. Once he has that intuitive understanding, “he can see when you shouldn’t be satisfied with the math.”

In 2012, both Imbens and Athey accepted positions at the GSB. They moved with their three young children to a house on the Stanford campus. On his office door, Imbens affixed an orange placard that read “ECONOMISCHE FACULTEIT,” acquired under murky circumstances in Rotterdam years ago.

Imbens was drawn to the business school because of its interdisciplinary nature. “There are computer scientists, there are statisticians, there are all different areas of subject matter knowledge,” he says. Plus, with Silicon Valley nearby, “this is just a unique place, where so many different parts of the world that are interested in these questions are in close proximity.” In 2014, Imbens spent the summer as an “intern” at Facebook, learning about what sorts of econometric questions were plaguing the tech industry. He tells his students that econometricians need to be in close contact with researchers doing applied work to ensure that the methodologies they’re developing are practical.

At the GSB, Imbens says, “my research has continued to evolve around causality and trying to find credible ways of getting causal effects.” He has done work developing new methods to account for complex interactions between individuals, ways to combine randomized experiments with observational studies, and a set of statistical techniques known as synthetic control methods. In collaboration with Athey, one of the first economists to adapt machine learning to causal questions, he has done foundational work in this rapidly expanding area.

“I didn’t have the big picture view that this was going to change the way the profession viewed empirical work.”

— Guido Imbens



Imbens also directs the Stanford Causal Science Center, an interdisciplinary community that applies causal inference methods to statistics, social sciences, computer science, biomedical sciences, and law.

As Imbens continued to push the limits of what could be learned from natural experiments, a change had been brewing in empirical economics. In 2010, Angrist and Jörn-Steffen Pischke coined the term “credibility revolution” to describe how the field had evolved since Leamer’s bleak assessment back in 1983. No longer did data-driven research suffer from a “distressing lack of robustness,” they wrote. Instead, economists were using well-designed studies to provide hard numbers that could inform policymakers and bridge the gap “between the real world and the ivory tower.”

GSB Dean Jonathan Levin, an economist himself, attributes this radical shift to two factors: the astronomical rise in computing power and data analysis, as well as changes in how researchers think about using data to answer causal questions. In addition to developing a toolkit for drawing precise conclusions from observational data, Imbens and his colleagues also developed a new terminology, Levin says. “It became the way people talked in seminars and asked questions and thought about things,” he says. “Once that language was there, it changed the way people think, and that was incredibly powerful.”

Over time, the research methods they pioneered became dominant in economic research, and even spread to the other social sciences and medicine. In 2000, four years after it had published, a paper by Imbens, Angrist, and Rubin on identifying causal effects using instrumental variables had been cited 162 times. As of today, it has been cited over 6,500 times.

BRIGHT AND EARLY

When a media crew descended on their home before dawn on October 11, Imbens’ and Athey’s kids (from left) Andrew, Sylvia, and Carleton provided logistical support and cooked breakfast for everyone.

AT 2:13 A.M. ON THE morning of October 11, 2021, Imbens woke to the sound of his cellphone ringing. The caller ID showed a number from Sweden. He and Athey stared at the phone for a moment, the gravity of the situation sinking in. “When you get that phone call in the middle of the night, it takes on this dreamlike quality,” she says.

Imbens answered, and learned that he, along with Angrist and Card, had won the 2021 Nobel Prize in Economic Sciences.

He also learned that he would need to be dressed and ready for a live press conference in precisely 20 minutes. He and Athey woke up their kids to share the news. Then he squeezed in a quick conversation with his brother and sister in the Netherlands.

A gaggle of press and PR people arrived in the driveway. The Imbens kids searched for extension cords for everyone’s laptops, and even began cooking a breakfast of scrambled eggs and pancakes for the crew. Wanting to give Imbens time to savor the moment, Athey dove into managing the onslaught of media requests: “BBC wants to talk to him on Skype! Wait, does he even have a Skype account?” It was a joyful sort of chaos.

Once the sun came up, a Stanford media team shot a video with Imbens and his kids to help explain his work to the many people suddenly keen to learn more. (An early NPR report stated that Imbens, Angrist, and Card had analyzed “casual relationships.”) Sitting next to him on a couch in their backyard, his 10-year-old daughter, Sylvia, offered a concise explanation of natural experiments. “It’s very interesting how you can take data from things that were completely not intended for you... and then use it to just draw these astounding conclusions,” she said.

