

#### A LETTER FROM DEAN JONATHAN LEVIN

#### The GSB and Sustainability

ustainability and climate change are becoming topics that no business leader can ignore. With the potential for significant policy shifts, the rise of ESG investing, employee and public activism, and accelerated innovation, sustainability is becoming a core business issue.

At the GSB, sustainability is entering into many areas of management that we teach and study: from accounting to finance to operations to marketing. We recognize that the students we are educating today will grapple with both the immediate challenges of climate change and the long-term challenges of ensuring a sustainable planet.

The 2015 Paris Agreement aims to limit global warming to 1.5 degrees Celsius relative to pre-industrial levels. To do this, the world will need to achieve net-zero greenhouse gas emissions by around 2050.

Economics Nobel Laureate William Nordhaus describes reaching this goal as a "global public good." As such, it is classically a problem for governments to address by establishing policies, such as carbon pricing, that give the private sector an incentive to limit emissions and invest in sustainable technologies. These policies have been politically contentious.

In the absence of government action, stakeholders — including consumers, employees, and activists — are pushing businesses to act unilaterally. Asset managers like BlackRock are directing portfolio companies to focus on climate change. The shift in investor sentiment also is reflected in the stunning rise of environmental, social, and governance (ESG) investing.

Whether in response to such pressures or in anticipation of changing economic and political environments, many firms have pledged to move to net-zero emissions. In 2020, more than 1,000 companies — including those in the airline, consumer product, and tech industries — committed to reach net-zero carbon emissions in 10 to 30 years. Even traditional energy companies are moving. Bernard Looney, MS '95, began his tenure as CEO of BP last year with a net-zero commitment.

In many cases, the path to implementation on these commitments is unclear. At a minimum, many gaps need to be filled to reach a low-carbon economy. We need innovations in energy, improvements in measurement, new financial instruments, changes in regulation, and substantial changes in business practices and operations. Stanford GSB has an important role to play in helping the world move in this direction.

Many of our faculty have long-standing commitments in their research and teaching. Erica Plambeck has worked extensively on sustainable supply chains and environmental innovation and responsibility. Stefan Reichelstein is a leading expert on measuring the cost-effectiveness of renewable energy, and more broadly on energy transition; he and lecturer Donald Wood teach the GSB elective *Clean Energy Opportunities*. Multiple GSB faculty are affiliated with the Stanford Woods Institute for the Environment, and an increasing number of



Jonathan Levin is the dean of Stanford GSB and the Philip H. Knight Professor

faculty are working on sustainabilityrelated topics and thinking about future teaching opportunities.

Student interest is also on the rise. The E-IPER Joint Master of Science (MS) degree in Environment and Resources is one of the GSB's most popular joint degrees, attracting more than 60 of our current MBA students. This year, students held the third annual GSB Climate Summit, with nearly 700 participants. And the Stanford GSB Impact Fund has a student team sourcing environment and energy investments.

As we build the GSB's strength in sustainability, we are looking to collaborate across the university. Stanford has announced plans to create a new school focused on sustainability and climate, and we believe this will create new opportunities to work together on teaching, research, and programs. The GSB's participation will be important in enabling Stanford to bring together the technical, scientific, business, and policy issues involved in sustainability.

We are inspired by the many GSB alumni who are working on sustainability and climate change, including those profiled in this edition of the magazine. We look forward to engaging you in our growing efforts, and in those of the university. GSB

We recognize that the students we are educating today will grapple with both the immediate challenges of climate change and the long-term challenges of ensuring a sustainable planet.





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#### "We Bring Stanford to You" 30

Since it launched in 2013, Stanford Seed has enlisted alumni, faculty, students, and staff to help hundreds of companies in emerging economies expand their businesses — all with the goal of creating jobs and lifting people out of poverty. This is the story of two of those enterprises.

#### Green Giants 40

Forget about electric cars and meatless meat: Mounting a serious response to climate change requires inventive work in less-glamorous sectors such as risk management, corporate consultancy, and private equity. Here are five Stanford GSB alumni quietly pulling levers to save the planet. *Beth Jensen* 

#### Bridging STEM's Gender Pay Gap 46

In engineering and tech, women are paid less than men for entry-level positions — and it has nothing to do with their skill sets. *Corey Binns* 

#### Give Them Shelter 50

Want to solve America's urban homeless crisis? First, you have to believe it can be fixed.

Alexander Gelfand



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#### EDITOR'S NOTE

#### **Happy Accidents**

TALK TO US
Have some
constructive
criticism? Some
praise? Some
story ideas?
We're eager
for your input.
Please email
the editors at
stanfordbusiness
@stanford.edu.

e love it when the universe conspires to make us look smarter than we are

As we were putting the final touches on this issue of *Stan-ford Business* magazine, someone pointed out that it contains a trio of long-form articles that align with the three pillars of the school's motto: "Change Lives, Change Organizations, Change the World."

"Give Them Shelter" (page 50) tells the story of a team of GSB alumni who are tackling the homeless crisis in San Francisco and beyond. The cornerstone of their audacious plan is already under construction: a six-story stack of cozy, prefabricated micro-studios that will soon **change the lives** of hundreds of people, many of whom now live on the streets.

"Green Giants" (page 40) highlights alumni who are working in a variety of ways — and largely behind the scenes — to decarbonize the economy and prevent cataclysmic climate change. By focusing on non-glamorous but pivotal sectors such as risk management and private equity, they are looking to **change organizations** in fundamental ways, all with an eye toward saving the planet.

Our cover story, "'We Bring Stanford To You'" (page 30), focuses on two companies — one in Kenya, the other in India — that have been nurtured by Stanford Seed, the school's transformative, international executive-training program. Seed enlists and deploys alumni, faculty, students, and staff to teach promising entrepreneurs in emerging economies how to scale their businesses. The goal is to create jobs, boost local economies, and reverse the global cycle of poverty. In other words, **change the world.** 

If we'd spotted that obvious thematic thread earlier in our production process, we might have packaged those articles together more conspicuously, and you, dear reader, never would have known what we're about to confess here: that a lot of the best work that gets done in these pages results from happy accidents. — *The Editors* 



#### **Alumni Career Services**

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#### **Inching Back to Normalcy**



As the Spring 2021 quarter kicks off at Stanford GSB. masked students are returning to a campus sprinkled with outdoor classrooms and study spaces. Tents are set up in Town Square, Community Court, and elsewhere. As the world inches back to pre-pandemic normalcy, the school has found a way to resume the magic of in-person teaching. Artist Cornelia Li captures this temporary transformation.



# anford Business

#### **ABOUT THE COVER**

Frank Omondi, CEO of Ten Senses Africa in Kenya, is one of hundreds of entrepreneurs who have benefited from the Stanford Seed Transformation Program. In this photo by Louis Nderi, Omondi displays the macadamia nuts that are at the core of his business. His story begins on page 30.

#### EDITORIAL

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# Briefings



HARD LESSON

#### In Sports, the Customer Cares About One Thing: Winning

The worst moment of my career — and one of the most mortifying moments of my life — happened on May 20, 2012, when I stood at center court of Oracle Arena in Oakland, trying to talk to a sold-out crowd of 19,596 people, and got booed into silence.

I had bought the Golden State Warriors basketball team in 2010 with a group of investors. The team hadn't won an NBA championship since 1975, and we were taking steps to turn around the franchise's business side, as well as the makeup of the team itself. One of the big changes we'd made was to trade Monta Ellis for Andrew Bogut. Ellis was a shooting guard who'd been one of the team's best and most popular players, and Bogut was a center who had tremendous poten-

#### **JOE LACOB**

Joe Lacob, MBA '83, is the majority owner of the Golden State Warriors basketball team. In 2010, he led a group of investors who bought the team for \$450 million. In January 2021, the sports business website Sportico calculated that the franchise was worth \$5.2 billion.

tial but was injured at the time, so he couldn't play.

Fans were frustrated.

Just a few days after that trade, during a home game, we organized a half-time ceremony to retire the jersey of Chris Mullin, who'd been a legendary player for the Warriors in the '80s and '90s. A couple of people spoke to the crowd, and then Chris spoke, and then just before they unveiled the banner with his number on it, I took the microphone. I planned to say just one or two sentences, but I couldn't even get started because the crowd began booing me for even stepping up there.

It was awful. I can't tell you how awful. I'm up there, I can't talk, the crowd is

#### LISTEN

Professor Brian Lowery and publisher Dana Canedy discuss how adding more marginalized voices to mainstream media can lead to deeper communication and policy change. Hear their episode of the *Leadership for Society: Race & Power* podcast at **stanford.io/LSR&P**.

booing, I'm on national TV, and I look over at my wife, and she's crying. I stayed up that whole night answering angry emails, something like 400 of them. And the next morning, with no sleep, I did an hour-long radio interview on one of the Bay Area's most popular sports talk shows. I said, "Look, I understand. If I was in that audience, I would've booed me too."

In the long run we were vindicated for the moves we'd made. Starting the next year, we were in the playoffs for seven years straight. We made the finals five times and won three NBA championships.

But the long-term impact of that night was huge for me, because it taught me that I'd had the wrong goal all along. This will sound strange, but I've wanted to own a sports team since I was a little kid, like nine years old. Some people want to play professional sports; I wanted to own a team. And I always imagined that I'd be popular if I did so. After that night, I decided that was not a realistic goal.

At the end of the day, the fans really care about one thing: Are you winning? So I focus on that. You do what it takes to win, even if that eats into your profits or makes you unpopular in the short term.

But the biggest thing I realized is that it's important to enjoy the process. Because that's what I enjoy: the building of a management team, the building of a business, working with people, and of course the passion for basketball itself. Things are not always going to go well, so it's crucial to love the process. If you think you're going to be popular because you're the owner of a sports team, that's not the right goal.

Looking back now, I'm actually glad that night happened. It's funny: A lot of people who were there have come up to me over the years to talk about it, and every single one has said, "You know, I wasn't one of the guys booing." Not one person has admitted to booing me.

And I say, "Well, it sure sounded like 20,000 people at the time."

— Told to Steve Hawk

#### **PANELISTS**

#### **Corporations and Money in Politics**

Voices from panelists at the virtual Conference on Corporations and Democracy, held in December 2020 and organized by Stanford GSB's Corporations and Society Initiative. Videos of the event can be found at *stanford.io/CASIvideo*.



"The obvious channels of influence that have been studied by political scientists may only be the tip of the iceberg. More and more of the money that goes into influencing elections is hard to trace because of the use of 501(c)(4)s and other associations. Since Citizens United, dark money has become much, much harder to trace." — Marianne Bertrand, University of Chicago Booth School of Business



"It's really a risk management issue.

Companies today face not only reputational risks [through their political influence] but also business risks, because people are making purchasing decisions based on their actions. They talk about climate change, and that can make great rhetoric, but when you take a look at their political spending, it undercuts the rhetoric." — Bruce Freed, president, Center for Political Accountability



"There's a theory about political hobbyism that says a lot of people who want to decrease corporate power do politics as a hobby rather than as something that requires hard work. They like tweeting about politics and things like that. But people like the Koch brothers know how to do politics. They do it at the ground level, and they train people."

— Neil Malhotra, Stanford Graduate

**School of Business** 



"Workers are crucial stakeholders for changing the behaviors of firms. Free speech has been weaponized by corporate and ideological activists to dampen the power of labor. Folks assume there's a symmetry between the effects of *Citizens United* on labor unions and companies, but it's been a very onesided battle." — Alexander Hertel-Fernandez, Columbia University School of International and Public Affairs

#### SEEN AND HEARD

#### "Paul? It's Bob Wilson. You've won the Nobel Prize."

Professor Robert Wilson to his colleague and neighbor Paul Milgrom, after ringing Milgrom's doorbell at 2 a.m. on
 Oct. 12, 2020, to tell him they'd both just been awarded the Nobel Prize in Economics. See the video at stanford.io/Nobel.

#### RECOGNITION



Darrell Duffie, the Adams Distinguished Professor of Management and Professor of Finance, was awarded the Stephen A. Ross Prize in Financial Economics.

**Keith Krehbiel**, the Edward B. Rust Professor of Political Science, received the Barbara Sinclair Legacy Award from the American Political Science Association.

**David Larcker**, the James Irvin Miller Professor of Accounting, Emeritus, was inducted into the Accounting Hall of Fame.

**Ken Singleton**, the Adams Distinguished Professor of Management, Emeritus, was elected president of the American Finance Association for 2020 and was inducted into the Society of Fellows of the Association.

**Stephanie Tully**, assistant professor of marketing, was named a Marketing Science Institute Young Scholar.

**Kuang Xu**, associate professor of operations, information & technology, received the 2020 ACM SIGMETRICS Rising Star Research Award.

Stefanos Zenios, the Investment Group of Santa Barbara Professor of Entrepreneurship and Professor of Operations, Information & Technology, was elected a fellow of INFORMS (Institute for Operations Research and the Management Sciences).

For more, go to gsb.stanford.io/magazine.

#### **BACK TO CLASS**

### Using Movies and Skits To Teach Global Finance

#### **COURSE NAME**

FINANCE 207: Corporations, Finance, and Governance in the Global Economy

#### **INSTRUCTORS**

Joshua D. Rauh Amit Seru

This course aims to give Stanford GSB students the skills and tools that they need to interact with and navigate the complex, continuously changing field of finance, and to understand the pervasive and profound influence that finance plays in companies, the economy, and society across the globe.

"Regardless of whether you're going to have a career in banking, private equity, entrepreneurship, or in government, you will be interacting with the finance world," explains co-instructor Joshua D. Rauh, the Ormond Family Professor of Finance. The ultimate goal, he notes, is to have students appreciate "the broad and deep applicability of finance" as well as learn concepts developed in finance research.

The course covers topics ranging from valuation of cash flows and control to the capital structure, payout policy, and governance of both mature and entrepreneurial firms. Other subjects include restructuring and managing of firms in financial distress, the use of public markets to obtain liquidity and multiple share classes to retain control, and governance in venture capital and private equity. It also examines the rise of activism, social responsibility, and debates about the objectives of firms, both now and in the future.

Co-instructor Amit Seru, the Steven and Roberta Denning Professor of Finance, notes that getting students to assimilate and work with that much high-level, complex finance material is a challenge, particularly in an age of shortening attention spans. For that reason, the professors designed a course that's highly interactive and, whenever possible, use engaging methods laden with humor to help students connect with the topics.

Each session, for example, begins with a *Saturday Night Live*—style cold open, in which Rauh and Seru perform a brief dialogue, which they generally write and rehearse just a few days beforehand so that they can deal with recent events. One routine centered on the valuation





BY THE NUMBERS

**Employment Report 2020** 

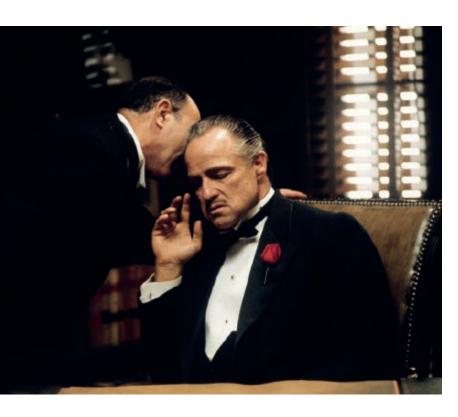
18%

of the Stanford GSB MBA Class of 2020 launched startups at graduation. **37**%

of those launching a new venture were women. 68%

of the class sought employment. \$156,000

was their median reported salary.



#### **IN CONTROL**

Quick question: How are real-world corporate clashes similar to fictional battles between Vito Corleone and his many murderous enemies?

of control during the WeWork versus SoftBank saga and its parallels with the movie *The Godfather*.

Before the pandemic, they would toss Kit Kats from an "opaque candy box" to students to illustrate the euphoric market reaction to actions (signals) such as corporate dividends. The stunt illustrated what such actions can do when information about a firm's future prospects is asymmetric

— it is known to firm managers but not available to the market.

"The cold-open format leads to more student engagement," Seru explains. "At the same time, there is clear content around a session's topic that is delivered in every skit."

Rauh and Seru have created structured course material for each session, which includes both a short "dossier" — a mini case study about a real-world financial event — and a "background note," which contains finance research and concepts useful for understanding that event.

Students are organized into teams to discuss the dossier and background material before class. In the sessions, teams receive "cold calls" from the instructors, during which they're expected to offer a prepared response, with each team member participating. The class also features guest speakers — "protagonists" in the case studies. These speakers listen to the discussions that professors have with the teams and then add their perspectives on the dossier questions being discussed in the session. — Patrick J. Kiger

#### HOW TO



#### Four Ways to Build "Exceptional Relationships"

Forging meaningful bonds in both your personal and professional life is key to success. But crafting connections with others, especially in a digital-driven world, is no easy feat. To help, David Bradford and Carole Robin - longtime teachers of Interpersonal Dynamics (aka "Touchy

Feely"), the most popular GSB elective - have written Connect: Building Exceptional Relationships with Family, Friends, and Colleagues, a book that distills many of the lessons from the course.

Not every relationship will be exceptional, but you can make deep connections with more people than you think (even if you don't seem to share much in common). It takes work though, so the first step is identifying those people in your life with whom you'd like to build a stronger bond.

Risk being yourself. A relationship can't thrive without honesty, and exposing your true nature can feel scary. So try the 15% rule: Dare to share something with a friend or colleague that pulls you slightly (say 15%) outside your comfort zone. It won't work every time, but when it does, people tend to find you more interesting and become more interested in getting to know you.

Suspend judgment long enough to allow yourself to find common ground. Too often, we dismiss someone who seems different from us - and lose out on the chance to connect. Instead of judging why another person behaves a certain way, put your energy into having an open exchange and see where it leads.

Dive in and don't give up. Sometimes - especially in the business world - you don't have endless time to nurture a relationship. That's why it's more important that you start investing in getting to know another person rather than fret you might not get it just right. And when you succeed in building a strong bond, your work's not done. Exceptional relationships require constant care and attention to yield life-changing benefits.

Read more at stanford.io/exceptional.

seekers had an offer within three months.

of them

received

a signing

bonus.

\$26,500 was their median reported signing bonus.

entered the finance industry.

went into technology.

"socially responsible" positions.

ioined

firms.

consulting work for the government.

#### Szu-chi Huang's Reproduction of a 1922 Painting

Huang is an associate professor of marketing and a PhD faculty liaison at Stanford GSB.

