# Six Years of Impact BEHAVIOR CHANGE FOR GOOD INITIATIVE



# LETTER FROM KATY AND ANGELA

We founded the Behavior Change for Good Initiative in 2017 with an audacious goal: to accelerate the discovery of new tactics that could be used to promote sustainable behavior change at scale. We're thrilled to share the results of our first six years of work towards this objective.

In our initiative's first six years, we developed and tested a new paradigm for conducting team behavioral science research at scale—the megastudy. A "megastudy" is a massive field experiment in which many different interventions are tested synchronously in one large sample using a common, objectively measured outcome. In 2021, we published a major paper in <u>Nature</u> introducing this methodology for studying new ways of changing behavior, and we applied this method to the challenge of boosting gym attendance. Since then, we've run megastudies on improving students' grades and encouraging vaccination during the COVID-19 pandemic, leading to multiple publications in the prestigious *Proceedings of the National Academy of Sciences*. We've also run a number of high impact field experiments on behavior change, including a study that led to 8% more

volunteering by crisis counselors at a national suicide prevention network (published in the *Journal of Applied Psychology*) and a study conducted in partnership with the city of Philadelphia that involved designing, implementing, and evaluating a city-wide COVID vaccine lottery (published in *Nature Human Behavior*). With more recently launched megastudies, we're poised to make significant contributions to knowledge about how to promote emergency savings, improve elementary school students' engagement with math, and boost college student retention over the next several years.

Our work has been covered by major media outlets including *The New York Times, CNN, The Washington Post,* and *NPR.* It has also informed our award-winning teaching at Penn as well as advice we've offered to the White House, state and city leaders, in Congressional testimony, and to organizations like Walmart, CVS Health, WW, Zearn, Crisis Text Line, and 24 Hour Fitness.

We couldn't have made such strides toward our ambitious goals to advance science and share new knowledge widely without the ingenuity and collaborative spirit of our interdisciplinary scientific team, the dedication of our staff, the commitment of our organizational partners, and the generosity of our funders. We're tremendously grateful for what we've been able to accomplish together in the last six years and eager to find new ways to use behavioral science for good in the years ahead.

Sincerely,

**PROFESSORS KATY MILKMAN AND ANGELA DUCKWORTH** Co-Directors of the Behavior Change for Good Initiative

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# **OVERVIEW**

## WHAT DO WE DO?

The Behavior Change for Good Initiative (BCFG) unites a world-class, interdisciplinary team of academic experts in behavioral science with leading organizational partners to help advance the science and practice of behavior change. We conduct megastudies—massive random-assignment A/B tests—to identify what interventions work at scale to change behavior. A megastudy simultaneously tests many different ideas that members of our Scientific Team propose could change a valued target behavior. Our novel approach to research gives us a way of determining which interventions designed to change behavior work best overall, what works best for whom, and how to most effectively use behavioral science to transform people's lives for the better.

## WHAT'S OUR MISSION?

- 1. Identify actionable and scalable ways to improve people's health, financial security, and educational outcomes.
- 2. Build bridges between different academic disciplines to advance the science of lasting behavior change.
- 3. Disseminate the insights we generate widely for use in future research and in practice.

## WHERE HAS OUR RESEARCH FOCUSED TO DATE?

- Health (promoting exercise, crisis counseling, and vaccination)
- Finance (promoting emergency savings)
- Education (promoting academic achievement)

## WHO IS THE BCFG SCIENTIFIC TEAM?

BCFG's team unites over 170 world-renowned, interdisciplinary scientists to advance the science of behavior change. BCFG Team Scientists are experts in economics, psychology, sociology, medicine, computer science, neuroscience, law, management, and marketing.



## **BCFG TEAM SCIENTISTS BY THE NUMBERS**

171 BRILLIANT TEAM SCIENTISTS

### 2 NOBEL PRIZE WINNERS

# 4

MACARTHUR GENIUS AWARD WINNERS

20 TED TALKERS WITH OVER 1M VIEWS EACH

15 AUTHORS OF NEW YORK TIMES OR WALL STREET JOURNAL BEST-SELLERS

### 14 MEMBERS OF THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE





**66** There are many good ideas that behavioral scientists have identified in the lab that are relevant to the world, but which work to promote change? That is a question that the Behavior Change for Good Initiative is doing an excellent job answering."

**BCFG Team Scientist Max Bazerman** 

Jesse Isidor Straus Professor of Business Administration, Harvard Business School



**66** It's challenging to study long-term behavior change in consequential real world settings. I commend the Behavior Change for Good Initiative for the important work they've done to make inroads in this arena."

**BCFG Team Scientist Wendy Wood** Provost Professor of Psychology and Business University of Southern California



**66** There are many important differences between the highly educated individuals disproportionately studied in traditional lab settings and the populations that real policies will affect. By facilitating largescale experimentation in the real world, BCFG is leading the way in conducting policy-relevant research."

BCFG Team Scientist Neil Lewis. Jr. Assistant Professor of Communication and Social Behavior, Cornell University

### **HOW MUCH FUNDING HAS BCFG RAISED?**

S10+ **MILLION RAISED** 

## **HOW VISIBLE IS BCFG TO THE PUBLIC?**

8.000+NEWSLETTER SUBSCRIBERS

> 7,500+ TWITTER FOLLOWERS

in 2.000 +LINKEDIN FOLLOWERS

1,500+ YOUTUBE CHANNEL **SUBSCRIBERS** 

45 TEAM SCIENTISTS FEATURED ON OUR CHANNEL

VIDEOS



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# OUR MEGASTUDY APPROACH

We've pioneered a radical new approach to conducting behavioral science research. A "megastudy" is a team science approach to research in which different collaborators develop many, unique interventions targeting a common outcome that are simultaneously tested in the field. Megastudies allow researchers to determine which interventions work most and least effectively at scale.



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## WHAT ARE THE BENEFITS OF MEGASTUDIES?



#### THEY POOL THEORETICALLY DISTINCT INTERVENTIONS, BUILDING BRIDGES ACROSS DISCIPLINES. Megastudies

present an opportunity for interdisciplinary scientists to launch their interventions in parallel, learning from each other through collaboration to solve a single problem.



### THEY GENERATE APPLES-TO-APPLES COMPARISONS OF INTERVENTION

**EFFICACY.** Each intervention in a megastudy is tested over the same timeframe on the same population. Random assignment to interventions allows for apples-to-apples comparisons of the efficacy of each idea.



#### THEY ACCELERATE THE PACE OF

**DISCOVERY.** By launching numerous, tightly-controlled experiments simultaneously, megastudies speed up the pace of science.

### THEY FACILITATE THE PUBLICATION OF

**NULL RESULTS.** The megastudy approach ensures that all interventions tested are published, even those that produce null results. Understanding what doesn't show promise as a means of changing behavior in a given field setting is just as important as understanding what does.



