



**BUSINESS &
ENVIRONMENT
TEACHING,
RESEARCH &
ENGAGEMENT
2017-18**

HARVARD | BUSINESS | SCHOOL

“The risks of climate change—and the costs and regulatory changes that these risks may drive—are emerging as central issues for the private sector.”

–REBECCA HENDERSON

“The effects of water shortage range from inconvenience...to illness...to the potential abandonment of major cities.”

–JOHN MACOMBER

“We find ourselves with nuclear power facing huge challenges and the development of other non-carbon energy sources a high priority, thus making the role of innovation in renewable energy a first-tier policy concern.”

–RAMANA NANDA

“In the long run, institutions that improve efficiency, align incentives, and create value outcompete those that don’t.”

–FOREST REINHARDT

“Our research promotes a deeper understanding of global environmental movements and civil society, and the role of scrutiny and norms in shaping corporate behavior.”

–MIKE TOFFEL, CHRISTOPHER MARQUIS & YANHUA ZHOU



September 6, 2018

To our friends and colleagues:

The connection between the business world and the natural environment has long been a topic of research, teaching, and engagement at Harvard Business School. Today, as environmental risks and opportunities are becoming increasingly apparent, that connection has taken on new urgency.

The Business & Environment Initiative (BEI) was founded in 2010 to serve as a hub for environmentally focused research, teaching, and discourse. By connecting world-class faculty, students, alumni, and practitioners, BEI works to deepen understanding of the environmental challenges confronting business leaders and to inspire new ideas and practical, effective solutions.

This report provides a snapshot of faculty activities in academic year 2017-18. While not exhaustive, it captures the breadth of faculty work in six critical areas: accelerating innovation in energy and cleantech, confronting climate change, fostering sustainable food production, identifying sustainable business practices, promoting effective governance, and reimagining capitalism.

A few statistics drive home our impact. During this period, over 1280 students enrolled in environment-related elective courses. More than 330,000 environment-related teaching cases written by HBS faculty were sold. The Business & Environment Initiative facilitated and elevated the School's environmental focus. BEI served as a gateway for more than 750 incoming students seeking to access the school's business & environment resources; helped connect hundreds of alumni who share an interest in business & environment; strengthened opportunities for approximately 300 students exploring environment-related internships and jobs; and collaborated with other Harvard schools on University-wide sustainability events.

We are delighted to share this record of accomplishment with you.

Handwritten signature of Michael W. Toffel in black ink.

Michael Toffel
Faculty Chair

Handwritten signature of Jennifer Nash in black ink.

Jennifer Nash
Director

Handwritten signature of Marina I. Jokic in black ink.

Marina I. Jokic
Coordinator

ACCELERATING ENERGY INNOVATION

Global demand for energy is projected to grow substantially over the next several decades as the world's population approaches 9 billion. A major challenge is to spark innovation—in new energy technologies as well as new institutional arrangements—to meet future needs in ways that ameliorate, rather than further stress, the planet's ecosystems. Through teaching, presentations, and research, faculty are working to address this challenge. Highlights from the year appear below.

MBA Courses and Independent Projects:

- Martha Crawford, Forest Reinhardt, and Joseph Lassiter co-taught the elective course "Twenty-First Century Energy," which had an enrollment of 53
- John Macomber supervised 15 Independent Projects on topics ranging from renewable energy in Puerto Rico to blockchain in Africa
- Martha Crawford supervised 2 Independent Projects on the use of blockchain to integrate electricity from large-scale renewables into the electricity grid, and business models to transform or eliminate "mega-dumps" in developing countries

Presentations and Collaborations:

- Martha Crawford moderated the "Women in Energy" panel at the HBS Women's Student Association Annual Conference. She moderated the panel "Europe's Energy Innovation—Technology, Business and Policy," which featured panelists from RWE-Innogy, Norwegian Business School, and Siemens as part of "The European Conference 2018: Europe: Winds in the Sails" hosted at the Harvard Kennedy School. She led the session "Energy, Environment, and Business Careers 101" for MBA students and spoke at the "The Energy Transition in Europe: Politics, Technology, Business Strategy" panel at the HBS research conference "Understanding and Overcoming Roadblocks to Sustainability"
- Joseph Lassiter participated in the MIT-led study on the "Future of Nuclear Energy in a Carbon-Constrained World." He served on the Atlantic Council Global Energy Center Task Force on US Nuclear Energy Leadership. He taught in Robert Stavins' "Workshop on the Analysis of Energy and Environmental Policy" at Harvard Kennedy School and his "ENEL Foundation Climate Change and Energy: Policy Making for the Long Term" workshop. He led a discussion of the case "1366 Technologies: Scaling the Venture" for HBS alumni and MBA students

Opinion Articles and Podcast:

- "How a Coal Polluter Became a Renewable Energy Leader" by Mark Kramer (Cold Call episode)
- "Why Private Investors Must Fund 'New Nuclear' Power Right Now" by Joseph Lassiter, in HBS Working Knowledge, April 2018 (editorial)

Course Materials:

- "1366 Technologies: Scaling the Venture (B)" by Ramana Nanda and Joseph Lassiter (supplement)
- "China Shenhua Energy Company (B)" by Forest Reinhardt and Nancy Hua Dai (case)
- "Enel: The Future of Energy" by Mark Kramer (case)
- "Korea Telecom in the New Energy Market" by Forest Reinhardt and Dawn Lau (case)
- "Mytrah Energy" by Tarun Khanna, Ramana Nanda, and Rachna Tahilyani (case)
- "Ørsted Goes Global" by Joseph Bower and Elena Corsi (case)
- "The U.S. Shale Revolution: Global Rebalancing?" by Laura Alfaro and Richard Vietor (case)



CONFRONTING CLIMATE CHANGE

Climate change is a fundamental business challenge. Faculty-led education and research are helping current and future leaders anticipate how a changing climate will affect their businesses, develop strategies to adapt to this new reality, and participate in policy discussions about government roles. The following bullets capture some of the major activities from the past year.

MBA Courses and Executive Education:

- Forest Reinhardt chaired a two-day discussion for Advanced Leadership Initiative fellows about the science, policy, and business implications of climate change, with participation of faculty from Harvard Business School, Harvard Law School, Harvard Kennedy School, and the Faculty of Arts and Sciences
- Three cases on climate change were taught in the first year required curriculum in courses on Finance; Technology and Operations Management; and Business, Government and the International Economy
- Students in the first-year required course on Technology and Operations Management were given the assignment to choose an organization and write a blog post about how it was addressing one of three pressing social problems, climate change being one

Presentations and Collaborations:

- Martha Crawford moderated "The Role of Business Leaders in Climate Policy" with David Crane, former CEO of NRG, as part of HBS Climate Week in April 2018
- Rebecca Henderson co-chaired Harvard University's planning effort to set new sustainability goals: fossil-fuel neutral by 2026 and fossil-fuel free by 2050
- John Macomber led the case-based discussion "Climate Change in South Florida: When to Invest in Resilience" for Miami-based HBS alumni in April 2018, attended by about 35 alumni and community leaders. He moderated an alumni panel on "Climate Change and the Role of Business" at the June 2018 HBS Alumni Reunion
- Forest Reinhardt co-presented, with Vice Provost Mark Elliott, Vice President Leah Rosovsky, and Harvard Kennedy School professor Robert Stavins, at the Harvard Center in Shanghai in November 2017 on "Finding Solutions: Climate Change Economics, Policy, and Implications for Business"
- Mike Toffel and Rebecca Henderson served as advisers to Harvard Business Review's Future Economy Project, a web-based platform where business executives share their perspectives about the need for action to address climate change

Scholarly Writing:

- "Managing Risk in Reinsurance: From City Fires to Global Warming" by Geoffrey Jones and Niels Hauter (book)

Podcast and Video:

- "Are Carbon Tariffs Protectionism or Climate Policy?" by David Drake (video)
- "How the U.S. Navy Is Responding to Climate Change" by Forest Reinhardt and Michael Toffel (HBR Ideacast)

Course Materials:

- "Climate Change in 2018: Implications for Business" by Rebecca Henderson, Sophus Reinert, Polina Dekhtyar, and Amram Migdal (background note)



FOSTERING SUSTAINABLE FOOD PRODUCTION

The agribusiness sector faces uncertainty and opportunity: much of the world's population faces food insecurity, climate change is requiring shifts in agricultural practices, and sources of fresh water are becoming scarce. At the same time, consumer demand for organic and sustainably sourced food is growing. This changing landscape is creating opportunities for companies that can recognize emerging trends, innovate, and evolve strategies quickly. The following list includes some notable accomplishments of the year.

MBA Courses and Executive Education:

- José Alvarez, Forest Reinhardt, and David Bell co-chaired the annual "Agribusiness Seminar" Executive Education offering. Approximately 200 people participated
- Forest Reinhardt taught the elective course "Food and Agribusiness," which had an enrollment of 33. He co-taught the Harvard College undergraduate course "World Food Systems and the Environment" with faculty from the Biology Department and Harvard Kennedy School

Conferences and Presentations:

- José Alvarez organized and chaired a workshop for food recovery entrepreneurs in collaboration with Harvard Law School
- José Alvarez, David Bell, and Forest Reinhardt led a discussion about trends in agribusiness at the Food, Agriculture, and Water (FAW) Club Welcome Reception in September 2017
- Shawn Cole and Ray Goldberg led the panel "Farming Technology and Decision-Making" with the FAW Club in April 2018
- Geoffrey Jones interviewed Sanjay Bansal, the pioneer of the organic tea industry in Darjeeling, India for the "Creating Emerging Markets" oral history project, which Jones co-directed

Scholarly Writing:

- "Agricultural Insurance and Economic Development" by Wentao Xiong and Shawn Cole, in *Annual Review of Economics* (article)
- "Creating the Market for Organic Wine: Sulfites, Certification, and Green Values" by Geoffrey Jones (working paper)
- "Food Citizenship: Food System Advocates in an Era of Distrust" by Ray Goldberg (book)
- "How Organic Wine Finally Caught On" by Geoffrey Jones, in *Harvard Business Review* (article)

Course Materials:

- "Alltech" by David Bell and Natalie Kindred (case)
- "Amazon Buys Whole Foods" by José Alvarez, David Lane, and Joni Coughlin (case)
- "Area One Farms" by Forest Reinhardt, José Alvarez and Annelena Lobb (case)
- "Back to the Roots" by Elizabeth Keenan and Leslie John (case)

- "The Bayer - Monsanto Merger: GMOs and 'Science for a Better Life'" by Martha Crawford and James Barnett (case)
- "Kellogg Company/eighteen94 capital" David Bell, Damien McLoughlin, and Natalie Kindred (case)
- "Molino Cañuelas: Serving Customers from Seed Development to the Kitchen Table" by José Alvarez, Maria Fernanda Miguel, and Mariana Cal (case)
- "Mondelēz International" by David Bell, Kerry Herman, and Amram Migdal (case)
- "NatureSweet" by José Alvarez, Forest Reinhardt, and Natalie Kindred (case)
- "A Note on the Snack Food Industry" by David Bell, Kerry Herman, and Amram Migdal (technical note)
- "OCP Group" by Kristin Fabbe, Forest Reinhardt, Natalie Kindred, and Alpana Thapar (case)



PROMOTING EFFECTIVE GOVERNANCE

Businesses cannot drive societal-level change toward sustainability by working on their own. Industry collectives, public-private partnerships, and government regulatory agencies all play important roles in fostering change. Faculty are working to identify the most effective governance mechanisms, including industry self-regulation, government policy, and hybrid approaches. Examples from the past year are noted below.