That afternoon, Imbens showed up to his weekly student workshop, “almost as if nothing had happened,” says doctoral candidate Michael Pollmann. His advisees congratulated him with a bottle of champagne, but after a few minutes of chatter, Imbens insisted on getting down to business, answering questions and offering feedback on students’ research.

Later that evening, still in a daze, Imbens spoke with Angrist and Card on a video call. They remembered Krueger, who had died in 2019, and reminisced about the work they’d done — where it all began, and how far the field has come since.

“Nobody had really started off on that journey thinking that this is where it would go,” Imbens says, “but this does feel like an end to a journey — a very unexpected end. And it was just great sharing that.” **GSB**

Szu-chi Huang⁵⁶ Harpreet Mangat⁵⁸
Charles Chu⁶⁰ Jim Friedlich⁶²

Voices



Szu-chi Huang, associate professor of marketing

IN HER TWENTIES, SZU-CHI HUANG hobnobbed with Hollywood celebrities like Rachel Weisz and Charlize Theron as an advertising campaign manager at J. Walter Thompson agency in Taipei, Taiwan.

While working on a shampoo commercial for the British consumer goods company Unilever, Huang's team hired an expert to teach actress Claire Forlani kung fu and sourced rich red fabric to turn the set into an ancient Asian palace. "It was a fun production," Huang says. "My life was definitely exciting."

Eventually, though, Huang began to feel antsy. She was designing campaigns based mostly on market research but also intuition. She wanted to know why some campaigns performed better than others, boosting a company's sales, and what factors were responsible for driving consumers' preferences and decisions.

"That was when I started to realize that creativity is great and I love it, but when it comes to creating business impact, I felt like I needed more training on the science."

HOMETOWN

Taipei, Taiwan

EDUCATION

PhD, Marketing, McCombs School of Business, '13
MA, Advertising, University of Texas at Austin, '08
BS, Business Administration and Economical and Financial Laws, National Taiwan University, '02

ACADEMIC AREA

Marketing

Huang quit her job and moved to the United States, where she earned a master's degree in advertising and a PhD in marketing from the University of Texas at Austin. Now an associate professor of marketing at Stanford GSB, Huang studies consumer motivation and behavior, particularly in social settings.

Her research ranges from looking at what prompts Weight Watchers participants to accomplish their goals to the motivation behind charitable donations. A common thread is what Huang calls "the perceived attainability of making an impact." She's drawn to work that can promote long-term health, happiness, and stability.

ELENA ZHUKOVA

"I believe behavioral science is exactly what we need to make a difference in this world."

To maximize well-being, people need to feel like they're advancing toward their individual or collective goals — whatever those may be, Huang says. “My research speaks to how we can best sustain motivation toward these valuable goals so we continue to feel that we're moving forward and growing.”

A Creative Childhood

Huang grew up in Taiwan, the daughter of an art gallery manager and photographer father and music teacher mother. She was surrounded by art and played piano and flute.

At National Taiwan University, she studied business administration and law, figuring the degrees would teach her how to run a business and help her contribute to the island's growth.

Most of her peers went into business or took exams to become judges or prosecutors. But Huang chose advertising. It was still business, but there was a creative element that appealed to her. Later, at McCombs, her doctoral study included courses that explored what drives people to eat healthy and exercise.

“I found myself becoming more and more passionate about behavioral science,” she says. Understanding motivation helps us to become better influencers, she adds. But it also illuminates ways in which we may be influenced by others, and how to protect ourselves from those forces.

Huang chose Stanford over several other job offers in 2013, in part because the Bay Area's significant Asian population, food, and coastal setting reminded her of home. “Stanford business school's mission also strikes the best balance between being innovative and creative, while being effective,” she says.

However, assimilation has been a challenge. “I'm sensitive to the moments that I stand out, speak imperfect English, or have a different point of view because of my cross-cultural background as a first-generation immigrant,” Huang says.

That sense of being an outsider extends to her career. In the corporate world, Huang found herself seeking more academic rigor, while in academia she often yearns for more concrete relevance. It's challenging to find that balance, she says, to find her own voice.

Nourishing Good Choices

Essentially, Huang's research explores how to help people become better — better eaters, better savers, better contributors — and how to sustain the behavior that enables their success.

“Her research is impressive for its multimethod approach of lab studies plus field experiments,” says Jennifer Aaker, a marketing professor at Stanford GSB. “It's fundamentally changed the way the field views consumer goals and motivation. Szu-chi is what we call a triple threat — outstanding in research, teaching, and service.”