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#### THEY MOVE BEYOND ONE-SIZE-FITS-

**ALL SOLUTIONS.** Megastudies make it possible to determine which interventions work best for whom, not just what works best on average. This allows us to move beyond offering one-size-fits-all prescriptions to policymakers.

## WHERE CAN YOU LEARN MORE ABOUT MEGASTUDIES?

# **Our flagship article introducing megastudies:** Milkman, K.L. et al. (2021).

Megastudies Improve the Impact of Applied Behavioural Science. Nature. Nature.

#### Our megastudy guide:

Duckworth, A.L. and K.L. Milkman (2022).

<u>A Guide to Megastudies.</u> PNAS Nexus.

**Coverage of our unique approach to science in** *The Philadelphia Citizen:* 

**Changing Behavior... for Good.** 

#### A Freakonomics podcast episode:

**Could Solving This One Problem Solve All the Others?** 



Megastudies provide an incredible opportunity to capitalize on advances in machine learning to identify which behavioral interventions change real-world outcomes for different types of people. This provides the promise of implementing interventions with precision."

#### **BCFG Team Scientist Rahul Ladhania**

(and former BCFG post-doctoral scholar), Assistant Professor of Health Informatics, Health Management and Policy, University of Michigan School of Public Health

# BCFG'S RESEARCH

# ENCOURAGING EXERCISE: A MEGASTUDY WITH 24 HOUR FITNESS

Milkman, K.L., D. Gromet, H. Ho, J.S. Kay, T.W. Lee, P. Pandiloski, Y. Park, A. Rai, M. Bazerman, J. Beshears, L. Bonacorsi, C. Camerer, E. Chang, G. Chapman, R. Cialdini, H. Dai, L. Eskreis-Winkler, A. Fishbach, J.J. Gross, S. Horn, A. Hubbard, S.J. Jones, D. Karlan, T. Kautz, E. Kirgios, J. Klusowski, A. Kristal, R. Ladhania, G. Loewenstein, J. Ludwig, B. Mellers, S. Mullainathan, S. Saccardo, J. Spiess, G. Suri, J.H. Talloen, J. Taxer, Y. Trope, L. Ungar, K.G. Volpp, A. Whillans, J. Zinman, and A.L. Duckworth (2021)

nature

Megastudies Improve the Impact of Applied Behavioral Science Nature

### WHY ENCOURAGE EXERCISE?

**51%** of American adults exercise less frequently than recommended.

9% of global premature deaths are attributable to inadequate physical activity.



### HOW WAS OUR MEGASTUDY OF EXERCISE DESIGNED?

We tested **54** variations of a 4-week digital program designed by 30 Team Scientists to encourage exercise among gym members.

## EACH DIGITAL PROGRAM DESIGNED TO ENCOURAGE EXERCISE INCLUDED:

An online registration experience during which participants planned the timing of their weekly gym visits, received encouragement, and learned about incentives to exercise

Text message reminders 30 minutes before each planned workout

Text messages and emails throughout the 4-week program to encourage exercise

Points for each gym visit made during the program (redeemable for an Amazon gift card)

### WHO WERE THE PARTICIPANTS?

61,293 gym members of 24 Hour Fitness (one of the largest fitness chains in the U.S.)



**Every program** except one directionally increased weekly gym visits compared to a placebo control program during the 4-week intervention.

23 programs significantly increased weekly gym visits.

**5** interventions **significantly outperformed** a "best practice" intervention designed with insights from previous research:

	THE 5 TOP PERFORMING INTERVENTIONS	INCREASED WEEKLY GYM VISITS BY
	Offering a micro-incentive (worth 9 cents) for returning to the gym after a missed workout	27%
	Offering a 10x larger than usual monetary incentive (worth \$1.75) per gym visit	25%
	Communicating that an increasing majority of Americans exercise at least three times per week	24%
	Offering a micro-incentive (worth 16 cents) for returning to the gym after a missed workout	23%
	Allowing participants to choose whether they would earn points for going to the gym or lose points for skipping the gym	19%
	* note that due to the winner's curse, th are likely upwardly biased	ese estimates

### ENCOURAGING EXERCISE: A MEGASTUDY WITH 24 HOUR FITNESS



<sup>66</sup> Drawing on my years of studying and applying persuasion science, I helped design a treatment condition that called attention to the rising rates of exercise among Americans. It was exciting to be part of this megastudy effort."

**BCFG Team Scientist Robert Cialdini** Regents' Professor Emeritus of Psychology and Marketing, Arizona State University

Public health experts, behavioral science practitioners, and laypeople were all unable to reliably predict the absolute or relative effectiveness of the programs tested, demonstrating the value of megastudies for informing policy.

# WHERE CAN YOU LEARN MORE ABOUT OUR FINDINGS?

A Penny for Your Squats? (2021), The New York Times

These Are the Best Ways to up Your Workout Habits, According to Study of Over 60,000 People (2021), CNN Health

**Study Reveals Keys to Developing Workout Habits** (2021), *NBC News* 

How 'Megastudies' Are Changing Behavioural Science (2021), Nature Podcast



### WHAT ADDITIONAL PUBLICATIONS RESULTED FROM THIS MEGASTUDY?

Kirgios, et al. (2020). <u>Teaching Temptation</u> <u>Bundling to Boost Exercise: A Field Experiment.</u> <u>Organizational Behavior and Human Decision</u> <u>Processes.</u> Organizational Behavior and Human Decision Processes.

Kirgios et al. (2020). Forgoing Earned Incentives to Signal Pure Motives. The Proceedings of the National Academy of Sciences. The Proceedings of the National Academy of Sciences. Chang, Kirgios, and Smith (2021). Large-Scale Field Experiment Shows Null Effects of Team Demographic Diversity on Outsiders' Willingness to Support the Team. Journal of Experimental Social Psychology. Journal of Experimental Social Psychology.



• We were pleased to partner with BCFG on the StepUp Program and to have the opportunity to use insights from leading behavioral scientists to help our club members change their lives through fitness."

**24 Hour Fitness** 

# INCREASING VACCINE UPTAKE AT DOCTORS' APPOINTMENTS

Milkman, K.L., M.S. Patel, L. Gandhi, H.N. Graci, D.M. Gromet, H. Ho, J.S. Kay, T.W. Lee, M. Akinola, J. Beshears, J.E. Bogard, A. Buttenheim, C.F. Chabris, G.B. Chapman, J.J. Choi, H. Dai, C.R. Fox, A. Goren, M.D. Hilchey, J. Hmurovic, L.K. John, D. Karlan, M. Kim, D. Laibson, C. Lamberton, B.C. Madrian, M.N. Meyer, M. Modanu, J. Nam, T. Rogers, R. Rondina, S. Saccardo, M. Shermohammed, D. Soman, J. Sparks, C. Warren, M. Weber, R. Berman, C.N. Evans, C.K. Snider, E. Tsukayama, C. Van den Bulte, K.G. Volpp, and A.L. Duckworth (2021)



#### A Megastudy of Text-Based Nudges Encouraging Patients to Get Vaccinated at an Upcoming Doctor's Appointment Proceedings of the National Academy of Sciences

### WHY STUDY VACCINATION?

In Fall 2020, the COVID-19 vaccine was not yet available, but its rollout was imminent. We saw an opportunity: by identifying effective strategies for encouraging flu vaccination, we could be ready with tools for encouraging COVID-19 vaccines when they became available.



