

Why GFI Is a Superb Philanthropic Investment

Accomplishments from July 1, 2017 - June 30, 2018

Prepared for Animal Charity Evaluators

I. Our Mission and Vision

The mission of The Good Food Institute is to harness the power of food innovation and markets to transform the global food system away from conventional animal products and toward plant-based alternatives and clean meat. We envision a world where the most affordable and delicious products are also good for our bodies and the planet.

GFI operates as, essentially, an accelerator and think tank for the plant-based and clean meat market sectors globally. A nonprofit organization, GFI is powered by philanthropy: our progress and impact is made possible thanks to gifts and grants from our family of supporters.

Every time someone chooses to consume alternatives to conventionally produced animal products, their choice has a positive effect on our climate, food security, human health, and animals. Studies consistently show that the primary factors in any consumer's eating choices are **taste, price, and convenience**. Thus, The Good Food Institute is focused on accelerating the market expansion of affordable and appetizing alternatives to industrially produced animal products.

We are taking ethics off the table for consumers and removing animals from industrial systems by making the sustainable and humane choice the default.

A. The Challenge We Address: Industrial Animal Agriculture

Industrialized animal agriculture is a significant contributor to the world's most pressing problems:

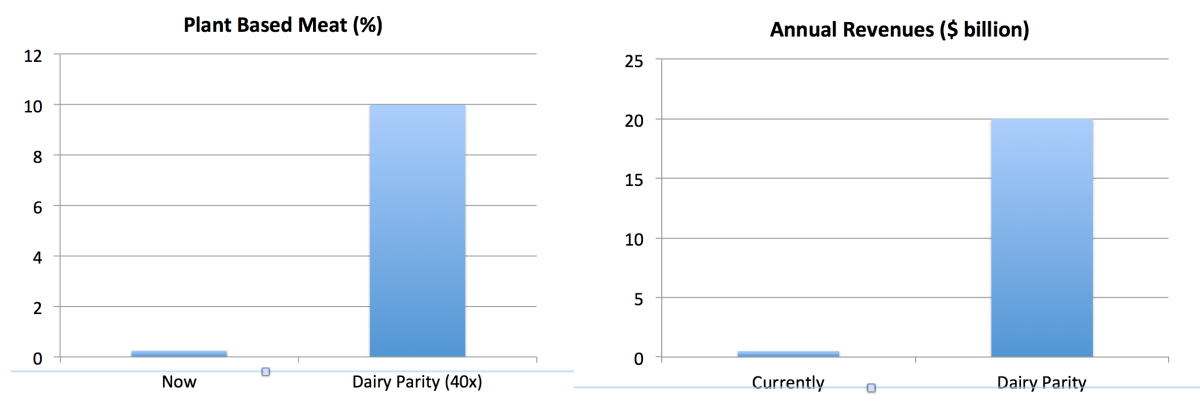
- **Feeding the World:** Growing crops to feed them to farm animals is vastly inefficient, driving up the price of grains and legumes and entrenching global poverty.
- **Climate and the Environment:** United Nations scientists state that raising animals for food is "one of the major causes of the world's most pressing environmental problems, including global warming, land degradation, air and water pollution, and loss of biodiversity."
- **Keeping Antibiotics Working:** The widespread use of antibiotics in farm animals is leading to the development of antibiotic-resistant superbugs; a report from the UK government calls the threat to the human race from superbugs "more certain" than the threat from climate change.
- **Reducing Needless Suffering:** Industrialized animal agriculture subjects tens of billions of thinking, feeling animals to lives of extreme confinement, emotional trauma, painful mutilations, and inhumane slaughter.

B. GFI's Solution—Food Innovation & Markets

Plant-based and clean meat have received increasing attention in recent years. Bill Gates called Beyond Meat “the future of food”; Li Ka-shing (Asia’s richest man) has invested heavily in JUST, Perfect Day, BlueNalu, and other startups; Google founder Sergey Brin funded the first clean meat burger; and former Google CEO Eric Schmidt declared that plant-based meat could improve life for humankind at least tenfold in the near future by mitigating climate change and global poverty.

But the plant-based and clean meat industries are still in their infancy, and both require significant public and private sector research and development to compete with entrenched industries and reach their full potential as quickly as possible.

While plant-based milk commands more than 10 percent of total milk sales in the U.S., plant-based meat weighs in at roughly one-quarter of one percent. Proportionately, that’s about one-fortieth the market share of plant-based milk. Simply closing that gap would create a \$20 billion market that does not currently exist, and it would have a significant positive impact on our environment, food security, global health, and animals. This change would spare almost 1 billion land animals and even more sea animals annually.



GFI uses food innovation and markets to transition society away from industrial animal agriculture. The rise of plant-based milk from a tiny fraction of 1 percent of the milk market in 1990 to more than 10 percent in 2018 was not a function of ethical considerations or education; it was a function of innovation in both product and strategy that greatly expanded the market for these once niche products. GFI exists to catalyze the success of alternatives to animal products so that they equal and then far surpass the success of plant-based milks.

II. GFI's Nine Departments

GFI formed four programmatic departments to fulfill our mission: Science and Technology, Innovation, Policy, and Corporate Engagement. Two departments serve as force multipliers, taking the work of our programmatic departments to the rest of the world and into public consciousness: International Engagement and Communications. Finally, we have three vital support departments: Operations, Development, and Finance.

During this reporting period (July 1, 2017 to June 30, 2018) our team has grown from 12 to 48 professionals. Our staff team is complemented by three senior advisors who dedicate time every week to GFI's mission on a pro bono basis, a slate of top-notch pro bono lawyers, an advisory council of 31 high-profile, highly respected leaders in their fields, and a constant rotation of talented interns. You can meet the team [online here](#), and please see our Organizational Chart, at the end of this document.

A. Science and Technology Department

To date, there has been little scientific work on plant-based or clean meat outside of the private sector. **GFI's Science and Technology (SciTech) Department** develops and promotes the science of plant-based and clean meat, focusing on non-proprietary, open source innovation. GFI's scientists are the global experts in this sector and work to ensure that a roadmap exists for plant-based and clean meat; that the best scientists are engaged in plant-based and clean meat R&D; and that significant funds are directed toward scientific endeavors to transform agriculture away from the industrial farming of animals. The team is led by Director of Science and Technology Dr. David Welch and comprises:

- Senior Scientist Dr. Liz Specht
- Scientific Foundations Liaison Dr. Erin Rees Clayton
- Academic Research Advisor Dr. Allison Burke
- Academic Research Advisor Dr. Elliot Swartz
- Editor & Executive Assistant Renee Bell

GFI's SciTech Department is focused on three principal activities:

Analyzing the State of Plant-Based and Clean Meat Innovation

Until GFI's formation, there was no one-stop source for the latest information on any aspect of plant-based or clean meat. This means that anyone interested in these fields had to dig through volumes of literature—much of it of dubious quality, outdated, or paywall-restricted—and could not access a comprehensive, reliable overview of the science.