In a recent research project, Huang worked with UNICEF and the Panamanian government to help figure out how to encourage children to make healthier food choices. “Children there are vulnerable,” she says, “because they have even less access to nutrition education and healthy food options.”

Huang and her team came up with three goals children valued — being healthy, smart, and popular. Aiming to steer the kids away from sugary beverages like soda, they then designed a series of posters touting water consumption and placed them around the schools, including at a kiosk that sold bottled water.

The researchers found that promoting water as a means of boosting health increased water sales. “We were trying to make water more interesting, kind of like how some big sugary beverage brands have associated themselves with happiness or being cool. However, it turns out that ‘telling it as it is’ was most effective for promoting water,” Huang says.

The Journey Is the Destination

One of Huang's favorite studies, published in the *Journal of Personality and Social Psychology*, tests what behaviors could help people accomplish their goals.

Huang and Aaker, her coauthor, hypothesized that having a “journey mindset” rather than focusing on a desired outcome could help people retain lessons and continue improving. They conducted experiments with more than 1,600 people across cultures, including college students and executives in Africa.

They asked a subset of participants who had achieved their goals to reflect on their journey in writing. Those subjects were more likely to continue the behaviors that helped them reach their goal than those who framed their experience in terms of its outcome or made no reflection at all.

“If we just think about the destination, then there's nothing to strive for, we're done,” Huang says. “But if we look back, that reflection really allows us to learn from that experience. All the decisions I made during the journey become more meaningful and more valuable.”

Huang's preferred research method, field experiments, satisfies her desire for real-world relevance, she says, but is also often her biggest challenge because “that doesn't always equate to publication.”

Such experiments often require years of design, collaboration, and setbacks, and may produce messy results. Her approach and findings don't sit well with some in academia who prefer lab experiments that result in “clean” data.

Nevertheless, Huang hopes her discoveries will help to drive significant change in the field. “I believe behavioral science is exactly what we need to make a difference in this world,” she says.

— Deborah Lynn Blumberg

Nothing Compares to You

“When pursuing a goal or trying to make a change, sometimes it can feel like a competition, and I get insecure about falling behind. In these moments, I remind myself that we are different people with very different histories — hence, there is no need to compare. All I need to focus on is to do better than yesterday.”

Harpreet Mangat, MBA '22

INSPIRED BY HIS FAMILY to help people, Harpreet Mangat set his sights on medicine when he was a child growing up in England and India. He took the right classes, graduated with high marks from Cambridge, and in 2011 became one of a handful of doctors in the UK selected to enter the National Neurosurgery Training Programme.

He was attracted by the challenge of trauma care, and worked with cutting-edge technology such as robotic electrode implantation. “The virtual brain biopsy was done with something akin to satellite navigation,” Mangat recalls.

The precision required in neurosurgery aligned with his abilities. “My seniors often remarked that I had ‘very good hands.’ But I also credit a lot of my skill to my youth, when I played video games at a professional level. Today, I’m always doing things with my hands. I’ve learned how to fix my car. I knit. I do microsoldering. I like to say that my hands ‘get itchy.’”

But after more than a decade performing surgery, Mangat became disillusioned with medicine. Underresourced hospitals meant more time spent on administrative tasks than in the operating room. He no longer felt challenged. After a long night shift,

HOMETOWN

London, United Kingdom

EDUCATION

MA, University of Cambridge, '10
MD/MBBS, University of Cambridge/UCL, '09
BA, University of Cambridge, '06

PROFESSIONAL EXPERIENCE

Management consultant, McKinsey & Company
Neurosurgeon and physician, National Health Service

Mangat thought about his next 30 years and was left questioning the career path he'd spent 15 years planning.

“I was becoming super specialized in a very, very small niche,” Mangat says. “The experience didn't live up to my expectations. I wanted to help people, full stop. But five percent of my time was spent with patients, the rest was bureaucracy. I just felt sad. In England, leaving medicine is very frowned upon. I had no support in making this kind of jump.”

But Mangat took the leap, landing at McKinsey to work in consulting within the pharmaceutical and data science industries. Then, in 2020, as COVID hit, Mangat teamed up with his colleagues to provide ventilators to developing countries.

At Stanford GSB, his sights are set on venture capital, a field that allows him to stay at the forefront of innovation while still helping people. And in one of those “only at Stanford” moments, Mangat recently reconnected on campus with an unforgettable former patient.