### HOW WAS THE MEGASTUDY DESIGNED?

We tested 19 different SMS (text) messages designed by 26 scientists to boost flu vaccination rates among primary care patients.

The behavioral science-informed SMS messages encouraged patients to get their flu shot at their upcoming primary care appointment and were sent up to three days in advance of their appointment.

### WHAT ADDITIONAL PUBLICATIONS RESULTED FROM THIS MEGASTUDY?

Patel, et al. (2022). <u>A Randomized Trial of Behavioral Nudges</u> Delivered Through Text Messages to Increase Influenza Vaccination <u>Among Patients With an Upcoming Primary Care Visit.</u> *American Journal of Health Promotion.* 

Buttenheim, et al. (2022). Effects of Ownership Text Message Wording and Reminders on Receipt of an Influenza Vaccination. JAMA Network Open.

### WHO WERE THE PARTICIPANTS?

47,306 primary care patients from two large regional health systems (Penn Medicine and Geisinger)

### WHAT DID WE LEARN?

All 19 messages directionally **increased flu shot rates** compared to usual care (6 messages significantly increased flu shot uptake).

Our text messages led to a 5% boost in flu vaccination uptake, on average.

The top-performing message communicated a vaccine was "reserved for you" and increased vaccination rates by 11% (6.7% if adjusted for the winner's curse).

# INCREASING VACCINATION AT WALMART PHARMACIES

Milkman, K.L., L. Gandhi, M.S. Patel, H.N. Graci, D.M. Gromet, H. Ho, J.S. Kay, T.W. Lee, J. Rothschild, J.E. Bogard, I. Brody, C.F. Chabris, E. Chang, G.B. Chapman, J.E. Dannals, N.J. Goldstein, A. Goren, H. Hershfield, A. Hirsch, J. Hmurovic, S. Horn, D.S. Karlan, A.S. Kristal, C. Lamberton, M.N. Meyer, A.H. Oakes, M.E. Schweitzer, M. Shermohammed, J. Talloen, C. Warren, A. Whillans, K.N. Yadav, J.J. Zlatev, R. Berman, C.N. Evans, R. Ladhania, J. Ludwig, N. Mazar, S. Mullainathan, C.K. Snider, J. Spiess, E. Tsukayama, L. Ungar, C. Van den Bulte, K.G. Volpp, and A.L. Duckworth (2022)



S Proceedings of the National Academy of Sciences of the United States of America

### A 680,000-Person Megastudy of Nudges to Encourage Vaccination in Pharmacies

Proceedings of the National Academy of Sciences

### WHO WERE THE PARTICIPANTS? 689,693 Walmart pharmacy patients



### HOW WAS THE MEGASTUDY DESIGNED?

We tested 22 different SMS (text) messages designed by 27 scientists to encourage Walmart pharmacy patients to get their flu shot at a Walmart pharmacy.

The messages included appeals to humor, social norms, communal responsibility, and more, and they were largely distinct from those tested in the primary care setting.



## WHAT DID WE LEARN?

All 22 reminder messages significantly increased vaccination rates by an average of 7%.

The top-performing message conveyed that a vaccine was "waiting for you" and increased vaccination rates by 10% (9.3% if adjusted for the winner's curse).

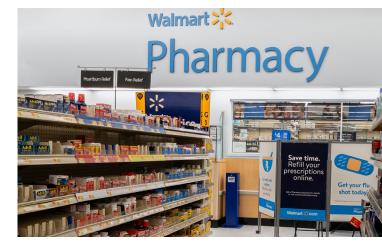
Sending multiple reminder messages yielded better results than sending a single reminder.

### WHERE CAN YOU READ MORE ABOUT THE FINDINGS FROM BOTH OF OUR 2020 VACCINATION MEGASTUDIES?

**These are the Text Messages That Get People to Take Vaccines** (2021), *The Washington Post* 

This Simple Text Message Can Encourage People to Get Vaccinated, Researchers Say (2021), CNN Health

Building Trust and Battling Barriers: The Urgent Need to Overcome Vaccine Hesitancy (2021), United States House of Representatives Select Subcommittee on the Coronavirus Crisis





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66 Testing behavioral science ideas in field settings is critical, but operationalizing such studies is challenging. Through their megastudies, BCFG expands the opportunities for researchers to evaluate their hypotheses in realistic settings and facilitates clean comparisons among many interventions. I am enormously appreciative for being invited to contribute ideas for how to increase vaccination rates in two megastudies."

BCFG Team Scientist Gretchen Chapman Professor of Social and Decision Sciences, Carnegie Mellon University

# COULD A GEO-TARGETED VACCINE REGRET LOTTERY BOOST VACCINATION?

Milkman, K.L., L. Gandhi, S.F. Ellis, H.N. Graci, D.M. Gromet, R.S. Mobarak, A.M. Buttenheim, A.L. Duckworth, D. Pope, A. Stanford, R. Thaler, and K.G. Volpp (2022)

nature human behaviour A Citywide Experiment Testing the Impact of Geographically Targeted, High-Pay-Off Vaccine Lotteries Nature Human Behavior

### WHY DID WE DESIGN, IMPLEMENT AND EVALUATE THE PHILLY VAX SWEEPSTAKES?

Vaccination saves lives, particularly vaccination against COVID-19.

In the summer of 2021, many Philadelphians remained vulnerable and unvaccinated against COVID-19.

Regret lotteries had been used successfully to encourage other health behaviors, but their value for encouraging vaccines hadn't yet been tested.

### WHO WERE THE PARTICIPANTS?

1,064,805 Philadelphia adult residents





### HOW WAS THE MEGASTUDY DESIGNED?

It was a "regret lottery:" All residents were entered but **winners** could only accept their prize if they had previously **received** a COVID-19 **vaccine**.

It was geographically-targeted: Across three drawings, residents of three randomly selected zip codes received half the lottery prizes available.



### WHAT DID WE LEARN?

Increasing residents' odds of winning a **prize of** up to \$50,000 by a factor of 50 to 100 by geo-targeting their **zip codes** did not boost vaccinations.

The impact of the overall sweepstakes on **Philadelphia** was more ambiguous; it may have been a cost-effective way to **encourage vaccination** in the city.