Therefore, GFI creates white papers, industry overviews in the form of mind maps, peer reviewed journal articles, and industry-level evaluations of technologies and research projects needed to support the clean and plant-based product industries. These are published as open-source resources on our website, heavily publicized, and continually updated.

Our Technology Readiness Assessments (TRAs) provide information on the product-level readiness to launch a company (i.e., Technology Readiness Levels, or TRLs), as well as industry-level information on new technologies, research, and companies needed to support the market as a whole. Our SciTech Department's scientists also use TRA and TRL evaluations to determine the highest-priority areas for applied academic research and in-depth analysis.

GFI also performs thorough literature reviews on an ongoing basis to remain up-to-date on all publications related to plant-based and clean meat—both directly related to food and in other fields that are applicable for our purposes, such as advances in biomedicine that can be translated to clean meat. The SciTech team works with our Communications Department to disseminate this information through a variety of channels (webinars, blogs, interviews, etc.) to generate excitement in the science

community and foster a better understanding of the need to develop alternatives to conventional meat.

Our SciTech team's highlights this year (July 2017 - June 2018) include:

- Senior Scientist Dr. Liz Specht [wrote the cover story for *Food Technology*](#), the membership journal of the Institute of Food Technologists, which is the largest food science professional society in the world. This magazine reaches IFT's entire membership of more than 17,000 food scientists and others within the food industry. GFI Senior Creative Manager Rose Convery created the cover design.
- Liz's open-access, peer-reviewed paper on applying cell-based therapy technologies to clean meat was published in *Biochemical Engineering Journal*: [Opportunities for Applying Biomedical Production and Manufacturing Methods to the Development of the Clean Meat Industry](#).
- Scientific Foundations Liaison Dr. Erin Rees Clayton wrote a book chapter on plant-based and clean meat for Elsevier's *Encyclopedia of Food Chemistry*. This will serve as an introductory reference on these topics for food science students, professionals looking to enter the food science space, and food scientists wanting to learn about plant-based and clean meat.
- We launched our [Plant-Based Meat Mind Map](#) with outreach to the media and a series of webinars. Elaine Watson from Food Navigator-USA crafted a fantastic summary of the key points in this article, "[We're only scratching the surface when it comes to the potential of plant-based meat, says GFI](#)."
- We published our white paper, [Cellular Agriculture: An extension of common production methods for food](#), co-authored by GFI SciTech intern Valentin Waschulin, M.Sc., and Liz. This paper dives into the technology used by Perfect Day, Clara Foods, and Geltor—producing animal proteins through fermentation.
- Erin contributed to the [Science Breakthroughs 2030: A Strategy for Food and Agriculture Research](#) project. This project was led by the National Academies of Sciences, Engineering, and Medicine with support from the Foundation for Food and Agriculture Research and the Supporters of Agricultural Research (SoAR) Foundation.
- Liz's 30-page clean meat production volume and cost analysis white paper was vetted by external reviewers and shared with dozens of venture capital funds. This paper calculates the cost of the main inputs for clean meat on a per-pound food grade basis. Results inform targets for clean meat price points to achieve economic viability.
- SciTech fellow Miranda Grizio and Liz released a white paper, [Plant-based egg alternatives: Optimizing for functional properties and applications](#). This resource serves as a guide for food manufacturers seeking to swap out eggs with plant-based alternatives and suggests opportunities for additional research and commercialization activity. It has already spurred exciting conversations within investment and food industry circles about how GFI can support their shifting strategy away from animal-sourced ingredients.
- Erin also secured GFI's approval as a liaison to the [International Organization for Standardization \(ISO\)](#) Technical Committee 207 (Environmental Management) Sub Committee 4 (Environmental Performance Evaluation). This group defines the standards for climate bonds/green bonds, among other things. Erin also submitted input to the ISO's first draft of the climate bond standard.

Mobilizing Funding for Academic Research and Early-Stage Commercialization

The SciTech Department generates additional scientific work in alternative food technologies among academic research institutes and startups by seeking funding opportunities to support these endeavors. Over the past year we have identified funding opportunities from private foundations (Bill & Melinda Gates Foundation, Packard Foundation, Foundation for Food and Agriculture Research, etc.) and top governmental grant-making agencies (National Science Foundation, U.S. Department of Agriculture, U.S. Department of Energy, etc.) Because they are deeply immersed in alternatives research, our scientists are well-positioned to handpick the best possible researchers to apply for these opportunities, leveraging funding for the questions we want answered.

GFI also helps investors and venture capital groups better understand opportunities in the plant-based and clean meat industry. As an example of this work, GFI staff met with and presented to more than 80 investors this past year, including more than 25 of the leading U.S.-based venture capital groups, with regard to emerging opportunities in the plant-based and clean meat fields. Following these meetings, Memphis Meats raised \$19 million (\$2 million into the Seed and \$17 million into the Series A). As noted above, we also produced a cost analysis for clean meat to help investors understand how clean meat becomes competitive. This document is already leading to significant additional investment in the clean meat sector.

Erin sent two letters over the past year to the USDA Agriculture and Food Research Initiative (AFRI), USDA's primary competitive grant program, encouraging them to solicit grant proposals for plant-based and clean meat research. Her letters were read by all of AFRI's Deputy Directors, Division Directors, National Program Leaders, and Program Specialists. Erin also worked with our Policy Department to secure language in the Senate Agriculture Appropriations Bill report encouraging USDA to fund plant-based meat research.

Director of Science & Technology Dr. David Welch and Erin gave a presentation on plant-based and clean meat to scientists at USDA's National Institute of Food and Agriculture (NIFA). They then met with seven National Program Leaders for NIFA's Division of Plant Systems to discuss research strategies and next steps for increasing public funding opportunities for plant-based and clean meat. NIFA subsequently solicited proposals for both technologies, for the first time ever.

Finally, GFI is working to mobilize funding to launch two novel research centers: one each for plant-based and clean meat research. The locations of these centers will be selected based on the research portfolios of top U.S. research universities and their commitment to food systems innovation.

Advancing the Research and Commercialization of Plant-Based and Clean Meat

GFI offers entrepreneurs and startups guidance, direct expertise, connections to funding opportunities, and access to external experts to aid in the scientific development of their products. Over the past year, our SciTech Department has supported 211 entrepreneurs in early stages of company development with technical information and direction. We assisted these entrepreneurs in formulating and articulating the scientific aspects of their company proposals to potential scientific co-founders and venture capitalists; offered expertise on product development and process; provided regulatory guidance; shared opportunities for scientific, business, and funding collaborations; and provided technical advice on plant-based and clean meat research. Specifically, we shared our scientific

expertise on computational modeling, crop genome editing, food innovation, cell culture media and scaffolds, bioreactor systems, and even a novel continuous bioprocessing system that has the potential to solve some of the scale-up challenges facing the clean meat industry.