What did you learn during your time at McKinsey?

I learned about the importance of empathy outside of the doctor-patient relationship. That's such an important skill: the relationship-building, being a mentor and a support. I remember in my final interview when I was first applying at the firm, our discussion was off the rails — toward the end it had nothing to do with consulting. And when we did finish talking, I could see what my interviewer had written on my feedback form. He hadn't actually entered any scores into any of the boxes. He just wrote one word: empathy. That's such an important skill these days because business is no longer transactional; a lot of it is making sure that you can develop the trust of people you are working with.



NANCY ROTHSTEIN

“I spent a life in medicine calculating and eliminating risk, but the GSB has taught me to embrace risk.”

You worked as chief of staff for Vivian Hunt, a senior partner at the firm. What was that experience like?

She was the greatest mentor I've probably ever had. I was shown a completely different side of business from the day-to-day — the Excel, the PowerPoint, et cetera — I was seeing the higher level. Business is actually about building trust. As long as you still produce substance, people support you because they care about the relationship you've built with them.

You then left McKinsey to join the fight against COVID. That must have been difficult, especially after it was so tough to leave medicine in the first place.

I took a leave of absence from McKinsey to join the front line. I worked with some of the worst cases in England as an intensive care doctor at the Royal Free Hospital London, the UK's main infectious disease center.

This was at the time when people were dying left, right, center. We were making palliative care centers in what used to be conference centers. I volunteered in part for the patients, but also for the doctors and nurses. These same people had helped my family. They sacrificed so much. Healthcare workers were getting sick and dying, too. Going back into medicine felt like it was something I could do for society.

At that time you were also interacting with the healthcare system on a more personal level. Can you tell us more about that?

Just before COVID, my dad needed a kidney transplant. My sister volunteered [to donate a kidney], but there were significant surgical complications. She suffered major blood loss, oxygen deprivation, and was in a coma. When my dad woke up, he'd gotten a new kidney, but he'd almost lost his daughter. The shock eventually caused him to have a heart attack.

My Stanford application was due at the same time. I asked permission from my sister and my dad to leave their bed-

sides in the ICU to go write my Stanford essay. I had all the other stuff prepared — the logistics, the transcripts — but the big substance of it, the “what matters to me most and why” had changed dramatically after what my family and I had been through. It made me think about sacrifice. I wrote about my desire to help people and how that was going to motivate me for the next steps in my life.

Fortunately, my sister and dad both recovered, but only a few weeks later COVID swept the globe and many people — including the clinicians who had helped my family — started passing away.

What was it about Stanford GSB that excited you?

I wanted to be involved in healthcare. I wanted to be in tech. And where is cutting-edge tech? Well, Stanford and Silicon Valley. Being here is such an opportunity to take two years out to really understand myself, think about what I want to do in life, and get exposure to so many opportunities. What I learned is I also love context switching: I don't like deep-diving and being involved in a project for 5 or 10 years. In venture capital you can work with multiple teams every day, working on different ideas.

Your fellow students and the Stanford GSB community learned something very interesting about you at a recent View From The Top event with Malala Yousafzai.

I wanted to introduce myself to Malala and ask a question. I had met her once before, but she wouldn't have remembered me because she was unconscious in the ICU, having been shot in the head by the Taliban. I was one of the doctors who looked after Malala. I had followed her career afterward.

And your classmates hadn't heard this before?

After the event, people came up to me and said, “Why have you never told us this? I can't believe you've got all these

stories!” I'd never shared because it is Malala's story, and I didn't want to take that away from her. Getting to meet her again was an amazing opportunity I was never sure I'd have.

You've changed careers a few times now and have lived in many places.

Moving is kind of a comfort zone for me. Growing up, I went to eight different schools and lived in nine different houses. My mom and dad wanted my sister and I to get a better education, so they'd take us somewhere with a plan to actually settle down, but find the schools weren't good enough. One of the biggest sacrifices my mom and dad made was moving from Punjab to the UK. Then, once I started working in medicine, I was changing jobs at least every year. That was made easier by the fact that I'd had this background of moving around so much and I didn't mind it. I thought of myself as something like an urban nomad.

What lies ahead for you?