**66** The Philly Vax Sweepstakes was a prime example of science meeting policy. We partnered with the city of Philadelphia to test the value of lotteries for increasing vaccination at scale during a critical moment in the pandemic. I enjoyed contributing to this BCFG project."

**BCFG Team Scientist Devin Pope** Professor of Behavioral Science and Economics at The University of Chicago Booth School of Business

### COULD A GEO-TARGETED VACCINE REGRET LOTTERY BOOST VACCINATION?



66 The most important lesson I took away from this project is that even for this amazing team, the many steps between a simple conceptual idea to a large-scale implementation under time pressure matter. To paraphrase a well-known graduate of the LSE: 'You can't always test what you want...'"

#### **BCFG Team Scientist Richard Thaler**

Professor of Behavioral Science and Economics at The University of Chicago Booth School of Business and Nobel Laureate

### WHERE CAN YOU LEARN MORE ABOUT OUR FINDINGS?

What We Learned From Philadelphia's Vaccine Lottery (2022), The Philadelphia Inquirer

**The Vaccine Lottery Seemed Like a Great Idea. Why Didn't it Work?** (2022), *Freakonomics M.D.* 

Vaccine Jackpot (2022), Science Magazine





HOW DID OUR LEADERSHIP SUPPORT AN EVIDENCE-BASED APPROACH TO ENCOURAGING VACCINATION?

Starting in 2021, BCFG became a key source of insights for policymakers and scientists on how to apply evidence to increase vaccination rates

# WHERE DID WE SHARE OUR RESEARCH AND EXPERTISE?

A White House briefing

**Congressional testimony** 

Multiple presentations to the National Institutes for Health

Repeated conversations with the Centers for Disease Control and Prevention

Via the <u>National Academies' Societal Experts</u> Action Network

Through international news outlets (<u>NPR</u>, <u>The</u> <u>Economist</u>, <u>CNN</u>, <u>The Washington Post</u>, and beyond)

KATY MILKMAN

JOIN US!







PRIMARY

The top performing interventions

INCREASED VACCINATION RATES by reminding patients a shot was

reserved or waiting for them

**Click For More Information** 

A Virtual Briefing on Tactics Tested for Encouraging COVID-19 Vaccination 11/5/2021, 12-1 PM ET

BCFG X CHIBE PRESENT





I led a team which determined that the financial incentives offered by many US states in 2021 didn't succeed in changing vaccination behavior in a substantial way."

BCFG Team Scientist Harsha Thirumurthy Associate Professor of Medical Ethics and Health Policy, Perelman School of Medicine

Thirumurthy, et al. (2022). <u>Association between statewide financial incentive</u> programs and COVID-19 vaccination rates. *PLOS ONE.* 

# WHAT WORKS TO REDUCE SELF-CONTROL FAILURE?

Duckworth, A.L., K.L. Milkman, and D. Laibson (2018)



**Beyond Willpower: Solutions for Reducing Failures of Self-Control** *Psychological Science in the Public Interest* 

### WHY DID WE WRITE THIS REVIEW ARTICLE?

Research on self-control has grown explosively in recent years.

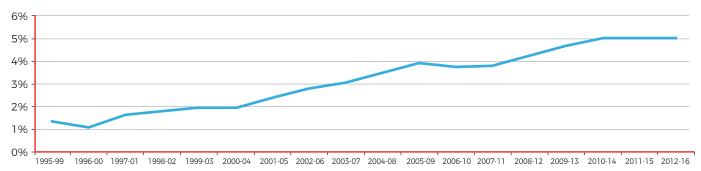
Self-control failures can contribute to many of society's great challenges, undermining our health, financial security, and educational achievement.

Careful syntheses of the best evidence that policy makers can use to help people overcome selfcontrol failure and reduce self-defeating behaviors are lacking.

### SELECTED MEDIA COVERAGE

<u>A Smarter Way to Think About Willpower</u> (2019), The Washington Post





Average percentage of articles in Psychological Science that used the term "self-control."



66 The more researchers use their tools to work in concert, rather than in niche silos, the faster our pool of knowledge will grow. This realization, as I explored in the context of willpower, provides the launch pad for BCFG."

**BCFG Team Scientist David Laibson** Professor of Economics at Harvard University

# ADVICE-GIVING HELPS THE ADVISOR

Eskreis-Winkler, L., K.L. Milkman, D.M. Gromet, and A.L. Duckworth (2019)



#### A Large-Scale Field Experiment Shows Giving Advice Improves Outcomes for the Advisor

Proceedings of the National Academy of Sciences

# WHAT WAS THE RESEARCH QUESTION?

When students give their peers advice on study strategies, does it improve the advisor's own academic outcomes?

### WHO WERE THE PARTICIPANTS?

1,982 students from 7 diverse public U.S. high schools

### SELECTED MEDIA COVERAGE

Your Own Advice (2019), Choiceology podcast



### HOW DID WE TEST OUR HYPOTHESIS?

We randomly assigned some students to complete an **8-minute intervention** in which they answered **14** questions, which solicited their advice for younger students about helpful study habits (e.g., where to study, how to avoid distraction, etc.).



### WHAT DID WE LEARN?

Asking high school **students** to **give advice** about helpful **study habits improved** their own report card **grades** in math and in the subject they most hoped to improve in over the course of a single academic quarter.



<sup>66</sup> This work would not have been possible without BCFG. The study was run in high schools, a context where things can and often do go wrong. Everything BCFG does is mega. They run megastudies. They are also mega-respectful to participants; they are mega-rigorous in their methods, they are mega-efficient and mega-smart. It's no surprise they get mega results."

**BCFG Team Scientist Lauren Eskreis-Winkler** (and former BCFG post-doctoral scholar and Penn PhD student), Assistant Professor of Management and Organizations at the Kellogg School of Management at Northwestern University



## MOTIVATION LAUNDERING

Kirgios, E.L., E.H. Chang, E.E. Levine, K.L. Milkman, and J.B. Kessler (2020)



### Forgoing Earned Incentives to Signal Pure Motives

Proceedings of the National Academy of Sciences

# WHAT WAS THE RESEARCH QUESTION?

Will people give up earned financial rewards to convince themselves that self-improvement or acts of generosity was intrinsically motivated?



### HOW DID WE TEST OUR HYPOTHESIS?

Two large experiments gave participants the opportunity to treat the positive feelings elicited during their tasks—either **writing letters to sick children or exercising**—as their reward. In each case, participants were given the option to forego incentives they earned for completing these activities.

### WHO WERE THE PARTICIPANTS?

17,968 gym members (plus 763 letter writers from an online panel)



### WHAT DID WE LEARN?

If people are prompted to treat their goal progress as a reward and forego cash incentives they earned for virtuous behavior, many more will take the opportunity than would without this framing. This form of "motivation laundering" helps people convince themselves they were motivated by the act itself.