#### I'VE HAD THIS PAINTING

for about five years. It's a reproduction; the original, called *Winds, Upper Ausable Lake*, is by Harold Weston and is in the Phillips Collection in Washington, D.C., which is where I first saw it.

The painting portrays a lake, and in the reflection of the water, you can see the movement, which is why it's called *Winds*. The element of water resonates with me, because I grew up in Taiwan, which is an island. It's almost as if I have a piece of my hometown in my office.

But the painting also connects with my love of art, which is another part of home for me. When I was growing up, my father was manager of a small art gallery that was located in the same building as our home. I was surrounded by all sorts of paintings - from Western art to oriental, from classical to modern. We didn't have a lot of money for entertainment when I was young, so my parents would take me and my brother to see museums, and we would look through art books together. My mother teaches classical music, so art and music were the big influences for us. My brother actually took up art as a profession and became an illustrator of children's books and a photographer of LGBTQ communities in Asia.

I love art, too, but I can't draw. So instead, I worked in the advertising industry. I chose that because it includes an element of art and creativity, and also business. That eventually led to me getting a master's degree in advertising and a PhD in marketing.

To me, marketing also is a kind of art. It reflects how our society evolves and communicates, and how it connects people. The packaging of a product, the advertising, the storefront—all tell a story. It's more like an interactive and dynamic art exhibit than a painting. But I think marketing is the most artistic aspect of business

I love marketing, and I'm glad I picked it as my career, but art still influences me. Whenever I travel to an academic conference, I always make time to visit whatever museums are in that city. Art has the ability to transport me to a different place. It helps me to think outside the box, to imagine, and to

conceptualize new theories.

Recently I've been working on a collaboration with UNICEF on how images that are digitally altered can affect how children think about beauty. These are mostly images from advertising, or ones that social media influencers post about themselves. Those altered images, designed to shape consumers' behaviors, are really the opposite of what artists are trying to do when they paint. When we are moved by a painting, we feel a real connection with the artist and experience their "truth." I hope my interest in art gives me a unique perspective to understand both the positive and negative influences of art in marketing.

- Told to Patrick J. Kiger





#### PEER-TO-PEER

#### How Do I Foster a Racially Equitable Firm?

In which alumni with questions learn from alumni with answers.

A fter George Floyd was killed by a Minneapolis police officer, members of the Stanford GSB Class of 1994 teamed up to create an online tool called the Racial Equity Playbook. The playbook offers tips on how to advance racial justice within organizations and how to evaluate its progress. "It is important for leaders not to just respond to external pressure, but to institute change because they believe it is morally the right thing to do," says Maria Pasos-Nuñez, MBA '94 and associate director of international career development at Stanford GSB. Her MBA '94 classmate Jenny Silva explains:

Commitment: It's important that top leadership is committed to and vocal about the cause. If you don't already have diverse leadership, it's especially important that the board and the executive team are loud about this. They need to show that they care and that they truly want to see improvements. That may seem obvious, but it's essential.

Accountability: Progress needs to be measured and people need to know that the results matter. The organization actually needs to be watching. To drive change, many organizations ultimately find it necessary to tie promotions and compensation to results on diversity and inclusion. If you say it's important but continue to promote people who only hire and promote white men, everybody will see that nobody in the organization really cares.

Action: First, add diversity to your hiring process. Broaden your net. Recruit from places other than the top schools. And de-emphasize referrals. If you have an all-white organization and you depend on referrals, you're never going to

diversify. Make sure you look at the job's criteria for success, rather than just at an applicant's credentials.

Second, build a culture of inclusion that accommodates people of all backgrounds and allows everyone to be their best self at work. Survey your employees, but don't look at average outcomes. Look instead at the results for the different demographic groups. If white men and black women are having similar experiences, you're probably doing pretty well on inclusion, but that rarely happens. If their experiences are different, analyze those differences to figure out where you need to make cultural changes.

Third, pay everyone fairly. Any organization really committed to this has to look at its executive team and its board. Look at upper-level vacancies carefully. If you have to, expand the executive team to make it more diverse. At the end of the day, if you don't see that as important to achieve, you really have to ask yourself, "How committed to this are you?" — *Corey Binns* 

Find the Racial Equity Playbook online at racial equity playbook.org.



#### CAREER ADVICE

#### Visualize the Future You Want

After the tumult of 2020, career uncertainty remains a concern for many people. Laura Bunch, a coach and

program facilitator with Stanford GSB's Career Management Center, says that times of uncertainty are precisely when you should work to envision a new future. "Research shows that visualizing your ideal future is a way to prepare and train your brain to get there," Bunch says. "The goal is to allow yourself to be creative and unrestrained. That effort can focus on a particular dream or a full picture of what your future life looks like." Use the "WOOP" technique to visualize yourself overcoming obstacles and staying focused on your journey — even when the path seems blurry.

#### $N_{\mathsf{Wish}}$

**HOW CAN** 

**WE HELP?** 

question you'd

like answered.

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If you have

a business

email us at

I want to have a job I love.

#### Outcome Desired

I seek fulfillment and satisfaction.

#### **Obstacle**

Too often I avoid networking for fear of not being qualified enough

#### D <sub>Plai</sub>

I will contact three new people a week and, by the end of the year, apply to at least one job that is outside my comfort zone. If I start to think, "I'm not good enough," I will take three deep breaths, stay present, and remember my wish.

#### Think Small to Go Big

Once you've spent time envisioning your future, focus on micro-actions. If the goal is to run two miles a day, begin by walking for 10 minutes at a time. Then congratulate yourself. "If you don't take action, everything remains theoretical," Bunch says. "But if you move into action and have self-compassion, who knows what will happen? You're moving out of reactivity and inertia, and taking action on goals that are aligned with what matters to you. And that's what it's all about."

- Beth Jensen

BRIEFINGS STANFORD BUSINESS

MAKER

## Roberto-Venn School of Luthiery

William Eaton, MBA '75

MUSIC HAS BEEN A SOUNDTRACK to my life. I grew up playing folk music, and I played in a rock 'n' roll band all through high school. But I never considered it as a career. I come from a family of bankers — my dad, grandfather, uncles, cousins — so I always thought I would follow them. After I got my undergraduate degree from Arizona State University, I started researching business schools and was fortunate to be accepted to Stanford GSB.

Stanford was an invaluable experience. My classmates and the faculty were an unending inspiration to me. It seemed that we were all in a wonderful stage of dreaming. What could our lives become?

The GSB curriculum was intense and demanding. In the evenings, I would relax by playing my guitar, just to hear the sound of the strings. The guitar was a handmade instrument I had built as an apprentice to luthier John Roberts while at ASU.

I remember having a dream about building a 12-string guitar. A few days later, in the *New Enterprise Management* course I was taking, we were given an assignment to write a business plan. A three-week holiday break was approaching, and I decided to go to Arizona to build the 12-string and to gather information from John and Bob Venn, who had become John's partner, about the possibility of turning their apprenticeship program into a formal guitar-making school.

That trip back to the desert started me on a life's journey. I handed in the completed business plan to our instructor, Steven Brandt, who gave me valuable, critical feedback. Most important, he and other professors encouraged me. They said, "When will you have the opportunity again to do this?" That really hit home. I felt deep in myself that this was something I wanted to do.

John and Bob were excited about the plan, so after graduation I returned to Arizona to start the Roberto-Venn School of Luthiery. That was in 1975, and I've been here making stringed instruments, and teaching people how to make guitars, ever since.

It's funny: Before he became a guitar maker, John had dreams of building a yacht from tropical hardwoods he'd collected while working for a lumber company in Nicaragua. I always think of his dream as a metaphor for our school. It's been a vessel, and that vessel has carried more than 2,500 graduates who've learned how to craft guitars and build careers and fulfill their dreams.

- Told to Steve Goldbloom



William Eaton, MBA '75, is the cofounder and current director of the Roberto-Venn School of Luthiery in Phoenix, Arizona.



SPRING 2021 BRIEFINGS



## VANCY ROTHSTEIN

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# Insights

#### ORGANIZATIONAL BEHAVIOR

# Want to Learn How Things Really Work at Your New Job? Talk to the People at the Bottom

New research shows that people of all ranks look to low-level co-workers for information about organizational social norms.

BY SACHIN WAIKAR

hat are typical work hours here?
Do teammates do things
together outside work?
If I have an idea for changing something, what's the best way to raise it?

Those are questions a new member of any organizational team might have.

How newcomers get those questions answered has been a topic of interest to Dale T. Miller, Stanford Graduate School of Business professor of organizational behavior; Jennifer Dannals, who received her PhD from Stanford GSB in 2018 and is now an assistant professor at the Tuck School of Business at Dartmouth; and Emily Reit, a current Stanford GSB doctoral student.

"A common assumption is that people just copy the behavior of the highest-ranking leaders in a group, rather than paying attention to anyone else," Dannals says. "That's always rubbed me the wrong way, partly because I hadn't done

that as a PhD student within the academic hierarchy. I believed lower-ranked people matter more in our perceptions of social norms."

"Clearly, leaders have many avenues of influence," Miller says. "But in this case, we thought lower-ranking people might have an advantage."

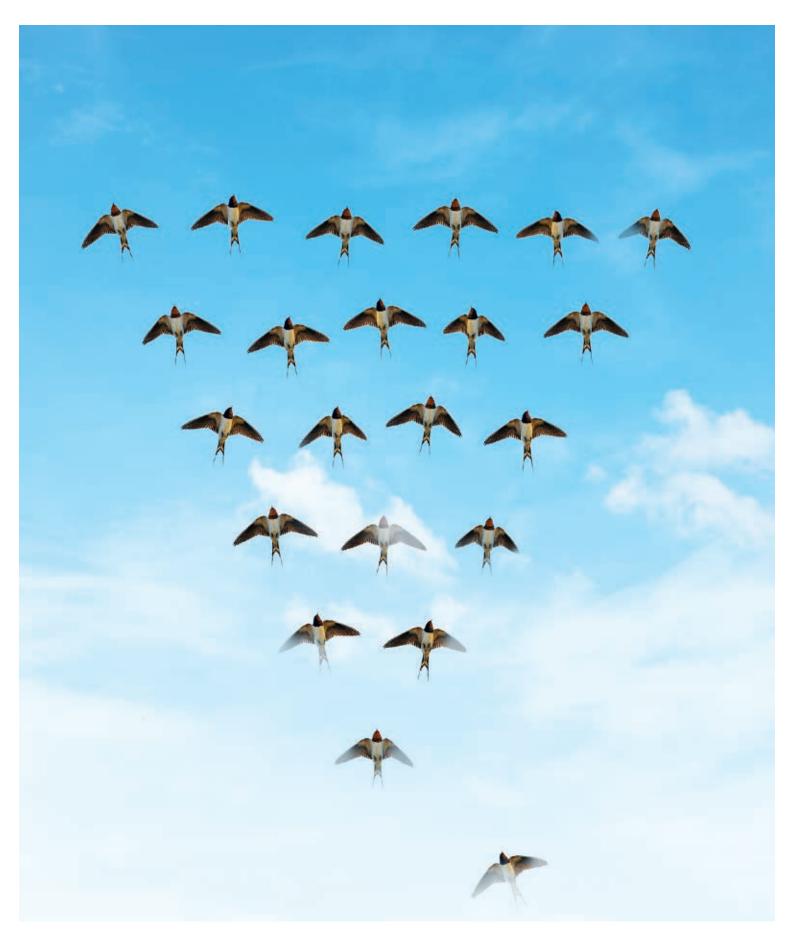
Dannals, Miller, and Reit developed a series of studies to understand where people in a group look for information on behavioral norms. Their research, which informs our understanding of broader organizational culture, is important because firms use culture to motivate employees and align them with strategy. Moreover, culture can be tied both to positive behavior and to the not-so-positive variety, such as unethical actions.

"The social norms we considered here are like the building blocks, or 'micro-processes,' of organizational culture," Dannals says.



**DALE 1. MILLER** is the Class of 1968 / Ed Zschau Professor of Organizational Behavior at Stanford GSB.

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As hypothesized, the researchers found that individuals — at both higher and lower ranks — seek information from lower-level peers, because they see these individuals as more attentive to social norms.

#### **Who's Your Reference Group?**

The researchers studied processes around group social norms from multiple angles.

Importantly, they first had to create definitions of social groups and rank. Here, they decided to focus on a given individual's "reference group," or the people they saw as roughly similar to themselves within the broader group.

"When I talk about this research, people often imagine a 200-person corporation, with assistants and custodial staff as the lowest level," Dannals says. "But it's about the people more at your general level. So if you're in top management of a business, your reference group would be the rest of the top team. If you're on the custodial staff, then it's the rest of that staff. Not the entire corporate hierarchy."

Dannals herself, as a new professor, says her reference group would most likely be other assistant professors or nontenured faculty within her area.

The researchers also had to think about how people gain norm-related information. For example, they considered that people new to an organization or group may approach others explicitly for advice on behavioral norms, or they may rely primarily on observations of their coworkers. "Either way, they're trying to get a sense of what's appropriate," Dannals says.

#### **Looking to Lower-Level Peers**

However we define our reference groups and seek information within them, the researchers hypothesized that we look to our lowest-level peers for behavioral cues — even when we ourselves are higher-ranking.

That's largely because lower-level people are "subject to situational pressures in a way that higher-ranking members aren't," Dannals says. "Higher-level people may be able to get away with doing whatever, so they may pay less attention to norms."

The team used multiple related studies to determine whether, and why, group members go to lower-level peers to get enlightened about cultural norms. In one, the researchers asked employees from a midsize West Coast advertising firm whom they'd recommend in their reference group for information about social norms. A second study asked participants to imagine themselves as high-ranking lab members and then requested they choose an adviser from individuals at higher and lower ranks, with the belief they'd actually be working with that person. A third placed participants in the role of a new marketing team member and asked which colleagues they would trust most for advice on organizational culture and why.

#### The Challenge of Cultural Change

The findings converged around several key insights.

First, people do generally seek information on behavioral norms from lower-ranked peers within their reference group, as predicted. Moreover, individuals do this primarily because they perceive lower-level people as more attentive to social norms than others might be, rather than because they see themselves as more similar to these information sources or think lower-level people will be more honest.

It's important to note that while the current research highlights lower-level group members as go-to information sources, it doesn't necessarily mean they are the *most accurate* sources. "We've only looked at who people in general think has the best information about social norms," Dannals says. "We're going to follow up this research with a project assessing who actually has the best perception; that can be a trickier question to answer."

The results have multiple implications. For one, as Dannals notes, "It's encouraging to know that people at lower ranks can have more of an impact on organizational culture in some cases than leadership; it suggests the power of a grassroots approach."

At the same time, however, the fact that the keenest insight about an organization's culture is seen as residing mostly in lower-level people may suggest a challenge for leadership. "It's going to be difficult for leaders to change cultures—even toxic ones—alone," Dannals says. "That's because their behaviors or statements will be measured against those of lower-ranking people, who might be thinking that it's cheap talk. In general, the behavior of lower-level people in organizations may be stickier than leaders might want."

In line with this, Miller encourages leaders to look at lower-ranked colleagues' behaviors to identify and modify group norms: "They may be overweighting the behavior of fellow leaders. Getting lower-level people on board may buy them more influence than they realize."

Still, that's not to say all culturerelated power rests in the lower ranks.

"This is one organizational lever that can be pulled to change culture," Dannals says. "Others are things like whom you hire, fire, reward, and promote. Those send big messages, so you need to think about all the weights on the scale and how they come together to affect culture." GSB

"Clearly, leaders have many avenues of influence. But in this case, we thought lower-ranking people might have an advantage." SPRING 2021 INSIGHTS



#### FINANCE

## Zombies on the Rise

A decade of binge-borrowing has turned many corporations into the walking dead, Stanford finance experts say.

BY CLAUDIA ROBLES-GARCIA AND MIKE HARMON

hen the COVID-19 pandemic slammed the United States into a deep recession, it also exposed an underlying financial vulnerability: record levels of often risky corporate debt.

In the decade since the Great Financial Crisis ended, corporations have added trillions of dollars of such debt — a significant portion of which is in lower-rated bonds and loans.

Worldwide, corporations now shoulder far more debt than they did at the onset of the last crisis: \$74 trillion at the end of 2019, which is 23% more than in 2008. We estimate that highly leveraged companies — those with high debt levels — have about \$6 trillion of debt on their books. Many of these companies have become "zombies," with debt so cumbersome that it impedes their ability to contribute to employment and investment growth in the economy.

More ominous yet, the overall quality of that debt was much lower in the run-up to the pandemic than it was going into the last big downturn. In March 2020, a record 66% of U.S. leveraged loans — those related to highly indebted borrowers — were rated single B or lower, which is the lowest-quality segment. In 2008, that share was only 36%.

Below the surface, other red flags signal even more trouble. As debt investors have chased higher yields and accepted more risk, they have increasingly surrendered the contractual authority they once had to impose difficult but necessary changes on ailing companies.

In previous downturns, the overwhelming majority of leveraged loans had robust covenants — legal provisions that delivered an "early warning" to lenders for companies performing below





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expectations. These protections also prevented a company from borrowing beyond the comfort level of its lenders. Violations of these provisions would trigger a default, allowing lenders to force changes, including a meaningful reduction of debt on the balance sheet. Today, however, more than 80% of leveraged loans are "covenant-lite," meaning that they lack most of these protections. As a result, when the pandemic created huge liquidity needs at many leveraged companies, they satisfied those needs with even more debt.

#### **Real-Life Horror Stories**

Serta Simmons Bedding LLC, which was on the verge of insolvency, raised \$200 million in a controversial deal this summer. The agreement effectively gave the company's newest lenders higher seniority for repayment than the company's existing secured creditors. The deal infuriated some of those creditors, but their attempts to contest it have not borne fruit. The permissive covenants on Serta's earlier loans left them powerless. In prior cycles, more rigid covenants would have forced a company facing this scenario into a bankruptcy or other restructuring that reduced its debt load.

Serta is hardly alone. The issuance of new high-yield bonds is on track to set a new record in 2020. On top of that, according to data from Moody's, highly leveraged companies have drawn down about \$310 billion from their revolving lines of credit. Whenever possible, in other words, deeply indebted companies are trying to muscle through their troubles by borrowing more.

That's a big reason why the pace of bankruptcies during the pandemic recession remains surprisingly modest. The Bloomberg Corporate Bankruptcy Index, which measures the occurrence and severity of large U.S. bankruptcies, has more than doubled since February.