I don't have to live such a predictive path as I did before. I've given up on a 15-year plan. I've even given up on a three-year plan! I can't look three years back and say I would've been here at Stanford. In medicine, I was trained to be so risk averse. But now, I'm very much the kind of person who is accepting of risk. Business school has really helped with that. What I do know is that I want to always be challenging myself, but I also want to make time for what is important: my family.

— Jenny Luna

What's Up, Doc?

Mangat was in the audience when Malala Yousafzai spoke on campus last fall. During the question and answer session, he reintroduced himself to his former patient. Listen to the exchange at stanford.io/vftt-malala.

Charles Chu, PhD '23



POLARIZATION HAS BEEN A FEATURE of American culture for at least a decade, but differences in how people think have influenced Charles Chu's worldview for much of his life. Born in Tianjin, China, Chu emigrated with his parents to Kalamazoo, Michigan, when he was a small boy. From the moment he arrived, he was taught that working hard was the best way to feel a sense of security in the United States. Now, as a PhD student at Stanford GSB, he aims to understand how people's beliefs about their sense of self affect how they see the world, particularly in the context of intense ideological partisanship.

Under the guidance of professor of organizational behavior Brian Lowery, Chu surveyed 2,000 people online to see how they perceive individuals from the other side of the political spectrum. "It's clear from my work that we experience disagreement, especially in the domain of politics, in a deeply personal way," Chu says.

His research has been informed by his own experience as an Asian immigrant and as a gay person. "Growing up in a predominantly white community, and my experience as a gay man, have always made me aware of how people experience things that are different from what they expect or from what they know," Chu says.

HOMETOWN

Kalamazoo, Michigan

EDUCATION

MS, Industrial and Organizational Psychology, Indiana University-Purdue University Indianapolis, '17
BA, Economics, Yale University, '12

"How do people navigate and process things that are unexpected or surprising to them, or things that don't conform to what they already know about the world?"

What questions are you trying to answer with your research?

We live in a society that places a high premium on the individual self. We have this belief that people act the way they do and have the outcomes they have in life because of something deep and core inside of them. My research tries to question this view of the self. I try to show that having this view of the self can lead us to make some pretty unwarranted judgments about other people and even justify societal inequality.

The specific idea that I'm proposing in my dissertation is that this way of thinking about the self can lead us to have more extreme and polarized judgments of other people. I study this in the context of American politics, where I find that people who believe in a core, deeply rooted self are more polarized in their judgments of others who either agree or disagree with them on political issues.

This is an especially interesting time to study this idea given the degree of polarization in America. How has that affected what you are learning?

We assume that we're dissimilar from people on the other side of the political spectrum. But in my dissertation work, I find that by highlighting agreement and certain beliefs that we share with people from the opposite side, we can improve our interpersonal relationships with them. We do this because we're trying to maintain our own identities and our own grasp of reality. When we have similarities with other people from the opposite side of the political spectrum, that's even more of a validation or an affirmation of

"It's clear from my work that we experience disagreement, especially in the domain of politics, in a deeply personal way."

my truth, the way that I see the world and my own place in it.

A powerful real-world example of this is [Republican Rep.] Liz Cheney. She's gotten a lot of press because of the backlash from her own party over her refusal to get in line with the idea that the election was stolen from Trump. She is being heralded as a hero by many on the left. Until recently, Liz Cheney was as close to Republican Party royalty as you can get, and she probably disagrees with liberals on virtually every issue. So to see staunch Democrats all of a sudden embrace her because they agree on the single issue that the election wasn't stolen suggests that her position is extremely meaningful to many on the left — she's confirming their worldview.

Ideological differences are not new, but now there seems to be a tendency to vilify people on the other side. Has your research found that to be true?

Like a lot of prior research, I do find that we want to socially distance ourselves from people who we think have fundamentally different viewpoints. And we also engage in prejudice by stereotyping and directing negative emotional reactions towards those people who we perceive as being different and who disagree with us. But I find that this is especially true for people who believe we have core, deeply rooted selves.

To me that suggests that our belief in a deeply rooted self leads us to think that there's just something fundamentally wrong with another person who disagrees with us, when in actuality, people can disagree for a variety of reasons. Maybe they live in a different environment than us, where having a different opinion might make more sense.

Do you have advice for how we can communicate better with people whose political views are different from our own?

For me, someone else's positions on race relations, abortion, capital punishment,

or gay marriage have deep relevance to me and they affect what I perceive to be my community and my group of people.