<sup>66</sup> This work benefited from the Behavior Change for Good Initiative's incredible infrastructure for running large-scale field experiments. The BCFG team makes it easy (and fun!) to do great field research."

BCFG Team Scientist Erika Kirgios (and former Wharton PhD student), Assistant Professor of Behavioral Science, The University of Chicago Booth School of Business

# TEACHING TEMPTATION BUNDLING TO BOOST EXERCISE

Kirgios, E.L., G.H. Mandel, Y. Park, K.L. Milkman, D.M. Gromet, J.S. Kay, and A.L. Duckworth (2020)



#### **Teaching Temptation Bundling to Boost Exercise: A Field Experiment**

Organizational Behavior and Human Decision Processes

# WHAT WAS THE RESEARCH QUESTION?

Does helping people bundle temptations (e.g., listening to an exciting audiobook or binge-watching a favorite t.v. show) with exercise yield benefits?

### WHO WERE THE PARTICIPANTS?

6,792 members of 24 Hour Fitness

### **SELECTED MEDIA COVERAGE**

The Science of How to Stick to New Year's Resolutions and Truly Change Your Habits (2021), CNN Health

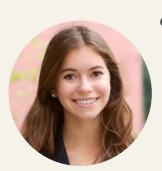
# HOW DID WE TEST OUR HYPOTHESIS?

Gym members who signed up for a program to help them build exercise habits were either 1) encouraged to **exercise more**. 2) given a promotional code that allowed them to download a **free audiobook** and encouraged to exercise more, or 3) given a promotional code for a free audiobook that they were encouraged to **enjoy only while exercising** more ("temptation bundling").



### WHAT DID WE LEARN?

Both providing **free audiobooks** in the context of a program designed to promote exercise and encouraging "temptation bundling" **increased** people's weekly workout **frequency** by **10-12%** for up to **17** weeks postintervention.



<sup>66</sup> Professor Milkman and Professor Duckworth's Science of Behavior Change Undergraduate Seminar began my journey with the Behavior Change for Good Initiative. I was one of several peers whose interests and career aspirations were shaped by the course material. Inspired by the course, I pursued a senior honors thesis that helped produce this fascinating paper. BCFG is a special place. It fosters growth and learning in a supportive and engaging environment for people at all stages of their research careers."

#### Graelin Mandel

(former Wharton undergraduate), incoming PhD student, The University of Chicago Booth School of Business

# A "COPY AND PASTE" NUDGE TO PROMOTE GOAL ACHIEVEMENT

Mehr, K.S., A.E. Geiser, K.L. Milkman, and A.L. Duckworth (2020)



<u>Copy-Paste Prompts: A New Nudge to Promote</u> Goal Achievement

Journal of the Association for Consumer Research

# WHAT WAS THE RESEARCH QUESTION?

Does nudging people to deliberately copy and paste their successful peers' strategies for goal achievement add value?



### HOW DID WE TEST OUR HYPOTHESIS?

Participants were randomly assigned to three different experimental conditions. Some were instructed to **"copy and paste"** another person's motivational strategy to exercise by first asking another person for their strategy and then using the strategy themselves. Others were either given a motivational strategy someone else had obtained or received no strategy at all.

### WHO WERE THE PARTICIPANTS?

1.028 people recruited through an online panel

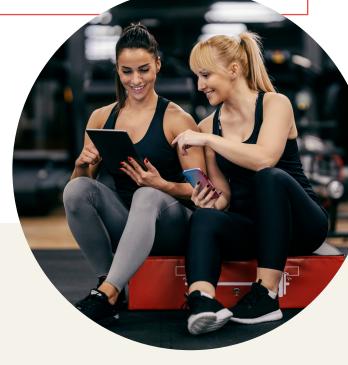
### SELECTED MEDIA COVERAGE

The Copy-Paste Technique is the Easiest, Most Effective Self-Improvement Hack, a New Wharton Study Finds (2022), Inc. Magazine

## Å.

### WHAT DID WE LEARN?

Participants who were prompted to "copy and paste" someone else's life hack exercised up to **56 more minutes**, on average, than those who received no such prompt.





66 It was exciting to work on this project about a new way to nudge healthier decisions. I am so grateful for BCFG's support of our research."

#### Katie Mehr

fifth-year PhD student, The Wharton School at the University of Pennsylvania

# THE BENEFITS OF MAKING BIG GOALS MORE GRANULAR

Rai, A., M.A. Sharif, E.H. Chang, K.L. Milkman, and A.L. Duckworth (2022)



A Field Experiment on Subgoal Framing to Boost Volunteering: The Trade-Off Between Goal Granularity and Flexibility Journal of Applied Psychology

# WHAT WERE THE RESEARCH QUESTIONS?

Does breaking big goals into smaller, bite-sized chunks increase achievement in the field?

Are more flexible subgoals more valuable?



### HOW DID WE TEST OUR HYPOTHESIS?

Crisis counselors were encouraged to meet their yearly 200 hour volunteering goal by either 1) volunteering some each week, 2) volunteering 8 hours every two weeks, or 3) by volunteering 4 hours every week (to reach 200 hours total)

### WHO WERE THE PARTICIPANTS?

9.108 crisis counselors

¥

### WHAT DID WE LEARN?

Nudging people to break a big 200 hour yearly volunteering **goal** into **smaller**, bitesized **chunks** (**4** hours of volunteering **per week** or **8** hours every two weeks) produced an **8% increase** in hours volunteered during our 3-month intervention.



I loved working at BCFG as a Research Coordinator. At BCFG I learned first-hand how to conduct large-scale field studies on behavior change. This experience helped prepare me to lead my own field experiments and partner with BCFG as a PhD student on a large-scale test of a costless nudge to increase volunteering."

Aneesh Rai

(former BCFG Research Coordinator), fifth-year PhD student, The Wharton School at the University of Pennsylvania

# The Science of Behavior Change Undergraduate Seminar

BCFG's co-directors Angela Duckworth and Katy Milkman taught an advanced undergraduate seminar from 2018-2020 called "The Science of Behavior Change" at the University of Pennsylvania. The small, selective seminar covered foundational research on behavior change and was widely popular and beloved.

#### **Student Perspectives on the Course**

"Possibly the best course that I've taken at Penn. From the readings to the discussions we had in class to the guest speakers who came from a myriad of areas in the field of behavior change, I learned so much and am so much more inspired about making an impact in the world through the behavioral change space."





Fall 2019 class



Partial class photo on Zoom: fall 2020

"This is the kind of course that brought me to Wharton. Stellar, star professors who communicated the material well and made discussions super interesting. The intimacy and maturity of the seminar made me feel part of something special." "I have never taken a class at Penn like this one! I loved Dr. Duckworth's and Dr. Milkman's graduateseminar approach, especially because they fine-tuned it to the upperclassman-undergrad experience. The class was very organized, well-structured, and thoroughly engaging. This class has challenged my ability to think about complex societal problems, ask questions, and use constructive feedback."