Our SciTech Department also advanced plant-based and clean meat research and commercialization in meetings with 90 established start-ups and larger companies this year, including big food, meat, and life science companies. In these meetings our SciTech team:

- Advised tissue engineering companies from four continents about clean meat science, all of which expressed interest in expanding their operations to include clean meat.
- Consulted with clean meat business-to-business startups that will supply the business-to-consumer clean meat companies with necessary services and products.
- Advised on the expansion of plant-based and clean meat production for dozens of corporations through detailed reviews of their scientific strategy, assessing technical deliverables for fundraising milestones, speaking with investors about their technological novelty, and making introductions to potential strategic partners or service providers based on an in-depth understanding of their specific technical needs and business interests.
- Presented a workshop on the plant-based and clean meat industries to Black & Veatch, an engineering firm based in Kansas City that has a global presence and a long history of expertise designing large-scale facilities in industries such as petrochemicals and telecommunications. The firm is positioning itself to be a leader in infrastructure and facility design for alternative proteins.
- Met with large multinational corporations working in the food industry or adjacent industries, such as regenerative medicine, to provide an overview of the plant-based and clean meat industries and discuss opportunities for new products and technical innovation.

Our scientists also worked closely with innovation incubators and with leading food industry partners to scout technologies that address barriers in bringing plant-based and clean meat to market. We developed relationships with major food manufacturers and ingredient suppliers to determine their needs, serving as a bridge to food innovation and biotechnology incubators with unique insight into plant-based and cellular agriculture technologies.

Increasing Scientific and Academic Research: At present, there is limited awareness of plant-based and clean meat technologies at the premier schools for food science, tissue engineering, and synthetic biology. While thousands of students and researchers work in these fields, most are not yet aware of the opportunity to use their expertise to address global problems by creating affordable and sustainable alternatives to industrial animal agriculture.

To increase the number and caliber of academic researchers focusing on plant-based and clean agriculture research, GFI has identified the top dozen universities for plant-based meat research and the top dozen for clean meat research. We also reached out to 231 researchers at universities this year to encourage them to use their expertise for innovative plant-based and clean meat research projects. Highlights of this outreach included:

- Brainstorming on a clean meat cell line repository project with University of Oslo stem cell research group leader Dr. Gareth Sullivan.
- Meeting with Nobel laureate Professor Tom Cech to discuss a project in his lab investigating the use of CRISPR to accelerate clean meat research.

- Meeting with Nancy Witty, CEO of the International Society for Stem Cell Research, to discuss opportunities for stem cell scientists in the clean meat industry.
- Meeting with Professor Chris Smart, Director of the School of Integrative Plant Science at Cornell University, regarding potential plant-based meat and clean meat research project collaborations and campus lectures.
- Participating in a research team comprising five universities (led by Michigan State) that is submitting a five-year \$10 million grant to the USDA Sustainable Agricultural Systems funding opportunity focused on developing protein-rich food crops.

To further stimulate research at these universities and others around the world, GFI secured funding for and prepared to launch competitive grants programs for plant-based and clean meat research, and awarded our first research grant this year to Marie Gibbons to conduct clean meat research at Harvard Medical School (HMS). See Marie's page [on the HMS website](#) ("Research Interests: **Clean meat production...**") and learn about her groundbreaking work [on the GFI Blog](#).

Erin finalized GFI's plant-based meat research portfolio, a document summarizing some of the research projects we have identified as having significant potential to advance the plant-based meat industry, including the development of an academic plant-based meat research center.

University Curricula: The SciTech Department, in collaboration with universities and plant-based and clean meat companies, is developing on-campus and online courses and workshops to educate students about the science and techniques required to develop the next generation of alternatives to animal-based foods.

As a result of GFI's work with UC Berkeley on the first plant-based meat classes in Spring 2017, UC Berkeley launched a permanent "Program for Meat Alternatives" that expanded their efforts to explore this field, starting in Fall 2017 with a class entitled "Plant-based Meat 2.0." Academic Advisor Dr. Allison Berke helped plan the class curriculum and judged students' final projects, which included CRISPR to remove unwanted taste-affecting compounds from pea isolate, decellularized scaffolds to sell to clean meat companies, plant-based pork dumplings for the Chinese market, plant-based oyster sauce, plant-based tempura shrimp, jackfruit lunchables, plant-based chicken called "plickin", and a savory plant-based breakfast spread (an alternative to lox schmear).

UC Berkeley's Spring Plant-Based Meat Innovation Lab, also designed by GFI, expanded from plant-based meat to include clean meat as one of the challenge areas that students could address. The course enrolled 35 students in the Spring semester and attracted multiple industry sponsors: Givaudan, Ingredion, Hampton Creek (now JUST), and IndieBio.

GFI met with faculty at Stanford, NYU, and Penn State to explore launching plant-based and clean meat undergraduate courses at each of these universities. We are launching a course on the science of plant-based and clean meat at Stanford University and via a MOOC (massive open online course) in the fall of 2018.

Conferences and Events: GFI's SciTech Department advanced plant-based and clean meat research and innovation at dozens of events this past year reaching thousands of scientists, academic researchers, entrepreneurs, investors, students, and companies. Highlights include:

- Erin helped plan and lead the Pulse Protein Innovation Summit in collaboration with the

American Pulse Association and USA Dry Pea & Lentil Council. More than 90 hand-picked attendees from universities, government, and corporations participated, sharing their expertise regarding the most promising directions and critical research needs for expanding plant-based meat end uses for pulse crops.