It's easy to come at it from your own perspective and not be able to understand that someone else's position is grounded in their deeply meaningful perspective and deeply meaningful relationships, too. We need to be understanding and acknowledge the enormous emotional weight that these topics have for people and that their opinions might be reasonable for the contexts that they live in — as much as I may disagree.

How do you conduct your research?

I'm very grounded in social psychological methods. We use experiments to identify what is the causal relationship between things. We do that by running a lot of online survey experiments where we expose people from both sides to hypothetical or described individuals from the other side. We see how people perceive and respond to those people.

For example, I'll present participants [who identify as liberal] with someone who is an opposing partisan. So let's say Jamie is a conservative. And you don't know anything about Jamie except for their position on abortion or capital punishment, or whatever other issue I use. I randomly assign participants to two different conditions: one in which they see that Jamie believes abortion should be legal, and another condition where it should be illegal. Then I ask them to rate Jamie on likability and trustworthiness.

What is the origin of your interest in this kind of research?

A lot of it started for me when I worked as a project manager in my first job out of college. I did not have a very positive experience there because the organization was not very diverse and not very inclusive. There were a lot of team-dynamic issues and perceptions of unfairness across the organization. That made

me really interested in wanting to improve people's experience at work.

Many people can identify with being in a workplace and wondering if you really belong there; feeling like only parts of you — only very generic, stereotypical parts of you — are recognized or appreciated.

Has your research on how people maintain their identities changed the way you think about your own experience?

My research has had a huge effect on how I think about my experiences growing up, and my family story. My parents came to the United States with very little. My mom waited tables while getting a master's degree, and my dad hustled and did his PhD in two years. And I tried to follow in their footsteps. I studied hard, focused on school, tried to get into the best universities I could, all for the hope of security and acceptance in this country.

When I tell it that way, our family story sounds very much like the American dream. But the flip side is that although my family was very poor when we emigrated from China, my parents are also children of college-educated parents, which was rare at the time. My great-grandfather was one of the first Chinese students to go to school in the States — he went to Yale. So when you think about that part of the family story, it sounds much more like a story of privilege reasserted.

Knowing what I know now about how our environments shape our identities, I can see how much this part of the story has shaped who I am and who my family is. I don't think it takes anything away from the hard work and sacrifices that my parents have made to acknowledge this and recognize that our blessings come from some things that we control, and some things that we don't.

— *Aliyah Chavez*

Being Seen

Chu recommends the "How to Become Batman" episode of NPR's *Invisibilia* podcast. It's about a blind man who uses mouth clicks as a kind of "sonar" to do things sighted people do, like riding a bike. "It's such a vivid example that how other people treat us and what they expect of us can powerfully shape our identities, and even change our biology."



Jim Friedlich, MBA '85

JIM FRIEDLICH COULD HAVE BECOME a journalist. While at Stanford GSB, he reported for both the *San Francisco Chronicle* and the *San Jose Mercury News*. Instead, he decided to help save local journalism, which has been embattled since the late 1990s by internet competition, plummeting ad sales and print readership, and relentless cost cutting.

As executive director of the nonprofit Lenfest Institute for Journalism, which owns *The Philadelphia Inquirer*, Friedlich heads America's leading local journalism philanthropy — raising capital, fostering collaborations, and making grants to news organizations nationwide. The institute concentrates on funding high-impact reporting, new technology, and diversity initiatives in Philadelphia and around the country. *The Inquirer* is now the largest American newspaper under nonprofit ownership.

While working as an executive at Dow Jones & Company, Friedlich helped create *The Wall Street Journal's* pioneering digital paywall. He left the company to become a founding partner of ZelnickMedia (now ZMC), a media investment firm. In 2011, he founded Empirical Media, specializing in the digital transformation of the news business.

HOMETOWN

Philadelphia, Pennsylvania

EDUCATION

MBA, Stanford GSB, '85

BA, Wesleyan University, '79

PROFESSIONAL

EXPERIENCE

Executive director, Lenfest

Institute for Journalism

CEO, Empirical Media

Founding partner, ZMC

Advising cable television entrepreneur and *Inquirer* owner H. F. "Gerry" Lenfest led to Friedlich's current post. (Lenfest died in 2018.) Recently, Friedlich advised Maryland businessman Stewart Bainum Jr. as he sought to buy *The Baltimore Sun* from its owner, Alden Global Capital, a hedge fund infamous for gutting local papers. If that doesn't work out, Friedlich says, "he will likely, with our help, launch an alternative."

Why the media business?