Even so, however, the bankruptcy index is nowhere near as high as it was during the last financial crisis. The trend now is to "amend and extend" troubled debt agreements rather than to grapple with reality.

#### **Enablers on All Sides**

To be sure, the modest number of bank-ruptcies stems in part from aggressive and appropriate measures by the Federal Reserve and Congress to get the economy through the pandemic. The Fed and the U.S. Treasury have committed trillions of dollars to corporate rescue efforts. These include direct loans to leveraged companies under the Main Street Lending Program as well as purchases of so-called "fallen angels" — bonds that have been demoted from investment-grade to junk status. Meanwhile, the Fed appears determined to keep interest rates extremely low for at least some time to come.

There is no free lunch, however. Over time, those policies send a signal that companies and investors alike can expect to be rescued and can thus pursue risky behavior without consequences. Indeed, some companies that were reckless before the pandemic are now free-riding off the Fed's programs.

Astonishingly, institutional debt investors are increasingly complicit in keeping troubled corporations out of bankruptcy. About 60% of syndicated loans in the United States are owned by investment vehicles known as collateralized loan obligations, or CLOs. Those vehicles have strong contractual and structural incentives to avoid debt-for-equity swaps, which offer a way of reducing a troubled company's debt. Other debt investors, such as debt mutual funds and banks, have similar incentives.

The upshot is that participants on all sides are alarmingly aligned in favor of maintaining higher debt and risk. Private equity firms are on the prowl to finance acquisitions primarily with debt, and public companies are levering up to finance stock buybacks, acquisitions, and other efforts to boost share prices. Lenders, meanwhile, are chasing higher yields by taking on more risk.

Despite the pandemic, the recession, and many other warning signs, debt investors remain surprisingly sanguine. The S&P/LSTA price index for U.S. leverage loans was down by only 1% for the year as of October 2020. If that complacency is misplaced, investors will be in for a rude awakening.

#### The Long-Term Economic Risk

All of this sets the stage for an alarming surge and perpetuation of the aforementioned zombie corporations. Instead of reducing debt and de-leveraging, as they should be, the zombies are re-leveraging.

Our broader concern is about the long-run economic consequences of misallocating capital. As disruptive as bankruptcy and other major debt restructurings may be, they are key to freeing over-leveraged companies from their zombie persona and deploying capital into more productive uses.

When credit markets are functioning normally, they do a reasonably good job of assessing which businesses should be kept alive and which ones truly don't have a future. So long as the Fed and other central banks maintain this "protect at all costs" approach, however, the credit markets won't play that role.

If vast numbers of zombie companies are allowed to lumber along for years, their deadweight costs will most certainly have a negative impact on economic growth. We hope that in the future, government policies and debt investors will facilitate financial restructuring in which debt levels are unsustainable, rather than encourage more borrowing. GSB

"Deeply indebted companies are trying to muscle through their troubles by borrowing more." SPRING 2021 INSIGHTS

#### SOCIOLOGY

## The Activist's Dilemma

Extreme actions draw attention to a cause but erode public support — and many protesters fail to see the link.

BY NADRA NITTLE

hutting down traffic. Vandalizing property. Threatening or engaging in violence.

While these forms of extreme protest might undercut public support for a movement, they're remarkably effective at raising awareness about social causes and placing pressure on the institutions that can act on them.

So, what should activists do: Refrain from highly disruptive protest to keep the public on their side, or risk losing popular support by protesting in the extreme fashion likely to grab the attention of those in power?

In a nutshell, that's the "activist's dilemma," the subject of a new paper by Robb Willer, a professor of organizational behavior (by courtesy) at Stanford Graduate School of Business.

Willer and two coauthors (professor Matthew Feinberg and doctoral student Chloe Kovacheff of the University of Toronto's Rotman School of Management) investigated the widespread claim that extreme protest actions — those viewed as "harmful to others, highly disruptive, or both" — erode public support for movements. Across six experiments focused on such movements as animal rights, anti-abortion, and anti-Donald



Trump to test this hypothesis, they found that extreme forms of protest lead to a drop in social identification with the various causes. This is of concern to activists, because movements that lack popular support are unlikely to grow and could even face public opposition.

"The takeaway is not a simple one for activists," Willer says. "There's a reason we titled it 'The Activist's Dilemma.' Activists want to be relevant and noticed and adopt tactics toward that end, but at the same time, they want to build support in the general public — and it's just very hard to do both of those things at once."

#### **Why Extreme Activism Alienates**

How the public perceives protest behaviors largely stems from a common sense of right and wrong, and extreme actions such as threats of violence, major disrup-

tions, or inflammatory rhetoric tend to be viewed as immoral. Once observers of a movement form this perception, they're unlikely to feel the compassion needed to identify with a cause, and activists who behave in ways thought to violate the rights of others run the risk of permanently alienating the public.

When protest actions are deemed immoral, they have the potential to prompt observers to reject a movement's entire platform. For example, the researchers contend that activists who block highway traffic to raise awareness about the environment might lose public support for the movement — and provoke the public to care less about conservation efforts generally. That said, if the cause has long been the subject of moral debate, an extreme protest action is unlikely to change public opinion.



**ROBB WILLER** is a professor of organizational behavior (by courtesy) at Stanford GSB.

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The legalization of abortion is an issue that the nation has debated for decades, and one that political conservatives generally oppose. Yet when conservative participants in Willer's study read about anti-abortion activists engaging in behaviors they perceived to be extreme, such as blocking the entrance of an abortion clinic, their support for the movement waned.

A similar pattern played out in an experiment involving anti-Trump protesters, with politically liberal study participants reporting a drop in support for demonstrators who caused a traffic jam by blocking carloads of Trump supporters from reaching one of his campaign events.

"We were very surprised by how consistent these effects were across different groups of Americans," Willer says. "You would think that people would show a great deal of deference to activist groups that are representing their political or demographic group and not be negatively influenced by their extreme tactics, but that's not what we found. People still prefer those groups not to use extreme tactics."

In some circumstances, extreme protest behaviors, such as activists using force to topple a totalitarian regime, might foster public support. The research findings also suggest that activists engaging in extreme protest should make efforts to explain the rationale behind that decision. For instance, holding up signs that communicate the urgency of their cause could offset the idea that they're blocking traffic because they're "immoral."

But protesters, Willer and his coauthors found, aren't necessarily familiar with the activist's dilemma.

#### Awareness of the Dilemma

Do activists recognize that extreme protest behaviors might garner headlines about their cause but diminish public support for it? Willer, Feinberg, and Kovacheff set out to answer that question using an exploratory pilot study for

which they recruited 121 activists from a pool of 2,000 applicants.

All but seven of the participants indicated on a survey that they were at least "somewhat willing" to engage in extreme protest actions. Further questioning revealed that these activists believed that extreme actions would increase popular support for their causes rather than decrease such support, suggesting they knew little about the activist's dilemma.

On Jan. 6, protesters stormed the U.S. Capitol, seemingly convinced that their decision to trespass on federal property and rifle through the belongings of government officials presented them as brave patriots fighting against a corrupt political system. But, as Willer points out, the public perceived them very differently.

"I think this research captures well the storming of the Capitol," he says. "This was an act of violent and disruptive protest that certainly grabbed headlines but was met with overwhelming condemnation. While the riot may be effective for emboldening the base of activists already involved or drawing some very fringe individuals to join the cause, it was utterly ineffective in persuading the mass public to embrace the rioters' grievances."

Afterward, some Republicans made a concerted effort to distance themselves from these protesters, who claimed that the 2020 presidential race had been stolen from Trump. To distinguish themselves from the rioters, a group of Republican lawmakers changed their position on the integrity of the presidential election and voted to certify the results.

#### The Capitol Siege

So why didn't the Capitol protesters predict what the response to their siege would be? Highly invested in their movements, activists are prone to assuming

that the general public feels nearly as strongly about a particular cause as they do—or they have difficulty considering the viewpoint of people who don't know or care about the issue. But the researchers assert that their findings strongly suggest that resolving the activist's dilemma could be the key to movement success.

To avoid alienating the public, activists might rely on moderate protest tactics. Alternatively, if a movement has just started to take off, activists could initially use extreme behaviors to draw attention to their cause and then revert back to modest methods to maintain public support. Still, the researchers acknowledge that there certainly may be exceptions to the rule. They point out that the American, Cuban, Russian, and French revolutions all won broad popular support, despite the fact that the individuals who spearheaded these movements used extreme actions to resist.

"The truth is that this space of how social movements succeed or fail in pushing their agenda in society is an extremely complex dynamic that we don't fully understand," Willer says. "To give a complete theory of this, you'd need to account for these kinds of exceptions."

In a contemporary democracy such as the United States, where the civil rights movement remains influential, nonviolent methods of protest are arguably received the best. But nonviolent doesn't mean non-extreme. The civil rights activists of the 1960s marched on roads and bridges and disobeyed Jim Crow laws until the police arrived to arrest them. In their day, they were highly disruptive but still managed to win popular support. A modern movement could do the same.

"You really need to think about what activists are protesting against," Willer says. "If they're protesting against a repressive dictatorship, for example, they might not really lose that moral standing because they're seen as striking back against a very immoral agent." GSB

"How social movements succeed or fail in pushing their agenda in society is an extremely complex dynamic that we don't fully understand." SPRING 2021 INSIGHTS



#### ECONOMICS

#### Home Foreclosures Can Have Devastating, Long-Term Impacts

A new study finds that the repercussions of home loss extend to crime, divorce, and even the quality of schools.

BY KRYSTEN CRAWFORD

s the pandemic-ravaged U.S. economy braces for a likely wave of housing foreclosures, a new study shows that losing a home can have painful ramifications that extend far beyond the immediate financial damage.

In a new working paper, Stanford economist Rebecca Diamond finds that foreclosures make homeowners less likely to buy another house in subsequent years. Their living arrangements become less secure, and they default on other debts more often.

Diamond is an associate professor at Stanford GSB and a senior fellow at the Stanford Institute for Economic Policy Research. She and her coauthors — Rose Tan, a Stanford University PhD student, and Adam Guren of Boston University — also identify a subset of homeowners who suffer the most: mortgage holders who are on the margin.

These are the homeowners who are behind on their payments but could likely make good on their loans if given a break



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through debt restructuring or government support. These marginal homeowners, who exist at all income levels, are far more likely to divorce and move to lower-quality neighborhoods as a result of foreclosure.

Diamond's findings, recently released as a working paper by the National Bureau of Economic Research, shed new light on what economists know about foreclosure's impacts. They also come amid a brewing housing crisis due to the economic repercussions of COVID-19, with many housing experts predicting a rise in residential foreclosures that could pressure lawmakers to intervene.

"These results are highly relevant in today's climate," Diamond says. "There are huge, long-term harms of foreclosure that have not been on policymakers' radars or, until now, understood from an academic perspective."

In her study, Diamond also looked at how foreclosure affects landlords and their tenants. She found that landlords take a monetary hit that is similar to homeowners' but avoid the added pain of having to leave their primary residence. For renters, the disruptions are limited. While they are often evicted, that inconvenience tends to be short-lived, and they avoid any long-term consequences.

"What's particularly interesting is that landlords just get the financial shock and renters just get the eviction shock, but homeowners get both shocks and the effects are far more severe," Diamond says. "It's the combination of the financial hit and eviction that can devastate homeowners."

#### **Building on Prior Research**

Media reports often detail the social ramifications of home foreclosures, but in the past, economists and regulators have looked only at bottom-line costs, according to Diamond.

A 2010 report by the U.S. Department of Housing and Urban Development found that the cost of foreclosures during

the Great Recession averaged \$51,000: About \$41,000 of that accounted for bank losses and drops in neighboring home values. Meanwhile, the homeowners going into foreclosure shouldered the other \$10,000 worth of the cost.

Previous studies have tracked housing foreclosures by comparing owners whose lenders moved to seize their homes with owners who stayed current on their mortgage payments. Credit reports, however, allow only for foreclosure analyses and do not reveal much about longer-term impacts, Diamond says.

To overcome these drawbacks, Diamond, Tan, and Guren built a large dataset around foreclosure filings recorded in Chicago's Cook County between 2005 and 2016. (Illinois requires foreclosures to go through its courts.)

Next, the researchers linked other key data sources to the filings, including records on bankruptcy, crime, divorce, individual address histories, credit scores, incomes by zip code, and school test scores.

The team then used two methods for analyzing the data. One approach allowed them to measure the average financial and nonfinancial effects of foreclosure on all homeowners over time. The other enabled them to look at the subset of homeowners — about 7% of all foreclosure cases studied — who were on the cusp of foreclosure versus debt restructuring. In other words, they didn't face a severe hardship that would make it impossible for them to make good on their mortgages.

This second approach was especially significant. Because Cook County randomly assigns foreclosure cases to judges, the outcomes for marginal cases vary depending on the judge. This meant Diamond could match and then track home-

"There are huge, long-term harms of foreclosure that have not been on policymakers' radars or, until now, understood from an academic perspective." owners with similar characteristics but different outcomes, based on how lenient or strict their designated judge was.

"That's as close as we can get to an experiment that is naturally occurring in the data," she says.

#### The Need for New Policies

Marginal homeowners who went through foreclosure, she found, had the most to lose. They typically lived in higher-income neighborhoods and had larger mortgages. They were also twice as likely to be divorced after five years compared with owners whose homes ultimately were not foreclosed on. And they tended to relocate to much poorer-quality neighborhoods, based on zip code incomes and school test scores.

Diamond found that the differences in neighborhood quality between foreclosed owners and their non-foreclosed peers widened over time. "For marginal homeowners, the negative effects compared to average homeowners were huge," she says.

But average homeowners and landlords did not escape unscathed. Both groups experienced significant financial distress in terms of lost assets and delinquent payments on other forms of debt. Not all homeowners who suffered foreclosure were forced to downsize, but they were significantly less likely to own their future home. Landlords, meanwhile, typically stayed in their primary residence but had higher rates of DUI convictions post-foreclosure.

Diamond says her findings suggest the need for a different cost-benefit analysis by policymakers when considering programs for helping underwater homeowners. This includes designing programs with marginal homeowners — and the additional risks they face — in mind.

"As with any government policy, only a share of people who are eligible for a benefit ever try to take it up," Diamond says. "My guess is that the people who would take up an offer of help would be the most to gain." GSB

#### ACCOUNTING

#### Executive Bonuses Might Work Better Than You Think

Cash and equity incentives promote individual and collective performance benefits, new research finds.

BY SACHIN WAIKAR

xecutive compensation continues to be large and, in many cases, controversial.

But do the bonus packages offered to top corporate managers work as intended — and if so, how?

That's a question of interest to John Kepler, an assistant professor of accounting at Stanford Graduate School of Business. "I've always been interested in the costs and benefits of different incentive schemes and how these motivate people to take different actions," Kepler says. "For example, how well does a compensation package align managers to shareholder interests? It's an economically and practically important area to research."

In two recent studies, Kepler and colleagues studied key dimensions of bonuses. First, research that Kepler did with Wayne Guay at the Wharton School and David Tsui at USC Marshall School of Business found that cash bonuses — long regarded as less motivating than equity-

based awards — have a much larger effect on individual and collective incentives than previous studies suggest.

Second, a collaboration with Stanford GSB associate professor of accounting Brandon Gipper, Wharton's Matthew Bloomfield, and Tsui revealed that bonuses can be used to shield top managers from legacy costs incurred before their arrival, encouraging them to make strategic investments in growth and other areas without fear of monetary penalty.

#### **Cash Bonuses Work**

When it comes to traditional thinking on executive bonuses, cash hasn't been king.

The conventional wisdom, according to Kepler, is that equity-based rewards are the holy grail of compensation. "Boards typically load up executives with equity," he says, "and then all of a sudden they've got incentives to act in shareholders' best interests." It makes sense, given that ownership of equity makes the executives





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shareholders who benefit from strong business performance as their stock holdings rise in value.

But what about the cash bonuses included in the vast majority of compensation plans?

Some existing research has suggested that cash bonuses "don't really have much bite," as Kepler notes. But their conclusions — that bonuses don't serve to enhance performance beyond incentives provided by equity — may have been flawed. "The problem is that past papers had lots of errors in how they measured whether cash bonuses truly provided incentives," Kepler says. "And boards spend a lot of time on compensation design, so it's important to know whether and how these bonuses work."

Consequently, Kepler studied executive bonus contracts in a sample drawn from the 750 largest public U.S. firms (S&P 750) between 2006 and 2014, including the performance measures (such as earnings) and goals involved in awards. The researchers also collected data on sample firms' actual performance, to compare with the bonus-related targets.

In contrast to earlier work, this research found that bonus plans have significant impact on executives' incentives to boost corporate performance. "We find the bonuses are actually providing an order of magnitude more incentives than previous studies suggest for a lot of these top executives, in terms of creating shareholder value," Kepler says. "Even for some CEOs of top public companies, especially early in the executive's tenure, they provide meaningful incentives." His study found that CEOs receive a median bonus of about \$12,000 per \$1 million of net income for the firm, a much larger amount than previous studies found.

The research also found that bonus plans ultimately facilitate better cooperation across top management teams, because they hold senior executives collectively responsible for key performance measures and promote "mutual monitoring" and other collaborative behavior among team members.

"The analogy we've used is that these incentives get a team of executives at a company all rowing in the same direction," Kepler says. "So bonuses are especially valuable early in senior executives' careers and help get management teams focused on the right goals."

#### **Bonuses and Cost-Shielding**

A second study built on those findings.

"Bonus plans are pretty ubiquitous," Kepler says, pointing to his original research. "But academically it's still an open question about the types of problems they solve."

Specifically, he and his collaborators observed that many executive bonus structures don't use a business's bottom-line net income to gauge performance. Instead, they use figures higher up on the income statement, such as earnings before interest, taxes, depreciation, and amortization (EBITDA) — or even sales.

"We developed some predictions about why that might be the case," Kepler says. To test their predictions, the researchers studied executive compensation contracts from over 1,400 publicly traded firms between 2006 and 2017, with a focus on performance measures used for bonus compensation.

They found that tying bonus-related performance to non-bottom-line financials largely helped address issues related to timing: that is, the time lag between when an executive makes an investment in the business's future and when that investment pays off. If there's a timing mismatch, boards will sometimes disregard costs of certain investments when calculating bonuses — as a way to encourage investments in projects worth pursuing, especially the kind that are

designed to promote long-term growth.

"They don't want to penalize executives for costs incurred today that might not yield benefits until later on," Kepler says.