- Liz delivered a keynote talk at the 3rd International Conference on Cultured Meat in Maastricht, Netherlands, on using Technology Readiness Assessments to accelerate the path towards commercial realization of clean meat.
- David presented remarks about the importance of plant-based and clean meat agricultural research at the board meeting for the Foundation for Food and Agriculture Research (FFAR), a grantmaking organization with a \$200 million annual budget. David discussed current challenges in agricultural innovation and proposed areas of focus to FFAR's leadership. He connected with academic scientists, USDA researchers, food and technology non-profits, farmers, and industry experts. After the board meeting, the SciTech team continued to meet with FFAR about partnering on plant-based and clean meat projects.
- Liz presented two three-hour deep-dive seminars via [Impact.tech](#) – one on plant-based food technology and another on cellular agriculture – to hand-picked audiences of investors and entrepreneurs who are actively involved or seeking to get involved in these industries. The VC firms present in each session represented over \$1B in total assets.
- Our SciTech team's work at the Institute of Food Technologists (IFT) annual conference was covered in [this article](#), which was re-published in Meat +Poultry with the headline "[The future of clean meat continues to grow](#)." Our SciTech team's work also landed the #3 spot on [Food Navigator's](#) "Guide to IFT" list of hottest topics, and inspired [this recap](#) by IFT's director of publications and the editor of the journal *Food Technology*.
- Liz presented a webinar on "clean label" considerations in the plant-based meat industry for a Food Navigator online conference; the audience included more than 800 members of the food industry, and the event was subsequently [covered in a Food Navigator article](#).
- Liz presented at the UC Davis Innovation Institute for Food and Health Innovators Summit on the opportunity to use biotechnology to advance sustainable food production through the development of plant-based and clean meat.
- David lectured on the science of plant-based and clean meat at Columbia University and NYU Law School and participated in a panel on the future of sustainable food at the Innovation Forum.
- Allison delivered a talk on plant-based and clean meat at the Silicon Valley AgTech Conference and met with protein-focused entrepreneurs.
- Liz spoke on clean meat at the American Meat Science Association's annual Reciprocal Meat Conference in Kansas City and met with several meat scientists afterwards to discuss research opportunities in clean meat.
- GFI Executive Director and Co-Founder Bruce Friedrich and Liz spoke at the International Consortium on Applied Bioeconomy Research at The World Bank alongside Lou Cooperhouse (Director of the Rutgers Food Innovation Center and co-founder of BlueNalu) and Pat Brown (founder and CEO of Impossible Foods).
- Liz spoke on a panel on alternative proteins at Future Food Tech New York alongside panelists from Food-X, Memphis Meats, and Tyson Ventures. She also met with nearly a dozen companies ranging from crop breeders to fungal protein producers to clean meat companies.
- Liz [chaired a panel on alternative proteins](#) (alongside Derek Sarno from Tesco, Tim Ingmire from Pepsi, Neel Varde from Roquette, and Chris Kerr from New Crop Capital) and led a roundtable discussion on clean meat at the Future Food-Tech conference in London.

B. Innovation Department

GFI was conceived because we saw the success of Impossible Foods and Beyond Meat in creating the next generation of plant-based meats and expanding the market for these products. These two companies, which did not even exist a decade ago, have raised hundreds of millions of dollars in just the past five years. All this investment has been directed into competing with the products of industrial animal agriculture, and of course, none of that money would have otherwise been dedicated to protein diversification efforts. The opportunity to create and foster many more such companies—thereby bringing billions of private sector dollars to the cause of transforming industrial animal agriculture—was the impetus behind creating GFI.

Our Innovation Department is creating new companies, recruiting and supporting entrepreneurs in creating their own companies, and helping existing companies appeal to more consumers and become more successful, thereby generating direct competition with industrially produced meat. The team is led by Director of Innovation Brad Barbera and comprises:

- Business Analyst Brianna Cameron
- Business Analyst Shannon O'Neill
- Business Innovation Specialist Aylon Steinhart
- Senior Consumer Research Scientist Dr. Keri Szjeda
- Strategic Implementation Specialist Mike Fotinatos

GFI's Innovation Department is focused on two principal activities:

Inspiring the Next Generation of Innovators

GFI's Innovation Department is focused on moving the best and most successful entrepreneurs, tissue engineers, synthetic biologists, plant biologists, and others into alternative protein technologies—both as founders of new and transformative startups and as employees at plant-based and clean meat companies.

To this end, GFI reaches out to premier schools for business and entrepreneurship. We currently have GFI Fellows at six of the top business schools in the U.S. and we are recruiting fellows at other top schools. GFI staff deliver presentations in classes, departmental symposia, and student forums with the goal of markedly increasing the number and caliber of entrepreneurs working on plant-based and clean meat products.

Highlights of our university engagement efforts over the past year include the creation of three framework documents for structuring our campus visits and student engagements:

- **Campus Visit Outline / Battle Plan:** details how an ideal campus visit is structured, along with mapping out a weekly workplan for the upcoming semester.
- **Funnel Model: MBA Presentations:** outlines how a student progresses from student to founder. This document will be adjusted as we observe how this process works in practice.
- **KPI's: MBA Presentation:** helps in measuring the most important results from presentations and allows us to compare the results from one presentation to another. This will help drive improvements and enable us to set data-focused goals.

Campus Fellows Program: GFI launched our Campus Fellows Program, a high-impact fellowship on top campuses for entrepreneurship and tissue engineering to inspire the brightest and most driven scientists and entrepreneurs to start or join plant-based and clean meat companies. Campus Fellows have a designated list of tasks, all of which are aimed at ensuring that every student who graduates from a top business school in the U.S. is aware of the opportunities in plant-based and clean meat.

Supporting the Most Innovative Plant-based and Clean Meat Companies

GFI is committed to the success of good food companies in the marketplace. We work with both startups and established companies on all aspects of their progress, including writing and editing business plans, conducting market research and branding exercises, recruiting top talent, and mentoring on all facets of starting and running a company. We also collaborate with other GFI departments to help startups with regulatory issues, public relations, scientific and technology questions, and more.

With the aim of accelerating the growth of the good food startup ecosystem, GFI creates and maintains a variety of high-impact resources to help aspiring entrepreneurs turn their ideas into high-growth and impactful companies. The first resources in this journey are the Startup Manual and the GFIdeas community. The Startup Manual is a highly detailed step-by-step guide to creating a successful company in the space. The GFIdeas community of entrepreneurs, which grew to 403 members over the past year, is a forum for founders to meet and support each other and discuss challenges they face and solutions they find. We launched the GFIdeas Directory to facilitate connections between entrepreneurs in the community and help conversations continue outside formal GFI channels. The directory is available to all GFIdeas community members and contains information on each member, including date added, contact info, LinkedIn profile, a brief bio, and descriptions of what they're working on, what challenges they're facing, and how they can help others in the group.

The second group of resources are GFI's databases, which have been created and/or expanded over the past year. These include our:

- Talent database, which consists of professionals, scientists, and students seeking to develop careers in this space. This serves as a resource for employers and founders looking for mission-aligned talent, including employees, contractors, and advisors.
- Supplier database, which helps startups connect with the business partners essential to growing their business.
- Distributor database, which contains information about distributors, redistributors, wholesalers, importer/exporters, and foodservice management companies that are creating clean meat and plant-based alternatives to animal products, from pre-market startups to international corporations. This database includes VC fundraising and M&A information.
- Referral database, including marketing agencies, lawyers, food science contract labs, and more.
- A [global map of accelerators and incubators](#).

Other resources include:

- A [slide deck to explain and visualize the plant-based meat manufacturing process](#) to early-stage entrepreneurs.