I thought journalism was vitally important to America — that it had broad influence in society and on government and business. At the time, I also thought it was a good business. I was quite torn about whether to be a journalist or a businessperson. My mission has become to apply new business models to save and advance great local journalism. I'm a kind of shape-shifter, a business executive with the heart and soul of a journalist.

You worked for Dow Jones after Stanford and participated in the creation of *The Wall Street Journal's* paywall. How did that come about?

After a foreign assignment in Europe, I was promoted to group publisher for Europe, Asia, and, eventually, Latin America. In the late 1990s, we launched *WSJ.com*, and I was appointed head of corporate development for Dow Jones' digital products. That was a very important strategic moment for newspapers. Some of them were prescient; some of them were, frankly, quite stupid. We believed strongly that our content had value — that we needed to charge money for it, and that it would be suicidal to give away content for free on the internet and charge handsomely for it in print.

Most other newspaper companies made a different choice. The argument was that the internet was a free medium, and that we were all trying to build brand — that digital news was an advertising play. The belief was that newspapers



Praising Kane

"*Citizen Kane* has special resonance for me because William Randolph Hearst III, upon whose grandfather Kane is based, became a friend and mentor early in my news career. In the second year of business school, I sent a handwritten note of introduction to Will Hearst, then publisher of *The San Francisco Examiner*. My opening line was my favorite quote from the movie: 'I think it would be fun to run a newspaper.'"

would make money like broadcast TV does, by building big audiences and monetizing through advertising. It turns out digital advertising is not a good business, while digital subscriptions — getting users to value and pay for your content — can be, as the *Journal* has proved.

Why did you leave Dow Jones?

In 2000, like many people, I caught the dot-com fever and decided to go into media investing. Partly I wanted to make better use of my Stanford GSB training. I was for 10 years a partner in a growth equity and private equity firm. Our most successful investments were not in journalism at all — they were in entertainment. We had taken over a public company best known for a video game called *Grand Theft Auto*. And we were the lead investor in a TV business that produced the show *Gossip Girl*. When my son Max was in seventh grade, I was briefly the coolest dad in New York City. I wandered, frankly, much too far from journalism.

I started my own company, Empirical Media — designed as a mini-McKinsey, focused on the digital transformation of journalism. The clients were *The New York Times*, *The Wall Street Journal*, Bloomberg, and the Tribune Company, among others.

I found my way to the *Inquirer*. I had a friend and business partner, Geraldine Laybourne, who had been the CEO of Nickelodeon, and she was friends with Gerry Lenfest from their days in cable TV. She called one day, and said, “My friend just bought a newspaper. You’re in the business of saving newspapers, right?” I called Mr. Lenfest, a billionaire who answers his own phone on the first ring, and he invited me to Philadelphia.

It was love at first sight. We spent about six months working with *The Philadelphia Inquirer*, and I was offered the job of running the Lenfest Institute for Journalism, its parent company. Gerry gifted us the *Inquirer* as well as an endowment to help us transform it.

The structure Lenfest created is unusual in the industry.

It is unusual. The Lenfest Institute is a 501(c)(3) nonprofit organization. One of the assets we own is *The Philadelphia Inquirer*, and the *Inquirer* is a for-profit business. Gerry, as a self-made cable mogul and entrepreneur, wanted the *Inquirer* team getting up in the morning eager to sell advertising and subscriptions and not feeling like they had a sugar daddy.

What are the principal challenges facing local news organizations, and how is Lenfest addressing them?

Our focus is finding and accelerating sustainable business models for important local news — not specifically saving the newspaper industry. We happen to believe that in many markets, like Philadelphia, the newspaper remains by far the most important source of investigative news and public service journalism. We remain believers in saving strong newspapers — where they exist. There are many cities that no longer have a decent newspaper or any newspaper at all.

At the *Inquirer*, we have made deep investments in digital transformation and digital subscription marketing — the business of the business. We’ve devoted a lot of energy and money to diversifying the newsroom, the coverage, and the voice, so that the *Inquirer* better reflects the highly diverse city of Philadelphia. And we’ve invested directly in high-impact investigative journalism.

How do you measure success?