The logic is similar to that behind the grace period observers give new coaches of major sports teams when they're recruiting talented young players. It might take a year or more for talented draft picks to reveal their true worth, at which point the coach should be held accountable for those earlier choices.

Kepler found that new CEOs, especially those hired from outside a business, are most likely to be shielded by the board—through a bonus-plan structure—from the impact of large costs already in place when they arrive. "The new executive didn't have any say in the legacy costs of the prior management team," Kepler says. "So boards take that into account in compensation."

In line with this, the study found the use of EBITDA for bonus determination declines by about 50% over a 10-year tenure, meaning less cost-shielding of top executives over time.

#### **Context Matters**

Overall, Kepler's findings point to the importance of context for designing executive bonus systems.

"Boards or consultants often ask, 'What's best practice for compensation plans?'" he says. "I tell them they really need to understand the challenges a company is facing at a certain point in time for incentive design."

A new top executive might need to be shielded from large legacy costs through a bonus tied to revenue growth, for example. Or a management team facing a large strategic challenge — like growth during a global pandemic — might be incentivized by cash bonuses to collaborate more effectively.

"When it comes to executive compensation, including bonus plans," Kepler says, "there's no one-size-fits-all solution." GSB

"Boards spend a lot of time on compensation design, so it's important to know whether and how these bonuses work."









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FEATURES STANFORD BUSINESS

# "We Bring Sta

Since it launched in 2013. Stanford Seed has enlisted alumni, faculty, students, and staff to help hundreds of companies in emerging economies expand their businesses all with the goal of creating jobs and lifting people out of poverty. This is the story of two of those enterprises.

BY STEVE HAWK



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#### MR. MACADAMIA

"We may never beat China or America on making motor vehicles," says Frank Omondi, CEO of Kenya-based Ten Senses Africa, which processes and exports nuts grown by local farmers. "But we can beat them producing food and macadamias."

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n paper and on the ground, the two businesses appear to have little in common.

One is called Ten Senses Africa. It buys, processes, and exports nuts grown by farmers in Kenya.

The other is called Zifo RnD Solutions. It's based in India and provides complex R&D consulting services to science-driven firms worldwide.

There are a few areas, however, in which the two firms overlap. Both are in emerging economies. Both have much potential for growth. Both are run by leaders hungry for advice that will help them realize that potential. And in pursuit of that advice, the leaders of both businesses came to the same place.

Ten Senses and Zifo are among the 800 companies that have received guidance from the Stanford Institute for Innovation in Developing Economies, better known as Seed, since it launched in 2013. Catalyzed by a gift from Bob King, MBA '60, and his wife, Dottie, and since supported by many donors from the Stanford University and GSB communities, Seed enlists faculty, alumni, and student volunteers to provide "transformational" training to entrepreneurs in emerging countries.

The institute's ultimate goal is to help small and medium-size firms grow into big firms, thus creating jobs, fueling local economies, and — most important — lifting people out of poverty.

"Taking a company from 50 or 100 employees up to 1,000 employees requires a very specific skill set," says Stanford GSB professor Jesper B. Sørensen, who serves as Seed's faculty director. "We focus on helping leaders work through the challenges of doing that."

"Our value proposition," says Executive Director Darius Teter, "is that we bring Stanford to you."

The list of recipients is long and diverse. A metal fabricator in Ghana. A mobile banking app in Côte d'Ivoire. A dry cleaner in Nigeria. An engineering firm in Botswana. A juice business in Sierra Leone. A pharmaceutical chain in Uganda.

A high-tech consultancy in India. A nut producer in Kenya.

**WHEN FRANK OMONDI,** the CEO of Ten Senses, first heard about Seed in 2017, via Twitter, he considered it a godsend. At the time, he faced a dilemma. He knew he needed to become a better businessman — his training is in wildlife biology — but he couldn't afford to abandon his nut company for two years to get an MBA.



Ten Senses' value proposition is easily explained: "We work with farmers with small pieces of land," Omondi says. "We buy macadamia and cashew nuts and process them in a big factory in Nairobi, and then export the product to the U.S. and Europe."

The company's biggest challenge at the time was erratic cash flow, and Omondi was struggling to address it. "Cash is king," he says. "When there's no cash, there's no music, and when there's no music, you get off the dance floor."

It's unclear whether Omondi lifted that quote directly from the woman who became his Seed coach, Nancy Glaser, MBA '85, but he very well might have. Glaser calls herself "the cash-flow queen."

"I love cash flow because it's so straightforward," she says. "It's money in, money out."

As a venture capital and private equity investor specializing in retail finance, Glaser had spent more than 20 years in places like Poland, Russia, Kazakhstan, and Afghanistan helping startups refine their financial strate-

#### **FLOWERS TO FOAM**

Pesticide-laced flowers are one of the biggest sources of pollution in India's Ganges River. A company called Phool, whose founder came to Stanford Seed in 2019, gathers "waste flowers" from temples and converts them into products such as incense and packing material. The company employs women who used to work as "manual scavengers" emptying other people's toilets.

DAVID ROSENZ

"Cash is king. When there's no cash, there's no music, and when there's no music, you get off the dance floor."

- Frank Omondi

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gies. When some Stanford GSB classmates told her about Seed, she quickly volunteered.

"I had just returned from Afghanistan," she recalls. "It was hard coming back. America becomes boring."

In 2015, Glaser happily accepted Seed's invitation to move to Africa to coach a string of enterprises poised to grow. She spent two years on the continent, unpaid. Among the 24 companies she coached, she says, few had more potential than Ten Senses.

Shortly after she met Omondi and went through his books, Glaser saw that Ten Senses had all the ingredients for success: a good story, a strong leader, reliable suppliers, and hungry customers. But she remembers some of those customers calling from overseas, asking about shipments of macadamia nuts that Omondi's team had promised to deliver.

"The phone would ring and someone would say, 'Where's my container?'" she recalls. "They were furious. They'd been promised shipments, but Ten Senses had run out of nuts. And they'd run out of nuts because they'd run out of money."

The 10,000 farmers who sell their crops to Ten Senses were also displeased. They had product to sell, but their favorite buyer, Omondi — who bypasses unscrupulous middlemen and pays a fair price — was leaving them high and dry.

Ten Senses' suppliers own, on average, six acres of crops apiece, according to a 2019 Seed-funded analysis. They are "wealthier" than most Kenyans: 46% of them earn more than \$5.50 a day, compared with only 29% of the people nationwide.

"If Frank doesn't have the money, everybody loses," Glaser says. "All the good guys lose."

WHEN THE FOUNDERS of Zifo RnD Solutions, Raj Prakash and Vanchinathan, first heard about Seed in 2018, they were skeptical that the program could help them. Their consultancy was growing at a steady clip: Deloitte

#### **WATER CELEBRATION**

"As soon as you hit water and it starts gushing out, women and children start jubilating," says Samuel Appenteng, founder of Joissam Ghana, which installs drinking-water wells throughout rural West Africa. "I have seen women fall on the ground and roll in celebration." He completed the Seed Transformation Program in 2013.



#### Nancy Glaser, MBA '85

"Seed has given me so much joy. I tell my fellow GSB alumni all the time, 'If you can leave for a year, you should do this.' What I love is that you get to work with people who are so eager to become successful entrepreneurs, who want to listen to you, who take everything you say with welcoming ears and eyes and brains. You walk in the room and they're practically cheering, because they know you're going to bring them knowledge that they need. Seed has made me realize that it's never too late to take your business skills to a place where they'll be highly valued."

had just named it one of the 50 fastest-growing technology firms in India — for the seventh consecutive year.

"They came into Seed as A students," says Aaron Finch, MBA '90, who served as Zifo's in-country coach for just two months before the pandemic forced him to return to the U.S. early last year. It was Finch's second tour as a Seed coach; in 2014, he and his wife had moved to Accra, the capital of Ghana, where he'd spent a year assisting a diverse array of West African firms.

At first, Finch found Zifo to be a bit of a puzzle. For one thing, the actual work it does can be hard to decipher. Most of Zifo's clients are in the pharmaceutical and medical-device industries, and the descriptions of its various data-driven services sometimes seem written in code: "Our CDISC consultants provide all the required inputs ... from CRF design as per CDASH standards to creating submission and analysis datasets using SDTM and ADaM standards."

Also, among its seven primary services is business consulting — helping other companies plan and sustain strategic initiatives. Which raises the question: Why would a firm that has business consulting as one of its core offerings need a business coach like Finch?

Raj explains why. He and Vanchinathan both have backgrounds in engineering and middle management. Overseeing a burgeoning global enterprise was uncharted territory for them. So they were constantly on the hunt for opportunities to learn more about how to become better leaders.

Finch had been a cofounder of Coinstar and COO of OtterBox — both entrepreneurial success stories — and he knew that even thriving firms face ongoing, stressful challenges. So, shortly after he met the Zifo cofounders, he asked them, "What keeps you up at night?"

He remembers Raj mentioning one particular concern: that he was spending too much time, as CEO, helping Zifo's sales team expand its business, when he should have been dealing with long-term strategic issues.

In response, Finch helped them craft a plan to cultivate "champions" inside companies that were already using Zifo's R&D informatics and data-analysis services: customers who regarded the consultancy as an asset within their vertical and would spread the word to coworkers in other departments, thus expanding Zifo's sales.

But Raj says the most important thing he and Vanchinathan learned from Seed was more holistic. It taught them how to view their organization as an ecosystem.

"Seed gave us the opportunity to benchmark ourselves," says Raj. "Where do we stand in terms of sales? Where do we stand in terms of governance? What is our leadership



#### **MORE THAN A MERE WORKPLACE**

"Seed made me aware that I had a business that could transform many lives, including my own," says Linda Ampah, CEO of KAD Manufacturing, a Ghanaian clothing company. Ampah recruits many of her workers from the streets of Accra and goes on to offer them training, housing, and daycare for their children.



#### Aaron Finch, MBA '90

"I saw an ad about Seed in one of the Stanford magazines in 2014. I tore it out and I went home and I handed it to my wife and I said, 'Do you want to live in West Africa for a year?' And she was like, 'Yeah, that'd be really interesting.' Living in Ghana, the culture was so foreign to anything I'd ever experienced. I've traveled a ton, but it's completely different when you actually make some-place home for a year, and then build deep personal relationships with the people you're coaching and the Seed staff. It's healthy and humbling to experience how most of the world lives."





#### FOOD & OPPORTUNITY

"We set out to feed the nation not just with food," says Victor Oduguwa, cofounder of Nation Feeders, an egg and poultry business in Lagos, Nigeria. "We also want to feed it with jobs and with opportunity." He and his wife, Abiola, completed the Seed Transformation Program in 2015.

BY THE NUMBERS

#### Stanford Seed

4,085

leaders and managers have been trained.

20

countries across Asia and Africa are represented.

\$421M

million (USD) in capital has been raised by Seed participants after starting the program.

48%

of companies raised capital after signing up for Seed.

\$183M

million (USD) is their cumulative revenue growth.

39%

of participants conducted business with another Seed Network member.

24%

was the average annual job growth among Seed participants.

80,000

cumulative hours of in-country assistance were provided by coaches.

11,000

hours of remote assistance were provided by consultants.

73,000

hours of intern assistance were provided by Stanford students.

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capability? We were pleasantly surprised to realize that we do a lot of things well, but we also realized that we have lots of room for improvement."

It turned out that one area specifically in need of improvement was HR.

**IT WAS CLEAR TO GLASER,** the cash-flow queen, that Omondi needed to secure strong investors if he was going to grow his nut company. It was also clear that many investors were already interested in Ten Senses.

"He had a pack of business cards two inches thick," she recalls, from VCs and private equity fund managers who wanted to invest in Ten Senses. To Glaser, that only seemed logical, because she'd come to know the company and the man behind it. "If I had a social impact fund, I would have been hungry for investing in somebody like Frank," Glaser says. "He's a great manager. He's a great leader. He's a great, good man."

The problem, she says, was that Omondi didn't have — and couldn't find — anyone with the expertise to create financial projections that meshed his current operation with his long-term vision.

"What was holding him up was the ability to put together the financial projections that would satisfy an investor doing due diligence," Glaser recalls. "So I said, 'OK, let's tackle that first."

Although venture capital and private equity firms are increasingly interested in investing in Africa, Glaser says, owners of many midsize companies on the continent still find it challenging to obtain the funding to scale their businesses. Unlike in the United States, where the art of the pitch is taught in many schools, such preparation is new in Africa, she says. So Glaser set out to help Omondi "learn how to tell his story in a way that conveyed professionalism and confidence to potential funders."

That was in 2016. Two years later, after much due diligence, a Netherlands firm called DOB Equity closed a \$2 million deal with the nut producer. Ten Senses also recently negotiated a working capital line of \$1.5 million from Common Fund for Commodities, an intergovernmental agency also based in the Netherlands.

"It's all been very, very helpful," Omondi says.

**AS ZIFO'S SALES HAVE BRISKLY GROWN,** so has its worldwide workforce: from 300 to 1,000 in the past four years. That kind of expansion brings its own set of challenges — especially when many of those employees live in different countries with different cultural norms.

"I don't know of any other program that offers the leader of a small or medium enterprise, who's looking to scale, the kind of training we provide. No one else does anything like it."

- Darius Teter

# How to Keep a Growth Engine Fine-Tuned

A conversation with Darius Teter, executive director of Stanford Seed

# STANFORD BUSINESS: In a nutshell, what is Seed's central goal?

**DARIUS TETER:** Our mission statement, which was refined two years ago, is concise and straightforward: "We partner with entrepreneurs in emerging markets to build thriving enterprises that transform lives."

#### How?

Through high-touch training and ongoing support. Our value proposition is that we bring Stanford to you. That includes faculty, volunteer coaches and consultants, student interns, and staff. Our goal is to transform an entrepreneur's leadership style, their management team, and the professionalization of their business — all designed to help them build thriving, socially conscious enterprises.

#### And most of that is done by volunteers?

Much of it, yes. We also have an amazing team of faculty and staff, but Seed is unique precisely because we have so many exceptionally talented alumni volunteer coaches and consultants and student interns. Our coaches are all senior-level execs who live in-country for a year. To date, they've contributed over 80,000 hours of their time. Imagine the cost if we had to hire people of such a high caliber to provide that many hours of support to our participants. Truly, it's their vast input that allows us to do what we do.

# Up to this point, Seed has focused very insistently on small and medium-size enterprises. Why?

In the U.S., the bulk of employment comes from small and medium companies — firms with less than 200 people. That's always been the engine of growth here. But if you look at a typical country in Africa, what you'll see is a whole bunch of tiny enterprises — like family size, with 5, maybe 10 people — and a few really big enterprises. But there are not a lot of companies in the middle. That's because it's so hard to take a small business and turn it into a 200- or 300-person business. Part of that is a dearth of middle managers. Part of it is access to capital.

#### What kind of companies are you looking for?

We want companies with a growth mindset, strong value proposition, and at least \$300,000 (USD) a year in revenue. We want them to have an actual management team, not just one person. And we want them

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to have been in business for at least three years, because we're not an incubator — at least not yet.

# Is it hard to find applicants who are established entrepreneurs?

In our 2020 cohort, we had something like 2,400 applicants for only 180 slots, so we're flooded with applicants, but up to 65% of them don't meet our minimum criteria. To reach that 65% who are trying to get off the ground, we are currently piloting a program called Seed Spark. We're also about to launch a podcast focused on entrepreneurship in emerging economies, called Grit & Growth.

# How do you select finalists for the Seed Transformation Program?

Of course, we look at revenue, profits, and employment numbers — because those are great ways to measure whether a business is successful. But ultimately, we want to know if they have the potential to grow and if they're having a positive impact on their communities. That is: Does their success matter to anyone other than the owners? For instance, we have a company that drills for water in arid regions in Ghana. We have a company that builds apps to bring banking to the unbanked across Nigeria. These are important problems.

We also try to ask questions that give us a sense of their character and ethics. What is your purpose? Do you have the passion and drive to grow your business? How many of your team are women? And once we have a short list, we actually go visit them — or at least we did before the pandemic. It's not efficient, but it's crucial, because some of them look amazing on paper, but when you go to their business, you realize it's all BS.

# Has your selection criteria changed over the years?

We're paying more attention to bankability. Is a company able to attract some type of capital, such

as debt or equity? If not, is it able to generate growth through its own revenue? If a company doesn't have a source of capital, it can't grow, no matter how ambitious it is. So we're asking for a lot more financial data to understand each company's cash-flow situation. This year, as part of our marketing strategy, we plan to talk to banks and investors to ask them, "Who are you guys looking at?" Because they are very tough assessors of quality. We're also bringing in second-year MBAs as interns to review applicants' financials.

#### As a way to measure an applicant's bankability?

Yes. The idea is you get an MBA2 who's just spent a year going through the GSB's core finance curriculum. You give them 10 companies and say, "Look, here's their profit and loss statement and their balance sheet. What are the red flags? What questions should we be asking this applicant in an interview?" It would benefit students by giving them real-world experience with emerging markets. If the pilot goes well, we'll make it a regular part of recruitment.

# You mentioned ethics as part of the selection criteria. Is it also part of the curriculum?

Definitely. We include ethical business considerations throughout the program. We have a big unit on HR and how you treat your staff. We challenge companies to consider their impact on their suppliers, customers, and communities. The other thing we do is talk about corruption, but to be honest, that's been tricky. Stanford faculty may not have a comparative advantage when it comes to talking to Nigerians or Kenyans about how to deal with corruption. I've heard business leaders say to faculty, "Look, you have no idea what it's like to have tax guys coming to your office every month trying to shake you down. You've never been asked to pay bribes to win a government contract."

#### How does Seed help them in that case?

Without being judgmental, we have them think through a stakeholder analysis, using a framework taught at GSB called "strategy beyond markets." The idea is that these corrupt officials may not be suppliers or buyers, but you have to think of them as stakeholders. And that's all part of having a strategy beyond your immediate market. Understand where these dangerous places are, and think about how you can reimagine your business to minimize risks.

#### They have to bake it into the business.

Yes. We've also asked the businesses themselves to share their corruption stories with one another, so they become live case studies. We've tried a lot of ways to go from theoretical frameworks to practical solutions.

# So dealing with corruption is actually a formal part of the curriculum?

Yes, and it's one of the hardest things to get right.