- A [Facebook group for students and recent grads](#), which serves as an online community for forward-thinking students and recent graduates who are interested in the plant-based and clean meat space.
- Innovation Office Hours - a monthly call to answer general interest questions. One or more members of the Innovation team is available during each call to answer questions.

GFI's Innovation team has created additional guides and publications over the past year. Highlights include:

- Business Analyst Brianna Cameron created a **summary of research on the global plant-based meat, egg, dairy, and protein market**, including estimates of market size and predicted growth, as well as consumer purchasing trends and motivations. This summary helps us to keep track of what we know about the plant-based market domestically, internationally, and globally, so that we can leverage data to demonstrate market opportunities to key stakeholders. It also helps us to understand methodological limitations with the data that we have, as well as identify gaps in our knowledge that require further investigation.
- In collaboration with the Plant Based Foods Association, Brianna [defined and obtained a custom data set from prominent market research firm Nielsen Corp](#) representing the most comprehensive and in-depth view of sales, growth, and distribution metrics within the retail sector of the plant-based food industry. We now have good data on all of the plant-based meat and dairy companies in the U.S., which has proven extremely helpful for a variety of our projects.
- Brianna launched the [Commercialization Opportunities in the Plant-based and Clean Meat Markets](#) to the GFIdeas community. This is the updated version of the former “white space company ideas” document, re-framed as a menu of commercialization opportunities that could be pursued by a startup or an existing industry player. The document now features content tailored for entrepreneurs and the science and food industries, including guidance on how to engage with GFI and access the variety of resources we offer to foster their success.

In addition to producing resources that have catalyzed a growth in activity and effectiveness within the innovation ecosystem, we have offered individualized guidance to 20 venture capitalists and investors, eight incubators/accelerators, 10 large corporations, and 157 entrepreneurial teams and startups. In addition to offering our scientific expertise to entrepreneurs and startups, we offered them feedback on their pitch decks, business plans, and accelerator applications and provided introductions to investors and large corporations (as customers or suppliers). GFI has also partnered with serial entrepreneurs to start three companies from scratch, based on our white space ideas document: Good Catch, which focuses on plant-based seafood; Good Dot, which produces plant-based meat in India; and Dao Foods, which is focused on bringing plant-based and clean meat to China.

Additional GFI Innovation Initiatives

Industry-Leading Consumer Research: GFI ensures that startups, established companies, and policy focused agencies are provided objective and impactful research to aid their understanding of consumers. By both conducting our own studies and coordinating the research of other academics and NGOs, GFI ensures that truthful and actionable information is available to support marketing and communication efforts, product and package development, and policy guidance.

For example, based on available evidence, GFI has convinced multiple plant-based meat companies not to use the word vegan on the front of their packaging, because studies make very clear that the word “vegan” is a turnoff for non-vegans, thereby limiting consumer uptake. Additionally, GFI conducted consumer research that determined that the nomenclature “clean meat” should be the phrase we use for that technology, and [we advocated for a shift](#). Based on GFI’s work, [“clean meat” has become the preferred phrase](#) for meat grown directly from cells.

Highlights of GFI’s consumer research accomplishments this year include:

- Senior Consumer Research Scientist Dr. Keri Szejda, in collaboration with Jo Anderson (Faunalytics), launched the plant-based and clean meat (PBCM) Consumer Research Community, which provides a space for researchers to collaborate and share resources on a Slack group and monthly Zoom calls. Forming this collaborative group has helped to coordinate the development of new research on the best strategies for generating greater consumer acceptance of plant-based and clean meat.
- Keri completed a comprehensive peer-reviewed literature search on consumer acceptance of plant-based meat. This review identified gaps in the literature requiring further research and will help GFI to identify the most influential studies for increasing consumer acceptance of plant-based and clean meat.
- Keri presented to Harvard’s Behavioral Insights Student Group (BISG) on behavioral science applications for plant-based and clean meat consumer research. BISG brings together some of the world’s leading decision research scholars, behavioral economists, and other behavioral scientists, and develops programming for Harvard’s BISG.

Amplifying Plant-Based and Clean Meat Innovation Around the U.S. and World: GFI’s Innovation team is invited to speak about plant-based and clean meat to audiences around the world. Highlights of our speaking engagements this year include:

- Business Innovation Specialist Aylon Steinhart presented to more than 600 food industry professionals on plant-based and clean meat at the Global Food Trend and Tech Conference in Seoul, South Korea. (Note: For this and all other similar speaking engagements, our expenses are paid by the conference, and we frequently also receive an honorarium.)
- Director of Innovation Brad Barbera delivered a keynote address on clean meat technology at the Protein Trends and Technologies Conference in Chicago. More than 200 executives and technologists from companies such as PepsiCo, Archer Daniels Midland (ADM), Mondelez, Abbott, and General Mills were in attendance, many of whom approached Brad for further information following the presentation.
- GFI’s SxSW panel, “Plant-Based and Clean Meat Will Save the World,” with Beyond Meat, Memphis Meats, and Lighter, introduced hundreds of SxSW attendees to the benefits of plant-based and clean meat (and many thousands more through the program and other promotions).
- Brad spoke at three huge international events: the Stockholm FoodTech Big Meet, the EAT Forum Stockholm, and the 121 Tech Investment Conference in Hong Kong. Numerous investors, entrepreneurs, and leaders in other advocacy groups sought out individual conversations and follow-ups.
- Aylon presented at the Walmart Global Design Summit to more than 100 Walmart eCommerce team members, providing tangible examples of how Walmart could promote more plant-based products in their online store.
- Brad presented a keynote on the future of the protein market at the national sales conference for

Basic American Foods, the industry leader in shelf-stable potato and bean products for foodservice providers.