The investment in investigative news is straightforward to measure. The *Inquirer* series “Toxic City” was on asbestos in the Philadelphia public schools. We financed the environmental testing and reporting, and that resulted in the promise of hundreds of millions of dollars of remediation by the city and state and a \$100 million gift from the University of Pennsylvania for the cleanup of

Philadelphia public schools. I told Gerry, “We spent \$35,000, and the community responded with over \$100 million.” For investments in new technology and product development, the main measures are the quality of the user experience and the revenue from digital subscribers. Our investments in diversity attract new and diverse audiences every day. We believe in our soul that diversity is essential to journalism’s business sustainability.

You’ve called Philadelphia your “test kitchen.” What have you learned that has national implications?

When I arrived, I thought philanthropy was a bridge to a different kind of sustainable future — that it would be, “Brother, can you spare a dime?” for a few years, after which we’d have a robust digital business model. I now believe that philanthropy is a critical, permanent part of local journalism. Lenfest has been a part of a national movement to build journalism as a meaningful philanthropy.

It seems that collaboration and partnership are core values for you.

That’s right. When I first got to Philadelphia, a sharp-elbowed news market, I had a meeting at a fancy restaurant with about 20 of the city’s news leaders. It was all about how we might make Philly function as a collaborative “news ecosystem.” One of the editors said to me afterward, “This was an incredible evening. Before this, half of us didn’t know each other, and the other half hated each other.”

What Stanford GSB lessons have you applied along the way?

The instinctive default to collaboration versus competition is something I associate very closely with Stanford. To me, a mission-based approach to business is synonymous with Stanford’s culture — a desire to do well and to do good.

— Julia M. Klein

“I’m a kind of shape-shifter, a business executive with the heart and soul of a journalist.”



WHAT MATTERS TO ME NOW AND WHY

Alex Tonelli, MBA '11



I love the faces candidates make when I ask them *the question* in a job interview. I wish I could've seen my face the first time I saw it. No one had asked me something like that before.

When I applied to Stanford GSB in 2008, I didn't know what mattered to me, let alone why. I was just trying to make it out from a tough background. My parents had disappeared when I was a baby, and I became an orphan when my grandparents passed when I was young. By the time I was 17, I was couch-surfing in a way that some would describe as homelessness.

At 24, I was doing my best Gordon Gekko impression as a private equity associate, proud of my tie collection, and thinking about how to land a hedge fund job. I begrudgingly embarked, probably for the first time, on some self-reflection. It occurred to me that I was exceptionally grateful for three things: my grandparents, the boarding school that gave me a scholarship, and the people who had stood up for me and given me a chance.

As I wrote my application, I resolved that I would, first, for my grandparents, "build a family from the ashes and become a good citizen, husband, parent, and human being." Second, I planned "to search

for deserving students and provide an ongoing scholarship for the Hotchkiss School," the boarding school I'd attended.

"People wrote me off as a kid from a broken home, but a few adults believed in me. I owe it to the people who invested in me to impact the lives of others," I wrote. I concluded that "repaying my debts to those who invested in me is my most important priority and responsibility."

On the Farm I realized how I could achieve these goals. Before or after class, I went out of my way to walk past the cornerstone dedicated "to things that haven't happened yet and the people who are about to dream them up."

Since then, I've been fortunate to collaborate with many classmates as we pursue our mission to "chase meaningful problems with people we care about." We've built companies that have provided loans to people who can't get them otherwise, healthtech that enables better care, job opportunities, medical debt relief, software democratizing capital, and fair mortgage pricing.

I'm still not sure why I made those three resolutions in 2008, but I wouldn't change a word of what I wrote. Each day my main goal is to try to live up to the first resolution with my wonderful wife and three children. The second was perhaps the easiest: As soon as I was able, I set up a scholarship for Hotchkiss students and am working to expand its reach. Finally, I beat the alarm clock most days — I wake up energized to build companies that give people a chance.

I've learned that being disadvantaged isn't an excuse to be a "taker," but a privilege to be able to multiply the opportunities I was given. It's funny to chalk so much up to just one question, but I'm eternally grateful that it was asked and grateful to my classmates and collaborators who helped me pursue its answers. **GSB**

RECONNECTING

Alex Tonelli, MBA '11, is the managing partner of Endurance Companies, a venture lab focused on building mission-driven fintech and healthcare companies.

Repaying my debts to those who invested in me is my most important priority and responsibility.



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Net-Zero Pledges, ¹¹Sonification, Ba
Impact Deals, Trust Radar, Bad Ha
Circles of Interests, Information A
²⁷Underground Archives, Local Jou
The Credibility Revolution, Being P
Chasing Meaningful Problems, Me
The Pillory Effect, Your Managem
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