# How has the COVID-19 pandemic affected your work?

When the pandemic hit, a lot of the countries where we work went into complete lockdown. For a bunch of our companies, their supply chains collapsed overnight. But what was amazing was how everyone immediately began helping each other. Just one example: In Nigeria, the cohort got some accountants to give an online seminar on urgent cash-flow management. They did that in two weeks. And then our faculty and some alumni started doing amazing webinars on understanding the new normal, financial management, and crisis HR.

#### What about the shift to online coaching?

We evacuated all our resident coaches, including a number of GSB alumni, in the spring of 2020. Many of them continued to remotely coach our business leaders. We were so encouraged by their commitment and success that this year the entire coaching program is operating remotely.

#### What percentage of your participants are women?

Our target for the past couple years has been 30%. We exceeded that in Southern Africa and came close in East and West Africa. We're not quite there in India. We're hopeful that the shift to an online program might increase the number of women applicants. A lot of female entrepreneurs don't apply with us, because they can't just pack up and travel four times a year for classes. Many of them are lead caregivers for children and elderly family members. Or, culturally, maybe it's taboo for them to go to Ethiopia and stay in a hotel by themselves.

#### Are there plans to expand beyond Africa and India?

Since we will be online for the next cohort, we are recruiting from 11 new countries, including Nepal, Bangladesh, and Sudan. We've also developed a lower-touch program called Seed Spark, for very early stage businesses, that draws on Stanford's considerable expertise helping aspiring entrepreneurs launch their companies.

# Are there any other organizations that you consider competitors? Is anybody else doing this work?

I don't know of any other program that offers the leader of a small or medium enterprise, who's looking to scale, the kind of training we provide. The mentoring through coaches. The huge network of pro bono consultants. The Stanford students serving as interns. And of course the faculty members who actually come to share their expertise in person. No one else does anything like it. — S.H.

FEATURES STANFORD BUSINESS



#### **ART MEETS INDUSTRY**

Accents and Art in Accra,
Ghana, produces high-end
metal and woodwork and is
best known for its artistic
balustrades. It is also home
to Ghana's first privately
owned art and design
institute. The founder,
Constance Swaniker,
completed the Seed
Transformation Program
in 2015.

From Claudia Salvischiani's perspective, Raj and Vanchinathan were already far ahead of other Seed companies she'd assisted with HR issues, so she, like Finch, was surprised when they asked her for help.

"They were absolutely willing to question everything that they were doing," she recalls. "They said, 'Just have a look and give us feedback about whatever you think needs to be improved."

Salvischiani, SEP '18, had volunteered for Seed shortly after finishing Stanford GSB's senior executive education program, which had inspired her to reassess her life and career. An Italian, she'd spent most of her career in Europe overseeing HR strategy for German companies with multinational reach.

"I looked at what I was doing and realized I was just making money," she says. "I was just making money and spending money. But I wasn't doing anything for the world."

Six months after receiving her SEP certificate, she quit her job. She first joined Seed as a volunteer consul-

tant, which is different from coaching in that it entails meeting with entrepreneurs remotely rather than moving to their country. Her first clients were in Ghana and Botswana. She loved the work and signed on for more, eventually connecting with Raj and Vanchinathan at Zifo when Seed expanded into India in 2017.

One of Raj's missteps, Salvischiani realized, was that he was being too prescriptive with Zifo's foreign offices when it came to imposing guidelines for certain HR issues, such as goal setting and performance evaluation.

"In my career, I came to know how a subsidiary feels if headquarters just rolls out a new policy without asking, 'Would you like to do it in a different way? Will it affect the culture there?'" Salvischiani says. "As CEO, it's important to decide what is negotiable and what is not. I told Raj, 'You decide on strategic stuff, because strategy is nonnegotiable. But there are a lot of things that *are* negotiable, and you should let the subsidiaries decide how they do certain things.' This was very new for him."



#### Claudia Salvischiani, SEP '18

"I identify so much with this organization. I've been trying to convince a lot of people in my class to come work for Seed. I say, 'You will love it. You will wonder why you work for a big company.'

What was absolutely shocking to me was how helpful my experience could be. In Europe and the U.S., people tend to be so saturated with trainings and information that they become resistant if you try to give advice or support them. Then you go to Africa, and you provide a little bit of training, and the impact is huge. They're so grateful. They start making changes the next day."



#### **TAPPING POTENTIAL**

Chrysalis is an education company based in Chennai, India, that designed an activity-based curriculum for children called "Schools for Awakening Human Potential." In the 2019–20 school year, its curriculum had been adopted by 563 schools serving more than 150,000 students.

Says Raj, "We are engineers, so we are very good at solving problems. But sometimes we are not very imaginative. With Seed, we learned to see that we are part of an ecosystem, part of a group. Now, when somebody has an idea we might not agree with, we stop and say, 'Wait. Why not?'"

**FAROUK GRISSOM WAS ESSENTIALLY** in the dark about the kind of work he'd be doing for Ten Senses when he arrived in Nairobi in the summer of 2019 for his 10-week Seed internship.

At the time, he was a sophomore at Stanford, pursuing a major in management science and engineering and a minor in computer science. He signed up for Seed mainly to "fill in my own personal knowledge gaps." He wanted to learn about Kenya, and he wanted to learn about the business of agriculture.

Grissom spent his first 10 days at Ten Senses asking questions, trying to get a sense of the company's pain points. He learned that Omondi needed help developing new blockchain-based supply-chain software — a

critical tool for suppliers and customers alike.

One of Ten Senses' biggest selling points with its overseas customers is that its macadamia nuts and cashews are certified fair trade and organic — which are designations that require a verifiable tracking system. As Omondi puts it, "We trace the product from the farm to the shelf."

And one of its biggest selling points with the smallplot nut suppliers is that it pays them immediately via their smartphones.

All of which meant that working on the supply-chain software gave Grissom the opportunity to examine the business from end to end. "We talked to farmers, we talked to employees — anyone who could help us understand what kind of information needed to be captured at what stages," he says. "It was a great learning experience because you actually come to understand the whole chain."

Omondi says he remains deeply grateful for Grissom's efforts: "He worked like a horse and was good to the team and was willing to go to the ground. And he gave us a good solution."

Grissom says his time at Ten Senses left him feeling more empowered than he'd expected. "I just came in very strongly with the attitude of, 'I'm here, here are my questions, I'd like to use my time here to build something useful,'" he says. "And then that kind of actually happened. It was cool."

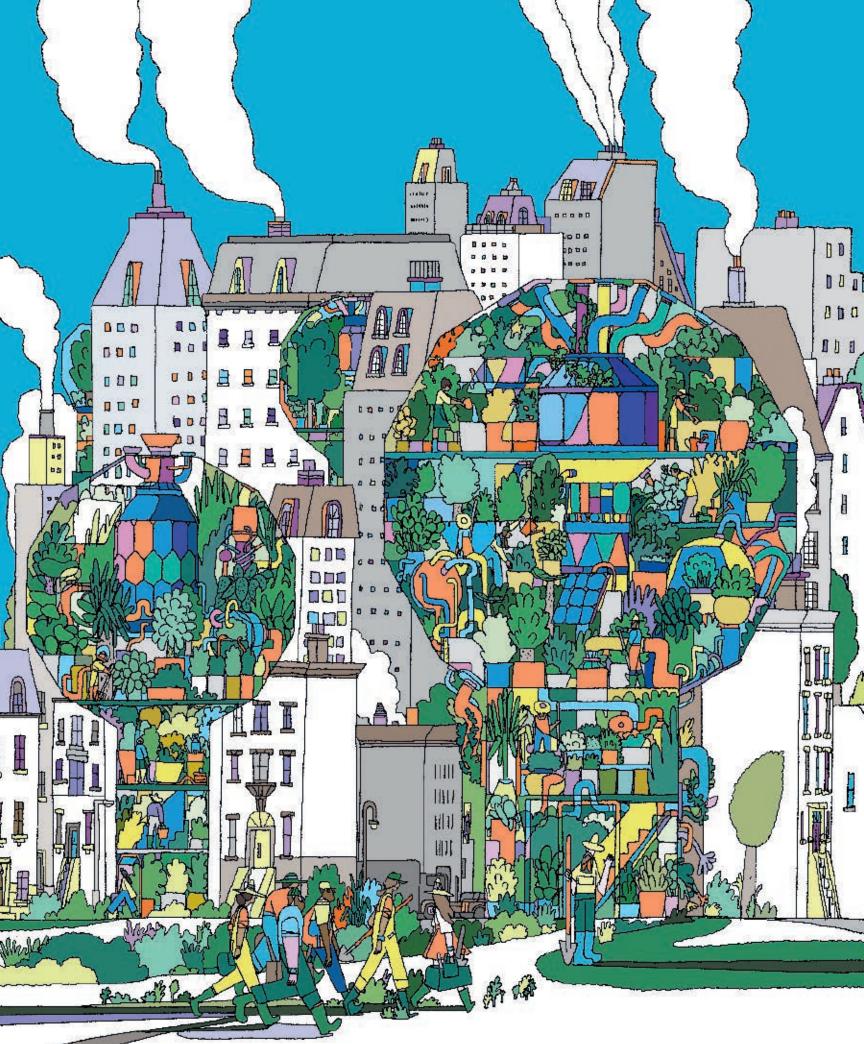
Grissom's last project at Ten Senses involved helping Omondi's team optimize a side business of selling macadamia tree seedlings to farmers. It was a self-perpetuating idea with great promise: You make money off the seedlings while also creating a more secure and ever-growing pool of suppliers.

The problem was that Omondi and other executives were spending an inordinate amount of time monitoring the nurseries and the health of the seedlings. So Grissom helped create a basic inventory-tracking system that made the process more efficient and that enabled the seedling side of the business to grow.

Omondi says his company's annual revenues have doubled since he reached out to Seed five years ago. He currently employs 300 workers but expects his workforce to grow to 3,000 within 10 years. And thanks in part to its new inventory-tracking app, Ten Senses has become Kenya's largest supplier of macadamia tree seedlings.

Omondi has hopes that this seedling business will fertilize growth of a different sort. His long-term goal is to expand, by a factor of 10 — from 10,000 to 100,000 — the number of farmers who get paid to supply the nuts that enable his company to thrive. GSB

"With Seed, we learned to see that we are part of an ecosystem, part of a group. Now, when somebody has an idea we might not agree with, we stop and say, 'Wait. Why not?"



# Green Giants

Forget about electric cars and meatless meat: Mounting a serious response to climate change requires inventive work in less-glamorous sectors such as risk management, corporate consultancy, and private equity. Here are five Stanford GSB alumni quietly pulling levers to save the planet.

#### BY ALEXANDER GELFAND

ILLUSTRATIONS BY CELYN BRAZIER

Experts agree: To prevent cataclysmic climate change, we must decarbonize the world economy and remove vast quantities of CO2 from the atmosphere. Individual choices like buying electric vehicles and going meatless certainly will help, but a true transition to a low-carbon future must include the combined weight of the financial system — and a whole lot of innovation.

#### **STEPPING UP**

"With COVID-19, we've seen that individual choices do make a difference: When everyone stays home, you can have pretty dramatic emissions reductions," says Alicia Seiger, MBA '02, who serves as managing director of both the Sustainable Finance Initiative and the Stanford Steyer-Taylor Center for Energy Policy and Finance.

"But that's not how anyone wants to live their lives going forward; we are not going to get where we need to go if it's all about sacrifice and hardship," adds Seiger, who also teaches a course on climate, politics, finance, and infrastructure for business and law students at Stanford.

Instead, systemic transformation of everything from capital markets to corporate sustainability "is going to make for much more opportunity, and a much more rapid pathway to net-zero." (In a net-zero world, we would remove as much carbon from the atmosphere as we put into it.)

There's no end to the problems that climate change poses, and no single way to address them. The industrial sector needs new low-carbon business models and new carbon-removal technologies. Investors and businesses need better tools for evaluating climate risk. The financial system at large needs new mechanisms for driving capital into climate solutions. And government needs to promulgate policies that will send the right market signals.

But Seiger is hopeful, in large part because of the passion, the expertise, and the entrepreneurial mindset that Stanford GSB graduates are bringing to bear on this daunting, dizzying challenge.

"At the end of the day, climate is a leadership crisis," she says. "And we need our best leaders to confront it."

#### The Insider

Ever since her days as an undergraduate at Harvard, where she founded a club dedicated to exploring what private markets could do to accelerate decarbonization, Nan Ransohoff has wanted to harness the power of business to address climate change. And she's been certain that there is more than one way to get the job done.

"Every industry has a role to play in climate," Ransohoff says.

Now, she is proving that to be true through her role at Stripe, a fintech giant that provides payment processing software — and whose primary business has nothing to do with cleantech or renewables.

In 2019, Stripe (valued at \$95 billion as of March 2021) pledged that it would spend at least \$1 million of its own money each year to permanently remove carbon from the atmosphere.



NAN RANSOHOFF, MBA '15 Head of Climate, Stripe

"We have to rethink transportation, infrastructure, and buildings down to the studs. There's a lot to get done here."

— Nicole Systrom, MBA '14

Developing and deploying new methods for pulling large quantities of carbon out of the sky quickly and efficiently is essential to avoiding catastrophic climate change. Stripe's goal is therefore twofold: to speed scalable, early-stage carbon-removal technologies down the cost curve and to reassure investors that there is indeed a market for them.

"We want to be the buyer of first resort: a demand signal to entrepreneurs and researchers in building promising new carbon-removal technologies that says, 'Hey, if you build it, people will come,'" says Ransohoff.

Ransohoff now oversees Stripe Climate, a related initiative that allows Stripe's million-plus business customers worldwide to contribute their own money to Stripe's carbon-removal efforts. The project was inspired by Stripe users who wanted to take climate action themselves but didn't have the time or the resources to figure out which technologies to bet on. The company enlists a network of scientific experts to identify promising carbon-removal solutions, and a merchant anywhere in the world can opt in to the program with just a few clicks from their Stripe dashboard.

"Our thinking was, if we can make it really easy for Stripe's million-plus users to direct a fraction of their revenue to carbon removal, we might be able to build a largescale, voluntary market" for such startups, says Ransohoff.

More than 500 businesses have done exactly that, and Ransohoff and her team are currently exploring ways of broadening the program's scope. One option would be to allow merchants to enable their own employees or end-users to contribute. Another might use Stripe's credit-card-issuing business to offer customers the opportunity to purchase carbon removal with their reward points.

The success of the program has reinforced Ransohoff's belief that there is a huge, untapped opportunity for companies of all kinds to address climate change — an opportunity that Stripe first seized for itself and is now trying to help others seize as well.

"We're trying to make the collective action part of climate change a bit easier," she says. "If we can convince more businesses to do even a little, we can get further, faster."

COURTESY OF NAN RANSOHOFF

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#### The Consultant

Nicole Systrom wants to pump more capital into the clean energy sector. And she is willing to do so by any means necessary.

"My mission is to get more resources into climatepositive things," says Systrom, who formed Sutro Energy Group just after graduating from Stanford GSB. "That means investment dollars, that means philanthropy, that means political giving, that means people's time."

Systrom learned firsthand the importance of having a diverse toolkit for addressing climate change: After picking up a BS in earth systems from Stanford, she raised funds for the Pacific Forest Trust, a land trust and advocacy group that works on carbon sequestration and climate change policy — only to see the American Clean Energy and Security Act, the most significant climate change bill in American history, die in the Senate in 2009.

"That experience really pushed me deeper along the path of asking, 'What is the role of the private sector? And how can we make the economic case that this is the right direction to go?" Systrom says.

After a stint managing greenhouse gas reduction projects at a for-profit company, Systrom came to Stanford GSB to learn more about how to use all available levers — financial, technological, societal — to achieve sustainability. In the process, she helped develop a program at the Steyer-Taylor Center for investors who are interested in assessing climate change risks and opportunities. And given the systemic nature of climate change, the economic opportunities boggled her mind.

"We have to rethink transportation, infrastructure, and buildings down to the studs," she says. "There's a lot to get done here."

Systrom is doing as much of it as she can. As a consultant, she helps investors who are new to the climate space — philanthropic foundations and private investors, corporations and family offices — understand the various levers they can pull: investing in cleantech companies, funding organizations that educate legislators and the public about the need for effective climate policies, and ensuring that their own for-profits have resilience plans for climate change.

Systrom also networks with other entities and people within the sustainable-finance ecosystem who can serve as resources for her clients, such as fund managers, startups, incubators, and accelerators. Given the pressing need for innovative approaches to carbon removal, she is particularly interested in early-stage technology development. She serves on the boards of Activate, which



NICOLE SYSTROM, MBA '14 Founder, Sutro Energy Group



MATT SCOTT, MBA '03 Senior Director, Willis Towers Watson's Climate and Resilience Hub

offers financial support and entrepreneurial training to engineers and scientists working on transformative energy and climate technologies; and Prime Coalition, which channels philanthropic capital into market-based solutions to climate change that VCs might consider too risky in the early stages.

If Systrom has her fingers in a lot of pies, that's because she's convinced that an interdisciplinary approach is necessary to achieve change. She points to the rise of electric vehicles, which required the participation of many different actors doing many different things: philanthropists who funded research into rebate policies and contributed to politicians who would support them; investors who put up the money required to develop the technology; and financial institutions that supported the charging infrastructure necessary for deployment.

"Everyone has more tools at their disposal to affect climate than they think," she says. "And my work is to help people put those tools to work more effectively."

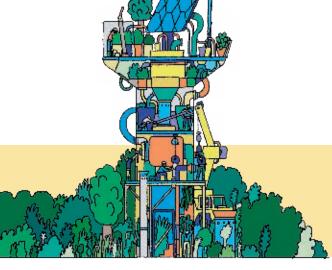
## The Risk Manager

In his current position as a senior director in the Climate and Resilience Hub at Willis Towers Watson in London, Matt Scott helps clients ranging from banks and insurers to corporations and governments manage the risks — and seize the opportunities — presented by climate change and the transition to a low-carbon economy.

It's a broad mandate. But as someone who pretty much wrote the book on climate risk and green finance, Scott is uniquely positioned to handle it.

As one of the first cohort of Stanford GSB students to take the course now known as *Design for Extreme Affordability*, Scott cofounded a startup that developed a solar LED light to replace the smoky and expensive kerosene lamps used in many parts of the developing world.

The startup was successful in bringing solar lighting to off-grid villages around the globe, but the challenges of raising funds for a social enterprise — philanthropic



"I became curious about how to move mainstream markets through climate risk, because risk is such a fundamental characteristic of how financial markets function," he says.