- Brad participated in a panel discussion at the Globe Forum 2018 Leadership Summit for Sustainable Businesses, where he introduced the dangers that animal agriculture present to the environment, as well as the promise of plant-based and clean meat. This was the first time these topics were discussed at the 20-year old global environmental conference.
- Future Food Tech is an event that is sponsored by many of the biggest names in food, from ADM to Cargill. Bruce led a round table lunch discussion on clean meat and participated in a panel about cellular agriculture.
- Aylon appeared in the documentary “Food Makers: A Journey Around the Future of Food” along with food innovation leaders such as Pat Brown, Ethan Brown, Dr. Mark Post, and more. Aylon spoke on the leading role of plant-based and clean meat in the future of food and attended the premiere film screening at the AirBnB headquarters.
- Bruce moderated a panel on plant-based alternatives to industrial animal agriculture at the Circle V festival in Los Angeles. The founders of Beyond Meat, Miyoko’s Kitchen, and New Crop Capital served as panelists. Jane Velez-Mitchell filmed the panel and [posted it on Facebook](#).
- Our Innovation team members delivered presentations and guest lectures and participated in panels and roundtables focused on plant-based and clean meat innovation to students and faculty at Harvard, MIT, Babson, Columbia, NYU, Georgetown, Stanford, Northwestern, Yale, U. Penn, UC Berkeley, and University of Chicago. Highlights include:
 - Aylon organized panels at three of the top five business schools in the country:
 - Kellogg School of Management (moderator from Bunge, reporter from the *Wall Street Journal*, panelists from Tyson Foods, Springboard Brands, Kraft Heinz (Boca), Memphis Meats, and GFI).
 - The Wharton School (moderator from the *Philadelphia Enquirer*, panelists from SeaCo, New Crop Capital, NUMU, and GFI). This panel was featured as the business cover story of the Sunday print edition of *The Philadelphia Inquirer*, with circulation of 312,000.
 - Stanford University (moderator from *The Guardian*, panelists from Memphis Meats, JUST, Perfect Day, and GFI).
 - Bruce appeared on a panel at the Social Impact Conference at Harvard Business School that focused on replacing animal agriculture with plant-based and clean meat alternatives. Co-panelists were Pat Brown, CEO and founder of Impossible Foods; Arturo Elizondo, CEO and founder of Clara Foods; and Seth Bannon, partner and founder of Fifty Years VC.
 - Aylon and Team Expansion Leader Ana Orth presented at UC Berkeley’s Haas School of Business “Edible Education 101” course, opening for Michael Pollan and Liz Carlisle.
 - Bruce spoke at Harvard Law School at a food law conference alongside Mosa Meats founder Dr. Mark Post, Finless Foods founder Mike Selden, and Harvard Law Prof. (and former GFI policy director) Nicole Negowetti.

C. Policy Department

Alternatives to the products of industrial animal agriculture will profit from having both regulatory and legislative advocates in Washington. **GFI's Policy Department** is focused on creating a clear pathway to market for clean meat and leveling the playing field for plant-based alternatives to industrially produced animal products. The Policy team is led by Director of Policy Jessica Almy, Esq., and comprises:

- Senior Policy Specialist Dr. Ken Forsberg
- Senior Environmental Scientist Dr. Isaac Emery
- Senior Regulatory Counsel Elizabeth Derbes, J.D., M.P.H.
- Policy Coordinator Cameron Meyer Shorb

The Policy Department directs three primary initiatives:

Creating a Clear Path to Market for Clean Meat

GFI works to ensure that clean meat can come to market without unnecessary regulatory hurdles. In-house attorneys and outside counsel work together to map the path forward for clean meat in the United States and other markets. GFI's Policy team communicates with elected officials and administrative agencies to advocate for a clear and efficient path to market that ensures consumer safety and confidence without being overly burdensome to producers. We also coordinate regulatory strategy among the companies in the sector.

In support of this endeavor and our full portfolio of policy priorities, we develop relationships with other nonprofit organizations, including those focused on environmental, global hunger, consumer rights, and food safety issues, to build alliances and support for innovative technologies. For example, GFI is a member of The National Alliance for Nutrition and Activity (NANA) and an affiliate member of the Plant Based Foods Association (PBFA). Engaging the nonprofit community on supporting regulatory approval of clean meat is an essential part of our regulatory strategy to bring clean meat to market and an initiative that GFI is uniquely qualified to lead.

Highlights in creating a clear path to market for clean meat include:

- Policy Director Jessica Almy, Esq., wrote a memorandum on regulatory pathways for clean meat in the United States. Briefly, the memorandum identifies two potential paths forward under the current regulatory scheme: U.S. Department of Agriculture regulation of (some kinds of) clean meat as “meat” and Food and Drug Administration oversight as a food substance “generally recognized as safe” (GRAS). We are actively coordinating this effort with all of the clean meat companies.
- Jessica sent a letter to the 51 members of the House Appropriations Committee, urging them to strike language in the spending bill that would require that USDA promulgate regulations on clean meat. Rep. Rosa DeLauro (D-Conn.) proposed an amendment to strike, which failed 30-to-21. Fortunately, Senate appropriators did not include the provision in their spending bill—so the provision's ultimate fate was still undecided as of the conclusion of this evaluation period.

- Jessica met with Orrick attorneys in the United Kingdom, France, Italy, and Japan, as well as the firm's pro bono coordinator, to discuss the importance of clean meat and GFI's regulatory initiatives. The attorneys launched pro bono legal research into clean meat regulatory pathways in the U.K., European Union, and Japan.
- Jessica wrote a project memo on clean meat regulation internationally. The memo sets forth a vision for identifying the regulatory options for clean meat in key markets and producing white papers that clean meat producers can use in deciding where to sell their products. She also edited drafts of memoranda on clean meat regulation in Australia/New Zealand and India, prepared by legal interns Jason Rudaizky and Nathaniel Levy.
- Jessica sent a memorandum exploring the existing regulatory pathways for clean meat to Memphis Meats, JUST (formerly Hampton Creek), and Finless Foods. She discussed regulatory strategy in depth on separate calls with Memphis and JUST.
- Jessica and our colleagues at Memphis Meats met with officials at the Orthodox Union about kosher certification for clean meat. One of their officials was subsequently quoted effusing to *Ami* magazine: "You have to remember, that only about 15% of everything that gets slaughtered is going to the kosher market... But once you're allowed to make [clean] meat, 100% of it would be kosher!" We remain very optimistic about the possibility of kosher certification for clean meat.
- Jessica circulated a survey on regulatory issues to the U.S. clean meat companies. The results, which will be anonymized and only be circulated to the companies themselves, tell us what issues are most important to them and give us an idea of how involved they want to be in regulatory strategy.
- GFI leads quarterly meetings for clean meat companies to discuss regulatory oversight of clean meat in addition to regulatory and other policy priorities that impact them.

Encouraging Public Investments in Research and Development

Our Policy Department meets with congressional offices to communicate the vital need for federal agencies to direct funding into research and development for plant-based and clean meat. Highlights include:

- Thanks to GFI efforts, the Senate Agriculture Appropriations Report (which accompanies the spending bill) included language that encourages USDA to support research into plant proteins from crops such as chickpeas, sorghum, and lentils. This is the second year we've been successful in getting the language included. Cite: FY2019 Senate Agriculture Appropriations Report 115-259 (May 24, 2018).
- Jessica spoke at the first-ever congressional briefing on clean meat research and development, which was sponsored by the House R&D Caucus and its chairs Rep. Barbara Comstock (R-Va.) and Rep. Bill Foster (D-Ill.).
- Senior Policy Specialist Dr. Joanna Grossman sent GFI's list of farm bill priorities and recommendations to every office in the House of Representatives and Senate. GFI's letter outlined initiatives for increasing federal investments in plant-based and clean meat products, as well as other avenues to enhance the sustainability of our food supply and level the playing field for plant-based foods.