"Angela and Katy got me so interested in behavior change that I think I'd apply for a PhD in this field rather than the field I was previously considering before taking this course."

# BCFG'S EVENTS

# BCFG'S INAUGURAL SCIENTIFIC GATHERING

The year BCFG opened its doors, we hosted an inaugural gathering of 20 Team Scientists at the University of Pennsylvania. Event highlights included a fireside chat with Nobel Laureate Daniel Kahneman and the live recording of a <u>Freakonomics</u> episode featuring Team Scientists. In the evening, Angela Duckworth co-hosted a live episode of the game-show <u>Tell Me Something I Don't Know</u> featuring Team Scientists as contestants. In the show, guests offered facts to be judged on three criteria: Did the hosts already know this fact? Is this fact worth knowing? Is this fact demonstrably true? In our special episode, BCFG Team Scientists Colin Camerer, Ayelet Fishbach, David Laibson, Max Bazerman, Katy Milkman, Kevin Volpp, and Dean Karlan all offered their best facts. Max Bazerman left victorious, but you'll have to listen to the episode to find out why...





# A CONFERENCE LIKE NO OTHER



In June of 2019, we hosted over 80 team scientists and industry partners on Penn's campus for a celebration of our work so far. Nobel Laureate Richard Thaler and National Academy of Sciences member Robert Cialdini delivered the event keynotes. The day was capped off with a live taping of *Freakonomics* featuring our co-founders as well as Team Scientists Michael Norton. Laurie Santos, Justin Sydnor, Tom Gilovich, and Richard Thaler at the Merriam Theater in downtown Philadelphia in front of a sellout crowd.







# HEALTHY HABITS ROUNDTABLE AND SPECIAL ISSUE OF OBHDP

In partnership with our close friends at the Center for Health Incentives and Behavioral Economics, we co-hosted a Healthy Habits Roundtable sponsored by WW (formerly Weight Watchers). Numerous Team Scientists convened along with several trainees to share the latest insights from their research on lasting behavior change.



It was a pleasure to co-host the Healthy Habits Roundtable with BCFG. The insights shared by researchers allowed us to make important contributions to the science of healthy habits that can help meaningfully improve people's lives."

#### **Kevin Volpp**

BCFG Team Scientist, Director of the Center for Health Incentives & Behavioral Economics, Mark V. Pauly President's Distinguished Professor at Perelman School of Medicine and Health Care Management at the Wharton School This event led to the production of a <u>special issue</u> of Organizational Behavior and Human Decision Processes on healthy habits featuring articles contributed by 16 BCFG Team Scientists.

# WHO EDITED THE SPECIAL ISSUE?

Team scientists Katy Milkman, Dilip Soman, and Kevin Volpp

### WHAT ARTICLES WERE FEATURED IN THIS SPECIAL ISSUE?

Nudging: Progress to date and future directions By John Beshears and Harry Kosowsky

Teaching temptation bundling to boost exercise: A field experiment By Erika Kirgios, Graelin Mandel, Yeji Park, Katherine Milkman, Dena Gromet, Joseph Kay, and Angela Duckworth

What is a habit? Diverse mechanisms that can produce sustained behavior change By Kevin Volpp and George Loewenstein

**Behavior change** By Angela Duckworth and James Gross

**Dodging dietary defaults: Choosing away from healthy nudges** By Helen Colby, Meng Li, and Gretchen Chapman

Target, distance, and valence: Unpacking the effects of normative feedback By Jonathan Bogard, Magali Delmas, Noah Goldstein, and Stephanie Vezich

Returnable reciprocity: Returnable gifts are more effective than unreturnable gifts at promoting virtuous behaviors By Julian Zlatev and Todd Rogers

When wanting closure reduces patients' patience By Annabelle Roberts and Ayelet Fishbach

Designing in-app messages to nudge behavior change: Lessons learned from a weight management app for young adults By Carmina Valle, Brooke Nezami, and Deborah Tate



# BCFG'S RESEARCH SEMINARS

## **CAMPUS EVENTS**



A presentation from **Dean Karlan** Professor of Economics & Finance at the Kellogg School of Management of Northwestern University

The Topic: Randomizing Religion: The Impact of Protestant Evangelism on Economic Outcomes



A presentation from **Shlomo Benartzi** BCFG Distinguished Senior Fellow and Professor Emeritus at the UCLA Anderson School of Management

The Topic: Helping People Save: Simple, Scalable Changes Can Lead to Dramatic Shifts in Creating Financial Security

## **ONLINE EVENTS**

To continue scientific dialogue during the early days of the COVID-19 pandemic, we launched a popular online academic seminar series that attracted more than 4,000 registrants and drew 600-900 participants, live each week. Our YouTube channel featuring these online talks now boasts over 1,300 subscribers and 36,000+ total views.

### WHO DID WE FEATURE IN OUR ONLINE EVENTS, AND WHAT TOPICS DID THEY COVER?



#### A presentation by Judd Kessler

Professor of Business Economics and Public Policy at The Wharton School of the University of Pennsylvania

The Topic: <u>The Gender Gap in</u> <u>Self-Promotion</u>

#### A presentation by Ethan Kross

Professor of Psychology and Management/Organizations at the University of Michigan Ross School of Business

The Topic: <u>Self-Talk: How You</u> <u>Do It Matters</u>



#### A presentation by **Gretchen Chapman**

Professor of Psychology, Social and Decision Sciences at Carnegie Mellon University

The Topic: <u>Numerical Cognition and</u> <u>Federal Budgetary Expenditures</u>



A presentation by **Betsy Levy Paluck** *Professor of Psychology and Public Affairs at Princeton University* 

The Topic: Prejudice Reduction: Progress and Challenges



A presentation by **Francesca Gino** *Tandon Family Professor of Business Administration at Harvard University* 

The Topic: Piqued Curiosity



A presentation by **Susan Athey** 

The Economics of Technology Professor at Stanford University

The Topic: Designing and Analyzing Behavioral Experiments With Machine Learning

### WHO DID WE FEATURE IN OUR ONLINE EVENTS AND WHAT TOPICS DID THEY COVER?



A presentation by **Colin Camerer** *Robert Kirby Professor of Behavioral Finance and Economics at the California Institute of Technology* 

The Topic: <u>New Perspectives on</u> <u>Habit Formation From Machine</u> <u>Learning and Neuroscience</u>



A presentation by John Beshears

Terrie F. and Bradley M. Bloom Associate Professor of Business Administration at Harvard University