That curiosity led Scott to the Bank of England, where in 2015 he helped establish a global framework for thinking about the many different risks related to climate change: not only the physical risks linked to storms and floods, for example, but also the transition risks presented by carbon regulation, such as mispriced and stranded assets. He also helped spark the movement to have companies disclose their climate-related risks so that they could be priced and managed.

In 2018, Scott was seconded to the British government, where he launched the UK's Green Finance Strategy. One of the primary goals of the GFS is to make Britain's financial services sector more climate-friendly and competitive by adopting mandatory climate-disclosure standards and identifying opportunities to develop the climate-related data, analytics, and financial products required to shift to a low-carbon economy.

From his perch in the Climate and Resilience Hub, Scott continues to work on cultivating better tools for understanding the financial impact of climate risk. And he uses his knowledge of policy, financial regulation, and green finance to help clients around the world assess and put price tags on the risks and opportunities that come with climate change so that they can better allocate their capital.

The stakes are high: One way or the other, Scott says, climate-related risks will ultimately affect every corner of the economy. The good news is that investors, corporations, and other actors in the financial system can mitigate those long-term risks by actively stewarding the



MEGAN STARR, MBA '15 Global Head of Impact, the Carlyle Group

transition to a low-carbon world — as soon as possible.

"It's not just about managing the near-term risks and being resilient to changing weather," Scott says. "The actions that are taken over the next decade will determine the balance of future risks."

#### The Investor

How can investors make choices that are both economically rational and environmentally correct?

That was the fundamental question that drew Megan Starr to Stanford GSB. And as global head of impact at the Carlyle Group, a private equity fund with \$246 billion of assets under management, she gets to answer it every day.

Raised on Cape Cod by parents who were committed environmentalists — "I grew up in a house that they built by hand; we had solar panels for electricity, and grew our own food," she recalls — Starr was not an obvious candidate for a career in private equity.

"I was not a capital markets girl," she says.

Instead, Starr studied environmental science at Harvard with the renowned climatologist Daniel Schrag, then spent several years at a philanthropic foundation supporting action on climate change. That experience led her to wonder how the 95% of the foundation's endowment that was invested rather than disbursed through grants could be used to solve environmental and social challenges. She says Stanford GSB gave her the tools she needed to figure that out, and after helping build the impact investing and environmental, social, and governance desks at Goldman Sachs, she ascended to her current position at Carlyle.

Starr leads a team of experts who integrate climate into every aspect of Carlyle's business. That includes helping the firm's deal teams consider climate-related factors when performing due diligence on individual companies; increasing the value of those companies by working with them to boost energy efficiency and prepare for a net-zero future; and pricing climate risks and opportunities across the firm's entire portfolio.

Last year, for example, Starr had a climate-risk consultant help her group vet a portfolio of assets to understand how climate risks such as sea-level rise and extreme weather could affect insurability and therefore pricing decisions.

The team also carbon-footprinted the firm's majority-owned portfolio companies in its three primary private equity funds for the very first time. The idea, Starr explains, was not to sort businesses into good and bad buckets based on a static snapshot of their emissions,

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but rather to figure out how companies could leverage — and improve — their sustainability profiles to drive better business performance and financial outcomes.

The exercise paid off: Some companies were able to identify millions of dollars of potential savings by spotting inefficient energy use, while others were able to capitalize on their relatively low-carbon footprints by creating differentiated pricing among consumers who appreciate a climate-friendly profile.

Under Starr's guidance, the firm has also begun to link debt financing to environmental goals. In one case, Starr and her colleagues have been measuring the carbonemissions benefit of a major manufacturer's technology versus that of its peers. The price of the company's debt is now linked to specific emission-reduction goals.

"As they hit those goals, their debt gets slightly cheaper," says Starr. She sees the arrangement as a prime example of how investors can incentivize better climate performance alongside profitability. In her view, those two things aren't just compatible; they're inextricably intertwined.

"Our goal as a private investor is to build better businesses, because better businesses are worth more," Starr says. "And the world has changed such that the dimensions of better business are inclusive of climate resilience and opportunity."

#### The Entrepreneur

Nicholas Flanders is living the dream.

As a sci-fi fan growing up on a farm in upstate New York, Flanders was steeped in both nature and technology. After working in the clean technology practice at McKinsey & Company and helping lead a tech startup in New York City, he came to Stanford GSB with the goal of launching his own cleantech firm.

Today, Flanders is CEO of Opus 12, a startup built around cleantech hardware that uses electricity from renewable sources such as wind and solar to transmute carbon dioxide and water into gold — or, more precisely. into valuable products like jet fuel and plastic.

The company's core invention is a device that relies on novel chemical catalysts developed by Flanders' cofounders, Kendra Kuhl and Etosha Cave, both of whom earned PhDs in chemical engineering at Stanford. (The two were part of the Jaramillo Research Group, which has done pioneering work on converting CO<sub>2</sub> into fuels and chemicals using renewable energy.)

Their goal is to offer carbon emitters the opportunity to recycle their CO<sub>2</sub> emissions into revenue-producing



NICHOLAS FLANDERS, MBA'16 CEO, Opus 12

"We're trying to make the collective action part of climate change a bit easier."

— Nan Ransohoff, MBA '15

chemicals and fuels, while at the same time reducing the companies' output of a harmful greenhouse gas. If deployed on a grand-enough scale, Flanders says, it could address as much as 10% of global carbon emissions.

It has other advantages as well: The catalysts are packaged in a device that can be dropped into existing industrial machinery, much as you might pop a new chip into an old laptop, allowing users to quickly bolt the technology directly onto their existing infrastructure.

And it makes carbon removal painless: Using nothing but CO<sub>2</sub>, water, and renewable power, the device generates the building blocks of chemicals that are identical to ones normally derived from fossil fuels—chemicals such as ethylene, a principal ingredient in most plastics; and carbon monoxide, which can be used to produce fuel for aircraft.

But even when you have a potentially revolutionary technology on your hands, building a viable cleantech firm is far more difficult than cooking up a new software app — especially when serious scientific R&D is required.

"You need more infrastructure than just a laptop and a couch to get started," says Flanders, who notes that he and his cofounders received early funding from Stanford's TomKat Center for Sustainable Energy.

After founding the company in 2016, the team spent two years building its first prototype with support from Cyclotron Road, a Department of Energy-funded program hosted by Lawrence Berkeley National Lab.

They needed more funding from government agencies like NASA and the National Science Foundation to develop a device with industrial performance and scalability. (NASA hopes to use Opus 12 tech to manufacture rocket fuel and other mission-critical products on Mars, using the planet's atmosphere and water as feedstocks.)

And to persuade investors the technology had legs, they relied on early buy-in from potential customers like the oil giant Shell, which selected Opus 12 to participate in a program designed to support early-stage cleantech.

"We needed all of that to raise our first dollar of outside funding," Flanders says.

But raise it they did. Total funding since its founding runs into the tens of millions of dollars, and Opus 12 now has relationships with companies such as SoCalGas and Mercedes-Benz, which last year used Opus 12 tech to produce the world's first plastic car part made from CO<sub>2</sub>. The team has expanded to include a few dozen employees, most of them chemists and engineers who are developing a bigger version of the device. And Flanders looks forward to making large-scale supply agreements with customers over the next couple of years. GSB

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# Bridging STEM's Gender Pay Gap

In the engineering and tech fields, women are paid less than men for entry-level positions — and it has nothing to do with their skill sets.

### BY COREY BINNS

ILLUSTRATION BY OLIVIA FIELDS

Among the many devastating impacts of the coronavirus pandemic is the stark fact that working women have been disproportionately affected — with four times more women than men being pushed out of the labor force, according to one survey. As the pandemic erodes women's progress in the workforce,

#### THE POWER OF SELF-ASSURANCE

Stanford researchers found that confidence often trumps competence when it comes to choosing between similarly qualified job applicants.



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addressing the inequalities they face from the start of their careers becomes ever more critical, beginning with equal pay.

Unfortunately, however, when it comes to working in engineering and tech — fields that offer the fastest-growing and highest-paying jobs — an entry-level salary for a man is more than \$4,000 higher than what's paid to a woman with comparable credentials. So begins a salary gap that only widens over time, shrinking women's savings and extending their debt burden.

Stanford researchers who studied this disparity discovered that there is in fact one credential that separates these new hires: self-confidence. Where one candidate guarantees he can prototype and problem-solve, the second candidate expresses her doubts. Employers in engineering and computer science fields appear to offer higher starting salaries to applicants who present as self-assured, and most of those applicants are men. This new research is the first to identify a link between confidence and a pay gap at the start of engineering and computer science careers.

"We see students who have taken four or five years of hard classes, some have done internships, but our data implies that employers are so swayed by the confidence with which these 22-year-olds are expressing what they can do," says lead author Adina Sterling, an associate professor of organizational behavior at Stanford GSB.

# I Believe, Therefore I Can

Overall, the team's findings point to the hefty role that self-efficacy — a person's belief in their capabilities — plays in persuading an employer which job candidate will be successful as an engineer and which will not.

"Confidence is not the same as competency," says study coauthor Sheri Sheppard, a Stanford professor of mechanical engineering. "If you're judging somebody based on projected confidence, you're losing out on hiring individuals who are going to be doggone good at the work."



Backed by a grant from the National Science Foundation, the researchers surveyed 559 engineering and computer science students who graduated from more than two dozen U.S. institutions between 2015 and 2017. They found that women earned \$61,000 in their first jobs, compared with \$65,000 for men, despite having the same degrees and grade point averages. According to the subjects' answers to questions about their capabilities, the researchers concluded that 2% of the pay gap between men and women could be explained by a gap in self-confidence.

ADINA STERLING is an associate professor of organizational behavior at Stanford GSB.

"Women are, in a lot of ways, told to discount their own opinions of themselves and to think about everybody else's opinions of them."

#### **CAREER PATH**

Adina Sterling: From Diapers to DEI

One of the things you study is early-career transitions. Can you tell us about your own?

In my early 20s I worked as a diaper engineer at Procter & Gamble, but a part of me dreamed of going to graduate school and becoming a professor. I went to a conference focused on increasing the diversity of faculty at business schools, and that's when I decided, "Yep, I want to do that."



Compared to their male counterparts, women in the survey applying to engineering and computer science jobs reported feeling less sure of themselves when designing a new product or project, conducting experiments, and building prototypes and models, as well as other skills hiring managers look for in potential employees. Yet, in actuality, these women possessed the same skills as the male applicants.

# The Rising Toll of Losing Confidence

Data has shown that confidence among girls plummets in high school math and science classrooms, even as girls take as many credits as boys — and earn slightly higher grades, according to a 2007 report by the U.S. Department of Education.

In addition, girls in high school and college are more critical of their math skills and hold themselves to higher standards. At Stanford, Sheppard notes, the top female students in her engineering classes describe feeling inadequate — also known as the imposter syndrome — every day.

That lack of self-confidence, prior to the Stanford study, had not been linked to early pay discrepancies. And its impact is significant: "The transition from school to work is unique in that if people can get on the right track, it propels you," Sterling says. Which means that when women start out \$4,000 behind their male counterparts, catching up is nearly impossible.

Sterling and her colleagues have a hunch as to why women end up with smaller pay stubs. Women are less likely to negotiate a salary than men. And hiring managers may funnel women to lower-paying positions. "Sometimes these career decisions are incremental," says Sterling. "If you interview and then you get the job, you become an engineer. If you don't, maybe you become a lower-paid lab technician."

The confidence gap can steer some women out of engineering and computer science fields altogether, positioning them to make even less.

Women who go into education, for instance, earn up to \$20,000 less annually than they would as an engineer, Sterling says.

# Mind the Pay Gap Through a Growth Mindset

But Sterling's research and that of others may offer female job applicants in STEM fields a leg up. Stanford psychology professor Carol Dweck found that when a girl believes she can learn what she needs to know in science and math, she is more likely to succeed in a STEM field than if she believes a person is born with skills in those subjects. Professors can foster this growth mindset in their female students.

By contrast, Sheppard suggests that men risk feeling overconfident, and she hopes colleagues in engineering departments will get better at teaching students to be more balanced in their self-reporting. "How do people learn to have an appropriate level of confidence when they represent themselves and their capabilities?" she asks. The goal should be that they "not oversell themselves."

Recruiters also need to reevaluate how they evaluate candidates, Sheppard says. Employers may want to observe applicants performing tasks they'd need to do on the job.

Next, Sterling is studying how internships influence the gender pay gap. Preliminary evidence suggests that when women are given the chance to try out for an organization as interns, they receive higher starting salaries.

"Women are, in a lot of ways, told to discount their own opinions of themselves and to think about everybody else's opinions of them," Sterling says. But simply suggesting that women should be more confident doesn't fly in her book.

Women would never choose to enter a job interview feeling hesitant, Sterling says. "Imposter syndrome is a horrible feeling." GSB

# Wait. You were a diaper engineer?

Yes, I did product design on diapers. I would spend days interviewing moms and dads, thinking, "How do you design a product that will allow parents to get more sleep?" I have lots of quirky stories, because diapers are a little gross. We would collect product after use to look at the integrity and the design. You can imagine what that might mean. But the engineers I worked with at P&G were topnotch. It was actually a lot of fun.

#### Much of your research focuses on pay gaps and other forms of inequality in the workplace. Why?

As an undergraduate at Ohio State, I was in the chemical engineering program, which was male-dominated. A group of my friends, mostly other women, would work together, study together, and do projects together. Frequently, we would set the curve in the class when it came to exams and projects. I know how talented women are in technical

fields, because I'd seen it up close. Once I became a scholar, I wanted to do something about the gender wage gap.

# What aspects of your research are you most proud of?

I love doing research on how to make workplaces more fair and equitable and then the very next quarter walk into a classroom and take these ideas to students and executives. That is so gratifying. — C.B.

# Give Them Shelter

Want to solve America's urban homeless crisis? First, you have to believe it can be fixed.

#### BY BETH JENSEN

PHOTOGRAPHS BY DREW KELLY

Anyone who has passed by the seemingly endless rows of hard-worn tents and makeshift shelters scattered under San Francisco's bridges, beside its freeways, and along its sidewalks has probably struggled to imagine how our nation's homeless crisis might be solved.

The extent of the need and the human pain overwhelms, and most of us soon enough realize that our imaginations aren't up to the task. We learn instead to avert our eyes.



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# A VISION COMES TO LIFE

Rebecca Foster, MBA '05, (left) and Liz Givens, MBA '04, visit their brainchild: a six-story building in San Francisco with 145 affordable, modular homes.



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Two alumni of Stanford Graduate School of Business have refused to accept that the problem is so daunting as to be hopeless. Today, Liz Givens, MBA '04, and Rebecca Foster, MBA '05, are watching a solution they envisioned begin to unfold: 145 clean, well-lighted new homes materializing not far from the street pandemonium that has become a part of urban life nationwide.

In San Francisco, an estimated 8,000 men, women, and children lack a stable home at any one time. About 2,800 experience chronic, long-term homelessness. And in a city where the cost of living is vastly higher than the national average, a single unit of "supportive" housing a safe, comfortable place to live accompanied by counseling and other services — can take up to six years to complete and cost taxpayers and/or charities upwards of \$600,000.

Those metrics didn't sit well at Tipping Point Community, where Givens works as chief development officer. The nonprofit was founded in 2005 to find new solutions to reducing poverty in the Bay Area.

"It was taking too long and costing too much to build permanently supportive housing in the city," she says. "Our goal was to figure out how to build it fast and more cost-effectively, and we knew we weren't going to be able to do it by ourselves. We were going to need partners."

The organization had never created its own housing development, so Givens turned to Foster, CEO of the San Francisco Housing Accelerator Fund, a nonprofit dedicated to speeding up the delivery of permanently affordable housing. After a few conversations, Givens and Foster teamed up with Tipping Point CEO Daniel Lurie, a group of Tipping Point experts on homelessness, and other GSB alumnae, including Accelerator board member Lydia Tan, MBA '91.

The team soon unveiled a plan that was at once laser focused and audacious: Build a permanent supportive housing project in San Francisco in less than three years at a cost of under \$400,000 per unit. It would offer not just housing, but also access to the health and social services essential in helping the formerly homeless navigate their new lives.

#### Finding a Funder

Critically, the plan needed a philanthropic partner who shared the vision of a faster and less expensive solution to chronic homelessness. They found that in GSB alumnus Charles R. Schwab, MBA '61, and his wife, Helen, who had donated \$65 million to Tipping Point's work, and now committed \$50 million of that to the new project.

#### **ASSEMBLY REQUIRED**

(This page) The prefabricated units are produced at Factory\_OS in nearby Vallejo, California, then stacked together at the San Francisco building site.

#### A CLEAN, WELL-LIGHTED PLACE

(Opposite) The microstudios are small but efficient. Each is 260 square feet and has a large window, a private bath, recessed lighting, and a built-in kitchenette.





Armed with that seed capital, the team moved fast. Freed from having to cobble together different sources of funding or navigate the bureaucracy that inevitably accompanies the use of public funds, they quickly set architects working on design plans, and within six months purchased a parking lot at 833 Bryant Street, in the city's SOMA (South of Market) Pilipinas cultural district. To further cut time and cost, they opted to use prefabricated modular buildings produced at Factory\_ OS, a young company in Vallejo, California. Typically, builders have to wait for a construction loan to pay the heavy upfront costs required for prefabricated construction. Here, it wasn't an issue.

"With our flexible capital, we were able to move fullsteam ahead with our modular production much faster than we would have otherwise," Foster says. "By the time we closed on our permanent financing, we were 40% done with construction."

At Factory\_OS, the units are hammered and screwed together and fitted with electrical and plumbing systems before being loaded onto trucks that lumber carefully over the Bay Bridge to the building site. There, teams lift them into place, connect the wiring and pipes, and add roofing, stairwells, and elevators.

# **Fast-Track Living Quarters**

The six-story Tahanan Building in San Francisco's SOMA Pilipinas cultural district will contain 145 micro-studios of 260 square feet each. It will be the city's first 100% affordable modular housing project.

men, women, and children in San Francisco lack a stable home.

2,800

of them experience chronic homelessness. \$600,000

is the average cost of an "affordable" San Francisco home. "People need hope that things can get better, and this project is a beacon of hope."

(LEFT) COURTESY OF SAN FRANCISCO HOUSING ACCELERATOR FUND; (RIGHT) DREW KELLY

The 260-square-foot micro-studios are small but efficient. Each has recessed lighting, one large window placed for maximum light, a living area, a private bath, and a kitchen with a two-burner stove, large refrigerator, sink, and laminate wood cupboards. To honor its neighborhood, the building is named Tahanan, a Tagalog word meaning "home," and the perforations in its exterior metal skin display a graphic of Philippine rice terraces.