GFI supports public investment in plant-based and clean meat, produces original research, builds scientific partnerships, and meets with policymakers to push back against the serious environmental

consequences of industrial animal agriculture and the effects of these harms on human health and well-being. We develop and deliver presentations for a number of policy-relevant contexts that present clean meat and plant-based meat as a key solution to pressing global problems. We write reports that provide a scientific foundation for legislative and regulatory recommendations and testify before governmental bodies on how alternative proteins have lower environmental impacts. Highlights include:

- Bruce participated in a roundtable at the prestigious [Concordia Summit](#). Subsequently, the organizers of the roundtable put together a sign-on letter which was sent to everyone on the House and Senate agriculture committees, and it included our recommendation: “One specific area where the government should make a significant investment is in the field of plant-based and cellular protein (clean meat), whose market adoption stands to offer solutions to food insecurity, climate change, and nutritional health around the world.”
- Environmental Scientist Dr. Isaac Emery conducted a literature search for scientific research related to life cycle assessment of conventional animal agriculture and clean and plant-based meats. The roughly 40 papers he identified will support a full review of opportunities and risks for developing an improved LCA of plant-based and clean meat technologies.
- Isaac reviewed a recent scientific article on the implications of removing animals from US agriculture. The flawed study received favorable press in some online news outlets as well as *Science* magazine. In response, Isaac wrote an [in-depth critique of the article and a short summary response](#), which was published by the *Proceedings of the National Academy of Sciences* (PNAS).

Leveling the Playing Field for Plant-Based Products

Our Policy Department works with the Food and Drug Administration (FDA), USDA, members of Congress, and state legislatures to ensure that plant-based meats are competing on a level regulatory playing field with their animal-based counterparts.

Plant-Based Product Labeling: On the labeling front, we advocate for a common-sense approach to food product labeling that ensures compound names such as “almond milk” and “veggie bacon” are acceptable and permissible on food labels. Highlights include:

- GFI filed a [12-page comment](#) to the USDA in response to the U.S. Cattlemen’s Association’s petition asking the USDA to bar the use of meat and beef terms on plant-based and clean meats. We filed on behalf of GFI, Tofurky, Lightlife Foods & Field Roast Grain Meat Co., Impossible Foods, Finless Foods, Sweet Earth Foods, and Hungry Planet.
- GFI created a fact sheet on the First Amendment and plant-based meat and dairy labeling.
- GFI [supplemented](#) the docket of our 40-page [regulatory petition to the FDA](#) on compound naming conventions (such as soy milk, cashew cheese, and rice noodles) with three cases decided since the petition was filed. The industry orchestrated a write-in campaign among dairy producers opposing our petition.
- After GFI learned from [public disclosures](#) that the USDA had met with the American Meat Institute to discuss the use of meat terms on “non-meat” products, Bruce, Jessica, and pro bono counsel Nigel Barrella met in-person with the director of USDA’s Labeling and Program Delivery Staff and her deputy to discuss meat terms on plant-based and clean meat labels. We

were relieved to learn that the agency's perspective generally aligns with our own: labels that do not mislead consumers are acceptable.

- GFI filed an [amicus brief](#) in the Ninth Circuit case, *Painter v. Blue Diamond*. As IEG Policy reported, our position supports the lower court's ruling that "no reasonable consumer could be misled" by the term almond milk on labels. Our brief, crafted by Nigel, is a superb introduction to the issues around these labeling controversies.
- Senior Regulatory Counsel Elizabeth Derbes, Esq., filed GFI's legal argument in opposition to a regulatory petition before the FDA asking that almond milk substitutes be labeled "imitation milk" under 21 C.F.R. § 101.3(e).
- Jessica submitted written testimony to a Missouri House Agriculture Policy Committee on behalf of Beyond Meat, Hungry Planet, and GFI opposing a bill that tries to restrict the use of meat terms on labels by making it unlawful to misrepresent a product as meat if it is not from a slaughtered animal. We are part of a coalition working on this bill, and Jessica was quoted in multiple media stories related to it, included in our Media Highlights, below.
- Jessica's speaking engagements included: a panel at the Food and Drug Law Institute's Food Advertising, Labeling, and Litigation Conference in Washington, DC.; the American Bar Association's webinar "Misleading Food Labeling and Advertising under the Lanham Act and the FDCA"; the CLE International Food Law Conference on Innovative Foods (together with Eric Schulze of Memphis Meats and Myra Pasek of Impossible Foods); and New York University School of Law's Animal Law Seminar.

Plant-Based Food Lobbying: GFI's Policy Department actively lobbies to ensure that plant-based foods can compete on a level playing field in the marketplace with their animal counterparts.

Highlights include:

- Joanna presented on the importance of increasing our consumption of plant-based foods at an invitation-only USDA session focused on the 2020 dietary guidelines.
- Joanna sent a letter and detailed factsheet on the Opportunities for Fairness in Farming Act and the Voluntary Checkoff Program Participation Act to all 535 Members of Congress. These bills are two of GFI's legislative priorities for ensuring that opaque USDA checkoff programs that funnel money into lobbying for conventional animal agriculture industries do not disadvantage plant-based products.
- The Policy and Innovation departments together submitted a comment to the USDA on foods that should be creditable under the Child Nutrition Programs. If the USDA accepts our position, schools and care facilities would be able to use federal funding to serve tempeh, seitan, and soy- and pea-based milks.

FDA Engagement: GFI engages with the FDA to advocate for fair and efficient regulatory oversight of novel ingredients, such as new formulations of plant proteins, used in plant-based and clean food products. One issue of concern is the agency's current policy on safety testing, which requires the use of animals. We have met with the FDA to urge the agency to rethink this approach and to gain insight into what alternatives would be available to companies. We have also reached out to companies in this sector, offering to work with them to help move the FDA away from animal testing in its review of specific ingredients.

We sued the FDA over its failure to produce records about an interagency working group on clean meat under FOIA within the statutory deadline. We reached a settlement in our [Freedom of](#)

[Information Act \(FOIA\) lawsuit](#) in exchange for the agency's release of information previously redacted in four documents and our attorney's fees. Prior to our lawsuit, the FDA had only produced a few pages of documents; once we sued, it provided nearly 1,000 pages of responsive documents.