MBA Courses:

- John Macomber taught the elective course "Building Sustainable Cities and Infrastructure," which had an enrollment of 94. He also taught the new elective course "Doing Business in Africa," which had an enrollment of 39, and the immersive field course "Africa; Building Cities," which had an enrollment of 40.

Presentations:

- David Drake presented the paper "Are Carbon Tariffs Protectionism or Climate Policy?" at Indiana's Kelley School of Business and University of Colorado's Leeds School of Business

Scholarly Writing:

- "The Consequences of Mandatory Corporate Sustainability Reporting" by George Serafeim, in *The Oxford Handbook for Corporate Social Responsibility* (book chapter)
- "CSR needs CPR: Corporate Sustainability and Politics" by Michael Toffel, in *California Management Review*, Summer 2018 (article)
- "Market Reaction to Mandatory Nonfinancial Disclosure" by Jody Grewal, Edward Riedl, and George Serafeim, in *Management Science* (article)

Course Materials:

- "Audubon in 2017: The Turnaround" by V. Kasturi Rangan (case)
- "Suez: Public-Private Partnership for Water Desalination in India" by Forest Reinhardt, Martha Crawford, and Emer Moloney (case)

IDENTIFYING SUSTAINABLE BUSINESS PRACTICES

Many businesses are investing in practices that protect natural systems while delivering business value. But despite widespread interest in sustainable business models, many barriers remain. Faculty are working to understand the conditions under which new tools—such as impact investing and environmental, social, and governance metrics—can lead to change on a wide scale. Some accomplishments from the year appear below.

MBA Courses and Executive Education:

- José Alvarez taught the elective course "Retailing," which had an enrollment of 90. The course includes many environment-related topics
- Shawn Cole and Vikram Gandhi taught the elective course "Investing for Impact," which had an enrollment of 46
- Rebecca Henderson launched Harvard Business School's HBX course on Sustainable Business Strategy, a new Online Certificate Program
- Ramana Nanda taught the elective course "Entrepreneurial Finance" in three sections with a combined enrollment of 257. The course includes several environment-related teaching cases
- V. Kasturi Rangan taught the elective course "Business at the Base of the Pyramid," which had an enrollment of 66

Conference and Presentations:

- Shawn Cole co-chaired the Impact Investing Co-Laboratory, which brings together HBS faculty with fund managers to explore investors' growing interest in achieving environmental, social, and governance impacts in addition to financial returns
- Amy Edmondson and Geoffrey Jones co-chaired the HBS conference "Understanding and Overcoming Roadblocks to Sustainability" in June 2018, attracting more than 70 participants from academic institutions across the US and globally. Joe Lassiter, George Serafeim, and Mike Toffel led panels at the conference
- Geoffrey Jones gave talks on the Evolution of Green Business at the Godrej Archives Annual Lecture in Mumbai (July 2017), at the Chinese University of Hong Kong, Hong Kong (March 2018), the HBS Club in Kolkata, India (April 2018) and Eindhoven University of Technology, Netherlands (June 2018). He presented on Sustainability and Green Business at a conference on Latin American Business History in Lima, Peru in March 2018
- George Serafeim led a webinar for alumni on "ESG Investing: What It Is and How to Use It" in January 2018

Scholarly Writing:

- "Corporate Purpose and Financial Performance" by Claudine Gartenberg, Andrea Prat, and George Serafeim, in *Organization Science* (article)
- "Has Environmental Sustainability Lost its Relevance?" by Geoffrey Jones, in HBS Working Knowledge (article)

- "Investors as Stewards of the Commons?" by George Serafeim, in *Journal of Applied Corporate Finance* (article)
- "Material Sustainability Information and Stock Price Informativeness" by George Serafeim (working paper and video)
- "Why and How Investors Use ESG Information: Evidence from a Global Survey" by Amir Amel-Zadeh and George Serafeim, in *Financial Analysts Journal* (article)

Opinion Articles:

- "Active Investing v.2.0." by George Serafeim, in *Pensions & Investments*, November 2017 (editorial)
- "Does Sustainable Investing Lead to Lower Returns?" by George Serafeim and Adam Seessel, in *Barron's*, June 2018 (editorial)
- "Elon Musk's Unusual Compensation Plan Isn't Really About Compensation at All" by George Serafeim, in *Harvard Business Review*, May 2018 (editorial)
- "Facebook, BlackRock, and the Case for Purpose-Driven Companies" by George Serafeim, in *Harvard Business Review*, January 2018 (editorial)

Course Materials:

- "Colombia's 4G Road Program: The Pacifico 3 Bond Offer" by John Macomber, Maria Fernanda Miguel, and Mariana Cal (case)
- "Environmental Platform LEEDership at USGBC" by Timothy Simcoe and Michael Toffel (case and teaching note)
- "Examining the Case for Investing for Impact" by Vikram Gandhi, Caitlin Reimers Brumme, and Shawn Cole (background note)
- "Goldman Sachs: Making an Imprint in Impact Investing" by Shawn Cole, Vikram Gandhi, Caitlin Reimers Brumme, and Lynn Schenk (case)
- "Measuring True Value at Ambuja Cement" by V. Kasturi Rangan, Suraj Srinivasan, and Namrata Arora (case)
- "Wellington Global Impact" by Lynn Schenk and Shawn Cole (case)

REIMAGINING CAPITALISM

To deliver value over the long-term, private sector leaders have a responsibility to society as well as to shareholders. They have an opportunity to act as change agents within the larger system, addressing public goods challenges like environmental degradation and income inequality. Through teaching, research, and engagement, faculty are exploring this important role for firms.

MBA Courses:

- The course "Reimagining Capitalism: Business and Big Problems" was named co-winner of the 2017 Page Prize for Sustainability Issues in Business Curricula. It also won the Aspen Institute's 2018 Ideas Worth Teaching award in the Corporate Purpose and Leadership category. Rebecca Henderson, who originated this course, was elected to the American Academy of Arts and Sciences
- Geoffrey Jones taught the elective course "Entrepreneurship and Global Capitalism," which had an enrollment of 156 in its two sections
- George Serafeim taught the elective course "Reimagining Capitalism: Business and Big Problems," which had an enrollment of 191 in its two sections

Scholarly Writing:

- "Gapponshugi in Global Perspective: Debating the Responsibility of Capitalism" by Geoffrey Jones, in *Ethical Capitalism* (book chapter)
- "More and More CEOs Are Taking Their Social Responsibility Seriously" by Rebecca Henderson, in *Harvard Business Review* (article)

Opinion Articles and Podcast:

- "Can Index Funds Be a Force for Sustainable Capitalism?" by George Serafeim, in *Harvard Business Review*, December 2017 (editorial)
- "Reimagining Capitalism: Business and the Big Problems" by Rebecca Henderson, in *Maine Public*, April 2018 (podcast interview)

Course Materials:

- "The Future of Mobility: Economic, Environmental, and Social Implications" by George Serafeim and David Freiberg (case)
- "JetBlue: Relevant Sustainability Leadership" by George Serafeim and David Freiberg (case and teaching note)
- "Summa Equity: Building Purpose-Driven Organizations" by George Serafeim and David Freiberg (case)

BEI Affiliated Faculty

Jose B. Alvarez

Senior Lecturer of Business Administration

Max H. Bazerman

Jesse Isidor Straus Professor of Business Administration

David E. Bell

George M. Moffett Professor of Agriculture and Business

Joseph L. Bower

Donald K. David Professor of Business Administration;
Emeritus

Shawn A. Cole

John G. McLean Professor of Business Administration

Martha J. Crawford

Senior Lecturer of Business Administration

Amy C. Edmondson

Novartis Professor of Leadership and Management

Francesca Gino

Tandon Family Professor of Business Administration

Ranjay Gulati

Jaime and Josefina Chua Tiampo Professor of Business
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Paul M. Healy

James R. Williston Professor of Business Administration

Rebecca M. Henderson

John and Natty McArthur University Professor; Founding BEI
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Nien-hê Hsieh

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Geoffrey G. Jones

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