The Topic: Consumption Responses to Mortgage Payments



A presentation by **Dean Karlan** Professor of Economics & Finance at the Kellogg School of Management of Northwestern University

The Topic: Nudge Today, Almost Cone Tomorrow



A presentation by **Modupe Akinola** 

Sanford C. Bernstein & Co. Associate Professor of Leadership and Ethics at Columbia University

The Topic: Thriving Under Pressure



A presentation by **Marissa Sharif** Assistant Professor of Marketing at the The Wharton School of the University of Pennsylvania

The Topic: Leveraging Flexibility to Increase Goal Persistence



A presentation by **Alison Wood Brooks** 

Associate Professor of Negotiation, Organizations, and Markets at Harvard University

The Topic: <u>How to Talk Gooder:</u> The Science (and Serendipity) of <u>Conversation</u>



A presentation by **Muriel Niederle** *Professor of Economics at Stanford University* 

The Topic: The Role of Competitiveness in Education and Labor Market Outcomes (based on joint work with Thomas Buser and Hessel Oosterbeek)



A presentation by **Max Bazerman** 

Jesse Isidor Straus Professor of Business Administration at Harvard University

The Topic: <u>Allocating Scarce</u> <u>Resources Under COVID Wisely</u>



A presentation by **Duncan Watts** Stevens University Professor at the University of Pennsylvania

The Topic: <u>The Effects of Task</u> <u>Complexity on Group Synergy</u>



A presentation by **Ulrike Malmendier** *Edward J. and Mollie Arnold Professor of Finance and Professor of Economics at the University of California, Berkeley* 

The Topic: Exposure to Grocery Prices and Inflation Expectations

### WHO DID WE FEATURE IN OUR ONLINE EVENTS AND WHAT TOPICS DID THEY COVER?



A presentation by **Eli Finkel** Professor of Psychology and Management & Organizations at Northwestern University

The Topic: Joint vs. Separate Bank Accounts and Marital Quality



#### A presentation by Katy Milkman

James G. Dinan Professor of Operations, Information and Decisions at The Wharton School of the University of Pennsylvania

The Topic: <u>A Mega-Study Approach</u> to Applied Behavioral Science



A presentation by **Hal Hershfield** Associate Professor of Marketing, Behavioral Decision Making, and Psychology at the University of California, Los Angeles

The Topic: Pennies and Dollars



#### A presentation by **David Rand**

Erwin H. Schell Professor and Associate Professor of Management Science and Brain and Cognitive Sciences at MIT Sloan School of Management





A presentation by **Ashley Whillans** Assistant Professor of Business Administration in the Negotiation, Organizations & Markets Unit at Harvard Business School

The Topic: <u>Time and Happiness</u> During COVID



#### A presentation by **Neil Lewis Jr.**

Assistant Professor of Communication and Social Behavior at Cornell University

The Topic: Whose Minds Matter? Sampling, Measurement, Inference, and Application Considerations as We Diversify the Behavioral Sciences



A presentation by **Hunt Allcott** *Principal Researcher at Microsoft Research* 

The Topic: Digital Addiction



A presentation by **Anuj Shah** Associate Professor of Behavioral Science at the University of Chicago Booth School of Business

The Topic: <u>Perceptions of</u> <u>Imperfect Strangers</u>



A presentation by **David Yeager** Associate Professor of Psychology at University of Texas at Austin

The Topic: Beliefs Count Twice



A presentation by **Cass Sunstein** Robert Walmsley University Professor of Law at Harvard University

The Topic: Hayekian Behavioral Economics

## VIRTUAL BCFG AUTHORS SERIES

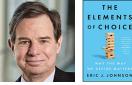
Since 2021, we've hosted monthly online events with BCFG scientists who've written books in order to bring their applied insights to a wider audience. In the fall of 2022, we began partnering with <u>Psychgeist Media</u> on these events.

#### Authors@BCFG Fall 2021



**Jay Van Bavel,** Professor at New York University

Author of The Power of Us



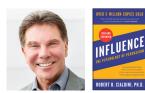
**<u>Eric Johnson,</u>** Professor at University of Columbia

Author of The Elements of Choice



**Dolly Chugh,** Professor at New York University

Author of The Person You Mean to Be





Author of Influence



<u>Wendy Wood,</u> Professor at University of Southern California

Author of Good Habits, Bad Habits

#### **Behavioral Science Authors Spring 2021**



**<u>Ayelet Fishbach,</u>** Professor at The University of Chicago

Author of Get It Done



**John List,** Professor at The University of Chicago Author of The Voltage Effect

#### **Behavioral Science Authors Spring 2021**



Nina Mazar & Dilip Soman Professor at Boston University (Mazar); Professor at University of Toronto (Soman) Authors of Behavioral Science in the Wild



#### Don Moore & Max Bazerman

Professor at University of California, Berkeley (Moore); Professor at Harvard University (Bazerman)

Authors of Decision Leadership

#### **Behavioral Science Authors Fall 2022**



<u>Cassie Holmes</u> Professor at University of California, Los Angeles

Author of Happier Hour





**Dolly Chugh** Professor at New York University **Author of A More Just Future** 

<u>Max Bazerman</u> Professor at Harvard University

Author of Complicit

66 BCFG's Behavioral Science Author Series presented me with a terrific opportunity to share the insights from my book with an audience that might not otherwise have encountered my work. The engagement from the audience was inspiring."

BCFG Team Scientist Dolly Chugh, Jacob B. Melnick Term Professor, Leonard N. Stern School of Business, New York University

# **BCFG TEAM SCIENTISTS**

**Modupe Akinola,** Professor at Columbia Business School

**Dolores Albarracín,** Professor at the University of Pennsylvania

**Hunt Allcott**, Professor at Stanford University

**Dan Ariely,** Professor at the Fuqua School of Business of Duke University

**David Asch**, Professor at the University of Pennsylvania

**Susan Athey,** Professor at Stanford University

**Linda Babcock**, Professor at Carnegie Mellon University

**Max Bazerman**, Professor at Harvard Business School

**Shlomo Benartzi**, Professor Emeritus at the University of California, Los Angeles Anderson School of Management

**Ron Berman**, Assistant Professor at The Wharton School of the University of Pennsylvania

John Beshears, Associate Professor at Harvard Business School

**Cristina Bicchieri**, Professor at the University of Pennsylvania

**Jon Bogard,** Assistant Professor at Olin Business School of Washington University, St. Louis

**Christopher Bryan**, Assistant Professor at McCombs School of Business of the University of Texas at Austin

**Alison Buttenheim,** Professor at the University of Pennsylvania School of Nursing

**Colin Camerer**, Professor at the California Institute of Technology

**Scott Carrell,** Professor at the University of California, Davis

**Ben Castleman,** Associate Professor at the University of Virginia

**Christopher Chabris**, Professor at Geisinger Health System

**Edward Chang**, Assistant Professor at Harvard Business School

**Tom Chang**, Associate Professor at the University of Southern California Marshall School of Business

**Gretchen Chapman**, Professor at Carnegie Mellon University

**Keith Chen,** Professor of Economics at the University of California, Los Angeles Anderson School of Management

James Choi, Professor at the Yale School of Management

Nicholas Christakis, Professor at Yale University

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**Robert Cialdini,** Professor Emeritus at Arizona State University