When completed at the end of this year, the six-story building will be San Francisco's first 100% affordable modular housing project, encompassing 64,000 square feet and including 680 square feet of commercial space on the ground floor, 7,500 square feet of common amenities, and 4,400 square feet of open courtyard with landscaping and seating.

## **Logistical Challenges**

Residents will also have access to on-site services (provided by Episcopal Community Services of San Francisco) that include case management; assistance with basic food, clothing, and transportation needs; and support in connecting to additional off-site services.

While the building's assembly-line construction is faster and more cost-efficient than traditional methods,

there have been challenges. Logistics are a headache—although the factory makes its deliveries at night, drivers must maneuver the massive and unwieldy two-unit modules over the bridge, and streets must be closed to allow crews to hoist the apartments off the truck and into place. Factory\_OS employs hundreds of union carpenters, but the San Francisco Building Trades Council has raised concerns over whether modular construction poses a threat to other skilled tradespeople such as plumbers and electricians, who would perform a greater share of the labor at a traditional build.

And yet, says Givens, the project is coming together remarkably well, thanks to what team members describe as an unshakable, shared commitment to completing the project at least 30% faster and at a cost 25% to 30% below average for similar projects. That goal has required everyone on the team to take strategic risks, ranging from purchasing a parking lot site that hadn't yet been approved for a zoning change to providing insurance-company-level underwriting for Factory\_OS, which was a startup with limited insurance when the project began.

"This project hasn't always taken a straight line, but we've all been very clear about the goals from the very beginning, and that's been our guiding star," Givens says. "Everybody's been willing to take risks, to put themselves out there and to give back to the community."

Despite their use of philanthropic capital, the project required the long-term financial commitment of the City and County of San Francisco, Foster says. They were able to secure low-income housing tax credits and tax-exempt bonds in partnership with the State of California and Citibank, financed against a long-term lease payment and operating subsidies provided by the city. Perhaps most notably, the credits and bonds have allowed the team to pull the philanthropic capital back out of the project and rotate it into other affordable housing projects as the permanent financing sources come online.

#### More to Come

To date, \$22 million of an estimated \$42 million of those revolving funds have been reinvested into two lower Nob Hill hotels: the 232-unit Granada Hotel on Sutter Street and the 130-unit Hotel Diva on Geary Street, both of which will be refurbished to provide additional supportive housing for homeless residents. The arrangement plays to the strengths of all involved, Foster says.

"You can't make permanently affordable housing for people with extremely low incomes without the massive

6 years

is the time it usually takes to build a housing unit in San Francisco.

\$400,000

is the average cost of the units now being constructed with help from GSB alumni.

3 years

is the build time on their project, from conception to completion.



# A HOME FOR THE HOMELESS

When it's finished, the six-story building at 833 Bryant Street (shown here in an artist's rendering) will be San Francisco's first 100% affordable modular housing project.

funding capabilities of government, but government isn't good at moving quickly and creatively," she says. "Here, we were able to do what flexible capital does best — push on innovation and speed and take on all that strategic risk that's so hard for government to do, so we could bend the time and cost curve."

Team members hope to replicate their model — with even more speed and cost savings — in other housing projects for those experiencing homelessness. There is also the potential of improving the lives of people who aren't homeless but still struggle to afford housing in one of the world's most expensive cities.

The Bryant Street model, they believe, can be developed to make it possible for essential workers such as teachers and food servers — and others who are not part of the Bay Area's lucrative tech economy — to rent pleasant apartments close to their jobs, saving them the stress of climbing over multiple sleeping roommates each morning, or making hours-long commutes in the dark from more affordable cities.

"Construction and housing is pretty entrenched in bureaucracy and 'how it has to be,'" says Kathryn Cahill Thompson, MBA '06, CEO of Cahill Contractors, the project's general contractor. "This team was able to break the mold and use private funding to try something new. This is a really powerful tool that's getting a proving ground on this 833 Bryant project. I think it's a demonstration that's going to be repeated in the Bay Area and around the country."

Addressing such a fundamental problem while collaborating with classmates makes the rewards all the more fulfilling, Foster says. "Working with this team is another reminder of what an incredible part of the universe the GSB is. Part of what you get at the GSB is a confidence in your ability to create something and to solve problems, and the knowledge that you can reach out to all these resources you might have, call a professor, call a classmate. All that came back to me with this project."

Givens agrees. "It's been hugely fun and rewarding," she says. "The caliber of GSB alumni doing interesting things and working in the nonprofit sector in the Bay Area was really what attracted me to the school, and I knew I'd get that entrepreneurial approach to solving some of society's biggest challenges.

"People need hope that things can get better, and this project is a beacon of hope that solutions are possible. In these COVID times, we all can use that." GSB





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VOICES STANFORD BUSINESS

Areeba Kamal<sup>56</sup> Michael Hole<sup>58</sup> Matteo Maggiori<sup>60</sup> Dara Treseder<sup>62</sup>

# Voices



# Areeba Kamal, MBA '21

**AS A KID,** Areeba Kamal was aware of the sacrifices her parents were making to pay for her education, but the issue gained sharp clarity this past January when she flew home to Karachi, Pakistan, to attend her mother's funeral. There, she uncovered notebook after notebook filled with budgets.

"My dad had written down exactly how much money he had spent on bread, on fuel, down to the rupee," Kamal says. "This is how he budgeted — every single day for years and years — because we had very little money, and we had to make ends meet."

In spite of her background, Kamal dreamed of coming to the United States for higher education. After graduating from high school, she applied to dozens of American colleges in the hopes of securing enough financial aid to get the first four-year college diploma in her family. When one of the colleges came through with a full scholarship, Kamal left Pakistan for the first time at age 20 to get an undergraduate degree in computer science. Now,

#### **HOMETOWN**

Karachi, Pakistan

#### **EDUCATION**

Mount Holyoke, BA '16, Computer Science

# PROFESSIONAL EXPERIENCE

Product Manager Intern, Apple Senior Associate, Charles River Associates she's in her second year at Stanford GSB and recently accepted a full-time position in the heart of Silicon Valley as a product manager intern at Apple. Kamal hopes to explore the role of technology in building greater equity and access across the world, all while trying to reconcile her humble roots with her privilege as a Stanford MBA.

# You've described your mom as your hero. What are your earliest memories of her?

In preschool, I remember being confused why most kids' moms came to pick them up after school, while mine was at the office. I remember spending weekends

"I want to make tech products scalable and accessible, especially for historically disenfranchised groups."

SPRING 2021 VOICES

going to her office and doing my homework in a corner while she paced across a conference room, getting her words just right for the next client meeting.

She worked her way up to become one of the senior-most female executives in advertising and marketing in Pakistan, all while educating and guarding two daughters in a deeply patriarchal society. She also funneled every dime she earned into our education and told us to use our words and our voice every chance we got in a society where women are frequently belittled and silenced.

# How did your parents view the importance of education?

My mom was determined that my sister and I would attend the best schools in the city, even if she could barely afford them. Instead of choosing an underfunded public school, she found a way to put us through private schools where we could sit for the internationally credentialed examinations. But her health suffered as she worked day and night, weekdays and weekends, pouring all her income into our education instead of her own medical care.

By the time I graduated from high school, my mother was suffering from acute arthritis, diabetes, and hypertension. I was valedictorian, and I remember giving the commencement speech while she waited in the car because she couldn't climb the stairs to the auditorium. I got my diploma and accolades, then ran to the parking lot so we could go over my trophies together.

If my mother hadn't fought to put my sister and me through expensive private schools, if she hadn't sacrificed her youth and health for my future, I could never have gone to college abroad. I owe my education, my career, my entire life to her vision and foresight.

# How has her death affected your outlook on life at and after Stanford GSB?

My mom had been unwell for a long time, but I had no idea how debilitating

**Recommended Reading** 

"My homeland's story, told against the backdrop of British colonialism and American foreign policy. It highlights the strength required to carve out a life amid adversity."



The Nine Lives of Pakistan by Declan Walsh W. W. Norton & Company 2020

it would be for me when she died, how it would feel like losing a limb or forgoing a part of my brain. There are days when I second-guess every decision I've made, when I re-create the past in my head and imagine what it would have been like if I never left Pakistan, so I could have stayed close to her for longer.

That said, my mother always saw my journey as an extension of her own legacy to do difficult but meaningful things, to make the world a better, more creative, more equitable place by virtue of her life's work. She taught me how to persevere in the face of every challenge and to use my voice every chance I get. So I will keep on channeling the resilience, power, and hope she embodied. I am, after all, my mother's daughter.

# Were you aware of these sacrifices while you were growing up?

Yes. When I went back home for my mother's funeral, my sister and I found diary upon diary where my dad had written down exactly how much money he had spent on bread, on fuel, down to the rupee: ten rupees for bread, a hundred rupees for fuel, etc. This is how he budgeted — every single day for years and years — because we had very little money, and we had to make ends meet.

By the time I was in my last year of high school, it was almost impossible for my parents to continue paying for my education. I was fortunate enough to have a great high school dean, who allowed me to work part time after school to make up for a shortfall in tuition payments. I would attend class during the day, then help with administrative errands in the evenings. After graduating high school, I took up a job as a school administrator during my gap year, making \$400 a month, almost all of which went toward paying for my SATs and college application fees.

# Why did you want to come to the United States for college?

As a woman, I wanted to have more

agency over my life. In some ways, life back in Pakistan is similar to life here. When I go home, I spend a lot of time discussing politics, movies, and literature while drinking copious amounts of tea and coffee with friends — pretty much what I do on weekends at Stanford.

At the same time, life back home is deeply limiting for women. Whether it's driving by myself at night, having agency over what I wear and do with my time, determining exactly when I get married or have kids — I'd be unable to make basic choices like that for myself.

#### Was coming to the States a hard transition?

In some ways, it all felt like a fairy tale. I had worked so hard, dreamt so long, and I was overwhelmed by the possibilities and novelties before me. I remember seeing snow for the first time, witnessing fall colors, and feeling free and powerful. But I also remember calling my sister back in Pakistan and asking her to walk through the house, so I could be sure it was still intact. I often felt small and far away.

# You plan to work in the tech sector after Stanford GSB. How does your background inform your work?

Like my peers at the GSB, I grew up watching technology disrupt every aspect of life and benefiting from the opportunities it created. My journey from Karachi to Palo Alto would have been much harder without virtual college tours, WhatsApp calls across the world, and a technical undergraduate degree. As a woman from a low-income family and developing country, I get excited thinking about how the tech products that permeate our daily lives can scale more effectively across differences in demographics, geographies, internet connectivity standards, physical ability, income levels, etc. I want to spend my post-GSB career making technology products scalable and accessible, especially for historically disenfranchised groups. — Dylan Walsh



# EMILY HINE

# Michael Hole, MBA/MD '14



**MICHAEL HOLE'S IDEA** for a social service mashup seemed especially unlikely: What if his low-income clients could get tax and financial services while waiting for an appointment with their child's doctor?

But Hole (MD/MBA '14) saw the logic immediately. "Doctors ask people sensitive questions all the time, about mental health, about sex, about alcohol," says the Indiana native. "We should be asking them about how much money they make too, because we know it matters to people's health."

Income is inextricably linked to whether his patients have access to healthy food and shelter, as well as to the safety of the neighborhoods they live in. Says Hole, "Those are the social drivers of health, and I am building organizations to address those root problems."

Hole has been called a "street pediatrician." In one of his many roles at the University of Texas at Austin, he sees patients onboard Children's Health Express, a mobile medical clinic that serves families experiencing homelessness, in addition to teaching graduate courses on U.S. public policy, human-centered design, and civic entrepreneurship. With his students, he started Good Apple, a grocery delivery company that helps people suffering from food

# LOCATION

Austin, Texas

#### **EDUCATION**

BS, Spanish and Biological Sciences, Butler University, '08 MD, Stanford University School of Medicine, and MBA, Stanford GSB, '14

Pediatrics Residency, Harvard Medical School, '17

# PROFESSIONAL EXPERIENCE

Assistant Professor of
Pediatrics, Population Health
and Public Policy, University
of Texas at Austin
Cofounder & Chairman,
StreetCred
Cofounder, Main Street Relief

insecurity. Amid the COVID-19 pandemic, he launched Main Street Relief, a nation-wide volunteer corps that helps small businesses survive and move forward from economic crises.

Another of his initiatives is Street-Cred, which partners with the IRS and other community agencies to help families file taxes, maximize tax refunds, set up savings accounts, set financial goals, and build budgets, credit, and wealth—all during visits to their pediatrician's office. His role with StreetCred landed him on *Forbes* magazine's "30 Under 30" list, and the four-year-old organization has returned more than \$8.5 million to nearly 4,000 low-income families.

Hole says the work feels especially important since the birth of his first child, Evelyn, in April 2020.

# How does one become a "street pediatrician"?

People's zip code affects their health more than their genetic code does. In the clinic or hospital, I wasn't always able to see the full picture of what was affecting my patients' health — whether there was a grocery or pharmacy near their home, whether their neighborhood had clean air. Too often, my patients' families had a hard time getting to the clinic or other social services because they lacked transportation. So as a "street doctor," my team and I care for people where they live. We take our services to them, rather than assuming it's easy for them to get to us. If you want to solve a problem, get as close as you can to the people facing that problem and build the solution alongside them.

# Which raises the question: How do you get closer to people?

We travel to homeless shelters, food pantries, schools, and other places looking for the children and teens who are highest risk and hardest to reach. When you see a family of five living in a motel room with a single bed, and they've got their canned food stacked in the corner, and their

# Lingering Lessons

One of Michael Hole's most memorable courses at Stanford GSB was *Managing Difficult Conversations*: "It's amazing how those lessons continue to translate. For example, how do you tell parents about their child's terminal diagnosis? I've had to be part of those conversations many times."

SPRING 2021 VOICES

refrigerator is two-by-two-foot ... you can send them to the food pantry to get fresh produce, but where are they gonna store it? Where are they gonna cook it if they don't have an oven or a stovetop? It frames the problems a bit more. It allows you to develop deeper understanding and more empathy and to co-build smarter, more elegant solutions together with clients.

## Tell us about the moment when you first connected the ideas of pediatrics and financial services?

In 2015, a single mom came into my clinic with a newborn and a toddler and asked me if I knew of a place she could get her taxes done. The backdrop to all of this is that I'd done an internship at the federal affairs department of the American Academy of Pediatrics, where I was tasked to look at the various anti-poverty government programs to figure out which ones had the biggest bang for the buck on child poverty rates — and therefore on child health. What kept coming to the top was the earned income tax credit. So I understood that tax refunds matter to people's health, and to children's health in particular.

#### So when this single mom asked you about it ...

I referred her to a free tax-prep site in Boston. She took two buses and a train across town, with her newborn and her toddler, only to find that it was closed because the hours listed on its website were out of date. This tenacious mom went back the next week, but didn't have the right paperwork with her. She came back to my office the following week for her newborn's two-week-old visit, and waited on me for 30 minutes. She said, "Wouldn't it be nice if we could just do my taxes while I'm here?" That question sparked the idea for StreetCred.

# How has StreetCred grown and evolved since you piloted the program in 2016?

We were at nine sites in five states last

tax season. When COVID-19 struck, we adjusted and moved to mostly virtual services. But we already knew the franchise model wasn't getting us to the volume of folks we hoped to serve as quickly as we wanted, so we created an open-source toolkit and built a coalition of medical and financial services organizations across the U.S. that work together to share best practices as they try to integrate financial services into health systems. That coalition is now 38 organizations in 23 states and Washington, D.C. With virtual services available now, I am interested to see how this might allow us to grow more quickly and reach America's rural communities, like where I grew up.

# What is the biggest factor that would convince patients to seek financial advice in medical offices, clinics, and hospitals?

Trust. A pediatrician's office is a trusted, frequented place. When you have kids, you're going back and forth regularly, so we have these very regular touch points. And you have your doctor telling you that money matters to health and that poverty makes you sick. We can write a prescription for financial coaching, tax refunds, or a savings account just like any other prescription, because we know they make people healthier.

## Your basic assumption is that financial help and services are available, but not enough people have the knowledge or wherewithal to use them?

That's right. About one in every five families eligible for the earned income tax credit is not taking advantage of it every year. That's because taxes can be confusing and intimidating, or maybe because an untrained family friend who does their taxes misses a piece of information they need to claim a refund. Also, many forprofit tax-prep companies charge hundreds of dollars for tax prep and skim money off the top of people's refunds. They also make errors, causing delays in refunds or worse. There's a whole host of reasons why people are not getting the money they're depending on to make ends meet.

# Your LinkedIn profile photo shows an exultant little kid in flying goggles and cardboard wings. Explain.

Children dream big, and they're optimistic. I think we could all learn from that, especially nowadays. And it's important, especially as an entrepreneur, to learn like a child — diving in full of curiosity, trying new things, stumbling, and learning fast from mistakes. My life's work is aimed at making children's lives better. I'm a pediatrician, a professor, and an entrepreneur because I believe that every kid, if you give them the support they need to grow up healthy and get a good education, can reach their potential, especially in the United States. Zip code and your parents' income and the kind of house you live in should not determine what you can achieve in your life.

You've helped launch other programs. One delivers healthy food to low-income families. Another helps small business owners affected by the pandemic navigate federal aid . You're advising a group of students connecting seniors with teenagers through an online platform to combat loneliness. And you're launching a scholarship fund for babies born into poverty. Are you ever intimidated by the scope of those problems?

I'm aware these are huge, huge issues. Everything my teams and I create is with an eye toward scaling up. But I'm driven by one of the lessons from Stanford GSB, or I should say from Nike: Just do it. Build coalitions, believe in underdogs, and stay in the arena. If you make one person's life better, that's wonderful. And if you're able to expand impact to 100 lives, that's even better. And if it's a model that can be scaled across the country, like StreetCred or Main Street Relief, then gosh, what a privilege to serve even more people in need. We're all in this together.

- Martin J. Smith



"To solve a problem, get as close as you can to the people facing that problem and build the solution alongside them."

# COURTESY OF MATTEO MAGGIORI

# Matteo Maggiori, associate professor of finance

**IN LATE FEBRUARY 2020,** Matteo Maggiori had just finished giving a talk in Frankfurt, Germany. He was at the airport, ready to board a plane to Turin, Italy, to accept the Carlo Alberto Medal, which is awarded biennially to an Italian economist under 40 for their "outstanding research contributions."

At the Turin event, he was slated to give a lecture titled "The International Monetary System: New Theory and Evidence." He planned to describe the ways in which unexpected crises were capable of fomenting shifts in the structure of the global financial system.

At the airport that day, talking on the phone with his wife, he realized that a large crisis of a different nature was at hand: COVID-19 cases were surging in parts of Europe. He canceled his trip to Turin and purchased a ticket back to his home in the United States. A few hours after his plane took off, cities throughout northern Italy canceled all public events.

Not long thereafter, the global economy shuddered and stalled. It was the third time in 15 years that Maggiori, an associate professor of finance at Stanford GSB, had observed such widespread economic instability. Prior to the coronavirus pandemic, the European Union was hammered by a sovereign debt crisis, and before that came the global crash of 2007 — the same year that Maggiori began his PhD studies at Berkeley.

#### **HOMETOWN**

Rome

#### **EDUCATION**

PhD in Finance, Haas School of Business, UC Berkeley, '12 MSc in Economics and Finance, Warwick University, '05 BSc (laurea triennale) in Economics, Luiss Guido Carli, '04

#### ACADEMIC AREA

Finance

rare," he says, "but there is a meaningful difference between extremely rare and impossible; we might not be spending enough time as a profession thinking about this type of event ahead of time."

The 10-Year-Old Economist
Crises first drew Maggiori to economics.

"These crises may be extremely

Crises first drew Maggiori to economics. He was 10 years old, living in Rome, the city of his birth, when he was captivated by the European Exchange Rate Mechanism crisis. "That had an extraordinary effect on Italy, and on the daily lives of the people who lived there," he says. "Because of that, it attracted my attention."

After earning undergraduate and master's degrees in economics, Maggiori took a job at J.P. Morgan, where he traded currencies and interest rates. He spent only two years in the private sector before he decided to return to school for his doctorate, but the brief professional stint "profoundly" influenced the trajectory of his research.

He recognized a striking difference between the ways in which investors analyzed exchange rates and the ways in which traditional, mainstream academic models portrayed them. He went on to develop a model of his own that did a better job stitching both worlds — theory and practice — together.

"Theoretical modeling helps because it really forces you to clarify what you have to believe, what you need to start with as assumptions, and how that gets to particular outcomes," Maggiori says. "If a model is successful — and it's only successful as far as other people find it useful — then it shows us a new way to think about a problem."

#### New Answers with Novel Data

In parallel with his theoretical modeling,



"I'm hardwired to select things that I truly want to work on, that interest me, and I am OK if they might be different from what I have done in the past." SPRING 2021 VOICES

Maggiori has undertaken several groundbreaking empirical projects. "There are many big questions that remain unexplored because of data issues," he says. "When I start to get the sense that the right kind of data is becoming available to take a serious stab at these questions, then I get excited."

With longtime collaborators Brent Neiman at the University of Chicago and Jesse Schreger at Columbia University, for example, Maggiori has assembled a new set of extremely detailed data on securities holdings — and, consequently, financial risk — around the world. The results have recalibrated our understanding of where global investments actually end up.

While official reports from the U.S. Treasury in 2017 calculated that U.S. investors held \$160 billion in Chinese stocks, Maggiori and his coauthors, by incorporating holdings in offshore shell companies, found that the true number was closer to \$700 billion.

Similar discrepancies are widespread: Europeans invest heavily in companies registered in the Netherlands and Luxembourg, but Maggiori and his coauthors show that much of the investment is actually in subsidiaries of multinationals from other countries, such as Brazil and Russia.

This work is at the core of the Global Capital Allocation Project, an ongoing investigation into the complex and opaque pattern of capital flows around the world.

"Matteo's recent research in this area provides the best estimates to date of how money moves around the world in capital markets," says Stanford GSB Dean Jonathan Levin. "The results improve in many ways on official measurements."

Another one of Maggiori's projects took advantage of a quirk of British and Singaporean housing markets to place a more reliable number on how people, in practice, discount over extremely long periods of time.

By essentially comparing two types of home ownership — a freehold or permanent ownership to a leasehold with a finite maturity (sometimes 100 years or more) — Maggiori and coauthors Stefano Giglio of Yale and Johannes Stroebel of NYU were able to tease out how people think about extremely long-term risks and investments.

These findings are an important input into debates that arise over issues like climate change, in which present-day investment often doesn't provide benefits until decades in the future.

These strands of research show just how wide Maggiori's research contributions and interest have ranged. He bases his pursuits on a central criterion: curiosity.

"I'm hardwired to select things that I truly *want* to work on, that interest me, and I am OK if they might be different from what I have done in the past," he says.

He describes his research process as "extremely nonlinear." An idea will stick in his head and remain there for years until, finally, "something clicks and I figure out a way to tackle it; this, of course, happens rarely."

He still puzzles over questions from his time at J.P. Morgan, more than 15 years ago, that he hasn't found a way to adequately answer. But maybe someday: "You just never know if or when it will happen."

#### **Expanding the Reach of Economics**

In November 2020, the American Finance Association awarded Maggiori the Fischer Black Prize, which is given biennially to "an outstanding financial economist" under the age of 40. Maggiori was pleasantly surprised, but not only from a sense of personal validation.

"I felt that this was in part a recognition of international macrofinance as a field," he says. "It was recognition given to me, but it would not have been possible without all of the amazing research that's being done by young people, all the

work that's being done by my coauthors and others in the field."

Maggiori himself has played no small part in elevating the field's profile. "Matteo is completely committed as a real builder and leader in the international macro and finance field," says Neiman. "From organizing conferences for junior colleagues to allowing PhD students from institutions all over the country to attend his online course, he shows that he cares not only about the intellectual progress in the field but also the improvement of its operating norms and accessibility."

As his career progresses and standing rises, Maggiori has begun to more energetically address the question of how his work filters into the world beyond academia.

"There is a big debate out there about the role of economists in society, particularly research economists, and I struggle with this myself," he says. "Producing good research requires a tremendous amount of effort and time, but if we don't put our best foot forward publicly, it diminishes the impact not only of one's own research, but also of how much good we might do collectively."

This issue takes on particular salience given the backdrop of Maggiori's career: his childhood observing Italian families stung by economic hardship, his matriculation at Berkeley on the cusp of the global financial crisis, and the occurrence of two more crises in relatively quick succession. With the experience of these events embedded in his work and outlook, he hopes that insights from his research generate helpful action in the world of policy.

"Intellectually, I hope to understand how events like these international crises occur, but I also want to understand how we might best respond to them," he says. "Economics, as a profession, can make scientific advances to meet these challenges and to understand how to improve outcomes. I'd like to be a small part of that effort." -D.W.

# Follow the Money

The Global Capital Allocation Project, created by Maggiori and others, pulls back the curtain on the methods and impact of secretive offshore monetary holdings. Its open website is a cornucopia of teaching material, videos, raw data, and graphics. Find it at **stanford.io/GlobalCapital**.



WAIT, THERE'S MORE
To read the online version
of this article about Matteo
Maggiori, go to
stanford.io/Matteo.

# ANDREW PEF

# Dara Treseder, MBA '14



WHEN DARA TRESEDER WAS GROWING UP in Ibadan, Nigeria, she never dreamed that she'd become a senior executive for a company worth billions. But after moving to the United States to attend Harvard University, where she graduated with honors, Treseder went on to land top marketing roles at a succession of powerful corporations, including General Electric, Apple, and Goldman Sachs. Most recently, she made headlines when Peloton named her its marketing chief in August.

The influence of the world's largest interactive fitness company has grown exponentially during the COVID-19 crisis, when gyms have largely been closed and the public has turned to Peloton's virtual workout sessions for motivation. With more than 4 million members, Beyoncé and Miley Cyrus among them, Peloton has given socially isolated people a way to find community during the pandemic. The brand is now such a cultural touchstone that *Saturday Night Live* has deemed it spoof-worthy.

In addition to Treseder's landmark role at Peloton, she is a board director at Pacific Gas and Electric Company and the Public Health Institute. She has also accumulated a series of honors, including being named one of *Adweek*'s women trailblazers,

#### LOCATION

San Francisco Bay Area

#### EDUCATION

MBA, Stanford GSB, '14 AB in African American Studies, Harvard University, '10

# PROFESSIONAL EXPERIENCE

SVP, Head of Global Marketing and Communications, Peloton Chief Marketing & Communications Officer, Carbon CMO of GE Business Innovations & GE Ventures Business Insider's top 25 most innovative CMOs, and a member of the Forbes list of 50 marketing chiefs who are "redefining the role and shaping the future."

An immigrant, wife, mother, and Black woman, Treseder's path to success has not been without difficulty. It required sacrifice from her family and a steadfast belief in herself in a society that has historically devalued women of color, she says. Treseder appreciates that Peloton has committed to being an antiracist company and that her Stanford education gave her the tools to successfully navigate the corporate sector.

"Even in my wildest dreams, I didn't imagine I would be where I am, doing what I'm doing," she says.

# You moved to the United States to attend Harvard. How does being an immigrant inform your career and your success?

My mother was very inspirational; she emboldened me to dream big. She always encouraged me to not just accept the world as it is but to think about the world as it should be and allow myself to be an architect of that destiny. That was inspirational to me, because I felt my family had done so much to get me to the United States. My grandfather literally emptied his bank account so that I could go to college.

There's a Yoruba saying that goes, "Anybody who knows how to think knows how to give things." Looking back, I'm full of gratitude for my parents, my grandparents, and my family for investing so much in me to get here to the U.S. I wanted to make sure I achieved something and made them proud of their investment in me. But once I got to the United States, it became about more than my family. It became about what it meant as a Black woman, because people look at me and they have no idea who I am or where I'm from. I'm just Black, and that's the reality of being Black in America.

"I am empowered to bring my full self to my job. I'm able to bring everything that I have to offer, which is wonderful, because I know, as a Black woman, that people don't always get those opportunities." SPRING 2021 VOICES

# Black women are underrepresented in senior management roles. Did that discourage you?

I could see that Black people, especially Black women, were not taking up those spaces. I remember Ursula Burns [former CEO of Xerox] had been the only Black female CEO of a major Fortune 500 company. I didn't know about any others until recently, when Rosalind Brewer was named CEO of Walgreens. Clearly, that's not enough; we need more. So, for me, it became, How can I be a part of the change? How can I help make this a reality where Black women are in positions of power and are able to lift up not just ourselves and our families but our communities? How can we inspire the next generation to build a better world?

# You achieved a career milestone when Peloton named you head of global marketing and communications. How did you feel about getting this opportunity?

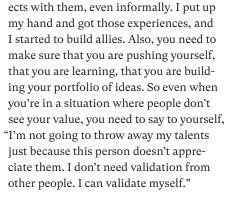
It's been beyond an incredible experience because people here really care about living up to our values. Before I joined Peloton, they had come out with a pledge to be an antiracist organization, and that was heartening to me. I also care a lot about physical and mental health, and we're motivating millions of people around the world to stay centered, active, and connected. It's a joy, because I am empowered to bring my full self to my job. I'm able to bring everything that I have to offer, which is wonderful, because I know, as a Black woman, that people don't always get those opportunities.

# What is your advice to other Black women who want to succeed in corporate America but feel overlooked or undervalued?

The first thing I would say is to seek out opportunities that create other opportunities. When I was starting out, I knew I had what it took, but I was undervalued. I realized that there were coworkers who valued me and that I could work on proj-

**Recommended Reading** 

"It contains central truths that helped me understand the impact colonialism had on us Africans. It also helped me learn from an early age the destructive nature of pride."



# What did you learn from your experiences at Carbon and GE?

I had some remarkable experiences at Carbon, where I led global marketing and communications. Working at a startup, I had to help build the brand and generate interest. That was amazing because I got to help take the company to a different level. And when I joined GE, I got to learn what it was like to work on bigscale projects for a large organization, in a CMO capacity. I'm drawing on both of those experiences at Peloton.

## Peloton recently announced a partnership with Beyoncé and digital memberships for HBCU students. What has it been like to lead a marketing team during such collaborations?

It's exciting to embark on game-changing partnerships. The Beyoncé collaboration was exciting because she'd been a Peloton member for years, so it was authentic and not just kind of a silly celebrity endorsement. It was also a powerful way to celebrate music by a Black artist and bring that culture into the intersection of technology and fitness.

With the HBCU partnerships, we gave digital memberships to students at 10 HBCUs. For me, that was powerful thing, because I had majored in African American studies at Harvard, and I knew that Black people have not historically felt comfortable in spaces around physical health and mental health. Some of that has to do with the history of how Black

bodies were abused and denigrated. So being part of an effort to increase HBCU students' access to Peloton felt full circle. It felt monumental.

#### Why did you apply to Stanford GSB?

I knew that, at Stanford, I would be developing not only the hard business skills but also the soft business skills. I would be developing a more comprehensive toolkit. I would have a better understanding of how to lead. I would have a better understanding of why I need to use different types of leadership approaches and tools, and then I'd have a better understanding of what I would need to do as a business leader. I knew that Stanford would allow me to develop more holistically.

# What lessons from Stanford GSB have you applied at Peloton and other companies?

The GSB helped me see that there's a difference between how you see yourself, how other people see you, and how you think other people see you. Through the *Interpersonal Dynamics* course at the GSB, I really got to understand how people saw me. I'm not going to lie — some of it was really painful, because it was rooted in what I would call racial bias. But it helped me see how I could go beyond that, how I could rise above that, and how I could fight within that. That was deeply powerful for me. I also learned how other people saw me in terms of being a leader. I realized I had blind spots, and I still work on them daily.

The second thing that I got from the GSB is what I call business literacy. As a business leader, I feel that I can engage with anyone, whether it's someone in the supply chain, operations, or finance. And the third thing is that I consider myself a lifelong learner. I'm still reading a lot. I'm still studying, and I think the MBA program provided that structure that allowed me to unlock that aspect of myself, so I see myself first and foremost as a business leader. I have that confidence that I didn't have before. — *Nadra Nittle* 



Things Fall Apart by Chinua Achebe Penguin Books 1958







# What's your

# IMPACT?

Since 1987 nearly 1,600 alumni have conducted over 950 pro bono management consulting projects with nonprofit organizations through the Stanford Alumni Consulting Team (ACT). Between now and 2025, we hope to complete over 150 additional projects, including 50 for organizations focused on racial equity. Whether serving alongside other alumni on project teams, encouraging nonprofits to apply for consulting services, or bringing Stanford ACT to their local communities, GSB alumni are changing the world, one project at a time.

To learn more, visit stanford.io/alumni-act or email info@stanfordact.org

# STANFORD ALUMNI CONSULTING TEAM

Changing the world, one project at a time



# Jacqueline Novogratz, MBA '91



wrote my application to Stanford GSB in 1988 on a Wang word processor in Kigali, Rwanda, where I had cofounded the nation's first microfinance bank with a group of women leaders. I believed an MBA would provide me with the skills and tools to use the power of business to solve the biggest problems of poverty.

I remember driving across the Golden Gate Bridge, belting out Tracy Chapman's song "Revolution," my head full of dreams about the people I would meet, the knowledge I would gain. The GSB delivered on its promise to connect me to amazing role models and some of my closest friends. I'm also grateful to have gained the robust tools that capitalism offers.

On the other hand, I struggled with principles taught as "truths." I wondered what it would take to apply those tools in service of people who were almost definitionally excluded. And so I graduated with more questions than answers. Meanwhile, the world around me grew more certain that markets were the answer to, well, everything.

In the 30 years since, the world has changed fundamentally. The forprofit and nonprofit sectors are converging. And though we've become more aware of one another across the globe, so too have we grown more unequal, divided, and divisive.

My worldview has changed. If I crossed that beautiful bridge with a

# IMPACT

Jacqueline Novogratz, MBA '91, is founder and CEO of Acumen. Acumen and its funds have brought critical services to hundreds of millions of low-income people. Her second book, Manifesto for a Moral Revolution, was released in 2020.

headful of dreams, I stand today deeply aware of how crushingly difficult it can be to change systems. I have had to learn to fight bureaucracy, corruption, and complacency — skills I hadn't considered at business school. If I left the GSB thinking I'd conquer the world in a decade, I understand now that it can take that much time simply to *begin* building new markets for those who've been excluded.

And though today I have hard-earned wrinkles to remind me of the years of perseverance, so too do I still have a head full of dreams. I founded Acumen in 2001 to change the way the world tackles poverty, starting with "patient capital" — long-term investment backed by philanthropy to enable intrepid entrepreneurs. Because of those investments, hundreds of millions of low-income people are now more able to solve their own problems, and I am more idealistic today because I know that change is possible.

Finally, I have come to see that the opposite of poverty is not wealth, but dignity. And building a world that puts human dignity at the center of our systems requires reimagining and rebuilding systems and institutions.

The GSB provided me extraordinary tools with enormous power to imagine systems and then go out and build them. Those skills are desperately needed today, not just in the impact sector but in all of our businesses. We can solve urgent and critical problems for the many, not merely generate more profits for the few. And just as the GSB has the chance and moral obligation to renew its mission, so do each of us.

Thirty years after my experience at Stanford GSB, I keep asking myself: What will a generation 100 years from now say about us? My hope is that they do not say we were blind. But that at least, we tried. **GSB** 

And though today I have hard-earned wrinkles to remind me of the years of perseverance, so too do I still have a head full of dreams.

<sup>14</sup>Harold Weston, Shell Companies, 1 Beyoncé, Kenyan Farmers, Due Dilig Golden State Warriors, <sup>11</sup>Political Ho <sup>21</sup>Reckless Debt, Macadamia Nuts, C Corporate Zombies, HBCUs, Invento Net Zero, <sup>56</sup>Counting Rupees, Wome Stripe, Diaper Engineering, Support UNICEF, The Activist's Dilemma, Cl The 10-Year-old Economist, Acceler Modular Buildings, Emissions Redu Stanford Seed, <sup>23</sup>The Capitol Siege, ( Exceptional Relationships, Bonus P 37Bankability, Finance 207, Low-Rai Retired Jerseys, Citizens United, Car Opus 12, 44Solar Lanterns, Executive Foreclosure's Fallout, Racial Equity The Cash-Flow Queen, Peleton, Los 35The Other Georgia, Fischer Black I Diverse Leadership, Touchy Feely, N Social Service Mashup, Hotel Diva, <sup>46</sup>Gender Pay Gap, 20,000 Boos, Cos