**Geoffrey Cohen**, Professor at the Graduate School of Education of Stanford University

**Benjamin Converse,** Associate Professor at the Frank Batten School of Leadership and Public Policy of the University of Virginia

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Lauren Eskreis-Winkler, Assistant Professor at the Kellogg School of Management of Northwestern University

**Emily Falk**, Professor at the University of Pennsylvania

**Ernst Fehr**, Professor at the University of Zurich

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Thomas Gilovich, Professor at Cornell University

**Ayelet Gneezy**, Professor at the Rady School of Management of the University of California, San Diego

**Uri Gneezy,** Professor at the Rady School of Management of the University of California, San Diego

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Paul O'Keefe, Associate Professor at Yale-NUS College

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**Philip Oreopoulos,** Professor at the University of Toronto

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Ted O'Donoghue, Professor at Cornell University

**Mitesh Patel**, Chief Clinical Transformation Officer and National Vice President of Ascension

**Devin Pope**, Professor at the University of Chicago Booth School of Business

**Stefano Puntoni**, Professor at The Wharton School of the University of Pennsylvania

Matt Rabin, Professor at Harvard University

**David Rand**, Professor at the Massachusetts Institute of Technology Sloan School of Management

**Daniel Read,** Professor at the University of Warwick Business School

**Jason Riis,** CEO and Chief Behavioral Scientist at Behavioralize

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Övül Sezer, Assistant Professor at Cornell University

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**Marissa Sharif**, Assistant Professor at The Wharton School of the University of Pennsylvania

**Paschal Sheeran**, Professor at the University of North Carolina at Chapel Hill

**Deborah Small,** Professor at Yale School of Management

**Jack Soll**, Professor at the Fuqua School of Business of Duke University

**Dilip Soman**, Professor at the Rotman School of Management of the University of Toronto

Jann Spiess, Assistant Professor at Stanford Graduate School of Business

**Charles Sprenger**, Professor at the California Institute of Technology

**Bradley Staats**, Professor at Kenan-Flagler Business School of the University of North Carolina, Chapel Hill

**Cass Sunstein**, Professor at Harvard University

**Gaurav Suri**, Associate Professor at San Francisco State University

**Abby Sussman**, Professor at the University of Chicago Booth School of Business

**Justin Sydnor,** Professor at the University of Wisconsin School of Business

**Bridget Terry Long,** Professor at the Harvard Graduate School of Education

**Richard Thaler,** Professor at the University of Chicago Booth School of Business

Harsha Thirumurthy, Professor at the University of Pennsylvania

Yaacov Trope, Professor at New York University

**Peter Ubel**, Professor at the Fuqua School of Business of Duke University

**Lyle Ungar**, Professor at the University of Pennsylvania

**Oleg Urminsky,** Professor at the University of Chicago Booth School of Business

**Christophe Van den Bulte**, Professor at The Wharton School of the University of Pennsylvania

Jay Van Bavel, Associate Professor at New York University

**Kevin Volpp**, Professor at the Perelman School of Medicine of the University of Pennsylvania

**Greg Walton,** Professor at Stanford University

**Caleb Warren**, Associate Professor at the Eller College of Management of the University of Arizona

**Duncan Watts,** Professor at the University of Pennsylvania

**Elke Weber**, Professor at Princeton University

**Ashley Whillans,** Assistant Professor at Harvard Business School

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**George Wu,** Professor at the University of Chicago Booth School of Business

**David Yeager,** Associate Professor at the University of Texas at Austin

Jonathan Zinman, Professor at Dartmouth College

Julian Zlatev, Assistant Professor at Harvard Business School

# 2023 BCFG STAFF



Dena Gromet, PhD Executive Director



Joseph Kay, PhD Manager of Research Operations



Sean F. Ellis, PhD Research Project Manager



Alex Luscher Research and Communications Coordinator



**Rayyan Mobarak** *Research Coordinator* 



Maddy Paxson Research Coordinator



Ramon Silvera Zumaran Research Coordinator



**Doug Sandler** Undergraduate Research Assistant



Anna Swartley Undergraduate Research Assistant



Akhilesh Tumu Undergraduate Research Assistant

# **BCFG ALUMNI**

### Pre-Doctoral Research Coordinators

We've been fortunate to work with many talented pre-doctoral research coordinators. We're excited to see where their careers will take them!



Heather Graci Assistant Editor Behavioral Scientist



Aden Halpern Research Coordinator Penn Medicine



Lauri Bonacorsi JD, Northwestern Pritzker School of Law; Associate Attorney, Sidley Austin LLP



Hung Ho PhD candidate in Marketing, The University of Chicago Booth School of Business



Pepi Pandiloski PhD candidate in Political Economy, Development, and Networks, The University of Chicago



Jake Rothschild Traveler

### Undergraduate and Graduate Research Assistants

We've also had the pleasure of working with the following research assistants:

Elsa Baumgartner **Christina Chang** Xinyi (Cindy) Chen Lan-Ting Chiang **Joan Darty Ibrahim El-Morsy Ilyssa Delos Reyes** Ye Zhuan (Carin) Gan Amanda Geiser Analexis Glaude Karen Herrera **Michelle Huang** Visakh Jagadeesan Nair **Javion Joyner Canyon Kornicker** Thomas Li **Chen Ping Liao** Xiteng (Steven) Lin **Stephanie Loo** Ynizi Lu **Graelin Mandel** Dana Max Anita Mo **Angelina Pan Joseph Peanasky Jared Peterson Mira Potter-Schwartz** Bhavna Saluja Jordyn Schor Danielle Schweitzer **Yichen Shao** Julia Snoy Maria Staszkiewicz Maayan Waldman Samantha Wu-Georges **Andrew Yang** Marco Yap Jill Yu **Patrick Zhang** 



Daniel Jaro Research Coordinator Johns Hopkins Center for Psychedelic & Consciousness Research



**Yeji Park** PhD candidate in Social Psychology Princeton University



Masters candidate in Analytics, Northwestern University



Aneesh Rai PhD candidate in Operations, Information, and Decisions The Wharton School

### We are tremendously grateful to our:

# **FUNDERS**



Mark J. Leder Co-Chief Executive Officer Sun Capital Partners



Warren Lichtenstein Executive Chairman **Steel Partners** 



#### John Alexander President **Alexander Production** Company



Abby and Jeremy Schiffman

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#### CRISIS TEXT LINE