D. Corporate Engagement Department

GFI's Corporate Engagement Department helps corporations understand that plant-based meats have the potential to be highly profitable and meet the growing demand from consumers for more plant-based products, while also meeting their environmental, social, and governance (ESG) goals. We meet with the top executives at the most successful chain restaurant and grocery stores, as well as with major food companies and manufacturers of plant-based meat. Our goal in all cases is to increase the quality and quantity of plant-based products in the marketplace and to prepare businesses to seize the vast commercial opportunities for clean meat in the coming years. The team is led by Director of Corporate Engagement Alison Rabschnuk and comprises:

- Senior Marketing Manager Caroline Bushnell
- Corporate Engagement Specialist Zak Weston
- Executive Assistant Vanessa Assaro-Aluisa

GFI's Corporate Engagement Department is focused on four principal initiatives:

Big Food & Meat Company Outreach

A key goal of GFI's Corporate Engagement Department is to develop relationships with senior leadership at all of the top food companies in the world. This past year, we established relationships with 17 big food and meat companies. We shared market overviews of the plant-based sector, provided introductions to startups, and helped companies understand the technical progress that has been made in this sector. Highlights include:

- Director of Corporate Engagement Alison Rabschnuk presented an in-depth overview of the plant-based and clean meat sectors from business, marketing, and technical perspectives to 80 people attending a top-40 U.S. meat company R&D Symposium.
- Bruce Friedrich and Liz Specht presented to the CEO, CFO, board chair, and other top execs of one of the largest food companies in the world. Bruce talked about the plant-based and clean meat trajectory as the future of meat (similar to [his TEDx talk](#)), and Liz talked about plant-based and clean meat from a scientific perspective. After the presentations, many of the company's top executives lined up for our articles about the two technologies (Institute of Food Technologists, [Biochemical Engineering](#), [Plant-Based Meat Mind Map](#)). We have been working with this company since our presentations as their R&D Team does a deeper dive into plant-based and clean meat.
- A Q&A with Bruce about plant-based and clean meat took up half a page of the daily program at the Fancy Foods Show in San Francisco, allowing us to reach more than 10,000 food industry professionals with information about plant-based and clean meat. Bruce was also interviewed by the prominent food consultant Phil Lempert (aka, the Supermarket Guru), who was extremely complimentary of GFI.
- A team of GFI staff including Alison and Liz spent an afternoon presenting the business and science case for both M&A and R&D investments in plant-based and clean meat to one of the

largest meat companies in the world. We have given this same presentation to multiple other global food conglomerates, including multiple top 10 food companies.

- GFI played a key role in making introductions between plant-based meat flavor and processing companies and startups, academics, and ingredient manufacturers.

Our Corporate Engagement Department closely collaborated with our SciTech team throughout the year to evaluate opportunities to replace industrially produced meat, eggs, and dairy ingredients in pre-made or processed foods. This strategy has the potential to place plant-based meats in schools, prisons, and hospitals via foods such as lasagna, enchiladas, sloppy joes, pulled “pork,” and macaroni and “cheese,” and plant-based milk and eggs via cookies, crackers, and snacks that may contain milk or eggs as standard ingredients.

Plant-Based Manufacturer Outreach

The Corporate Engagement Department cultivates relationships with manufacturers of plant-based meat, eggs, and dairy. We met with 70 plant-based manufacturers this year to learn more about their products and distribution plans and to help them stay abreast of opportunities and research that can help their businesses grow. We further represented their interests to companies that expressed interest in connecting with plant-based product manufacturers. We prepared for the launch of the Plant-Based Insider newsletter in Summer 2018 as a way to more efficiently communicate the many opportunities that come through GFI. (Sign up to receive this newsletter [here](#).) We have excellent relationships with all of the exclusively plant-based manufacturers, and it is exceedingly valuable to have one central contact — GFI’s Corporate Engagement Department — for these relationships.

Restaurant Outreach

When one chain restaurant with 1,000 locations adds a plant-based entrée where previously there were none, that is a significant victory for animals, the environment, food security, and global public health.

Our Corporate Engagement Department is developing relationships with corporate executives at the top restaurants across the country in order to increase the quality, quantity, and promotion of their plant-based entrées. We engage in direct outreach and attend conferences for restaurant professionals. In order to make the transition to plant-based entrées easier, we offer our plant-based meat, dairy, seafood, and egg product database to all restaurants and offer to make connections to product manufacturers.

Of the top 100 chains, 67 do not yet have a single plant-based entrée. We intend to engage all 100 to ensure that as many as possible have an excellent plant-based entrée as quickly as possible. GFI met with 24 of these top restaurant chains in the U.S. this past year.

We released our first annual Good Food Restaurant Scorecard and [supporting website](#), which ranked the top 100 chain restaurants according to a proprietary rubric that evaluated their menus and promotion of plant-based eating. The report card scores each restaurant’s menu according to the number and promotion of plant-based entrees they include. The rankings are broken out by Breakfast, Lunch/Dinner, a Composite of the two, and by segment (e.g. quick-service (QSR), limited-service (LSR), etc.). Highlights include:

- GFI sent the scorecard to more than 400 executives at the top 100 U.S. restaurant chains and mailed hard copies to over 300 executives.
- Alison spoke with executives from more than a dozen of the top 100 restaurant chains about their ranking on our Good Food Restaurant Scorecard and discussed ways that they could add more plant-based entrées to their menus.
- Corporate Engagement Specialist Zak Weston completed case studies of six restaurants — one national chain (Top 200), three smaller chains and two chef-led brands — that carry plant-based entrées. These case studies, added to [GoodFoodScorecard.org](https://www.GoodFoodScorecard.org), bolster the business case for why restaurants should offer more plant-based options. In the case studies, restaurants shared what kinds of entrées were most successful, why they chose to add plant-based items, and how consumers responded. Each brand wants to serve food that is sustainable and healthy, and the case studies include analysis of the appeal plant-based dishes have for all customers, not just vegans and vegetarians.

Grocery Outreach

Today, plant-based meat is where plant-based milk was 15 years ago: Most grocery chains in the U.S. have acceptable plant-based meat options, but they are inevitably placed in their own—often secluded—section of the store, and they are rarely promoted. As a result, only customers who specifically seek out these types of products are able to locate and purchase plant-based meat. This merchandising approach unnecessarily limits the market to dedicated vegetarian and vegan consumers, yet data show that flexitarians and meat-reducers are a vastly larger market for plant-based meat. We use this information, along with primary research, sales data, and consumer insights to influence retailers' placement of plant-based meats, recommending that they are merchandised adjacent to conventional meat. Ultimately, our goal is to emulate the success that the plant-based milk category experienced when it moved to the refrigerated case for the plant-based meat category. We also work to determine and promote the ideal placement of other plant-based categories, such as plant-based cheese.

We know that certain marketing language can expand the market for plant-based products by appealing to a wider range of consumers. Working with our Innovation Department, our Corporate Engagement Department offers guidance to grocery stores to ensure that they understand how to most effectively promote plant-based products in-aisle, online, and in their marketing materials. We also seek greater promotion of the category to increase awareness among flexitarians and meat-reducers, such as the inclusion of plant-based meat in grilling-themed store flyers.

Additional Speaking Engagements

- Alison attended EXPO East in Baltimore and met with representatives from 35 companies making plant-based meat, dairy, seafood, and egg products to secure their support for our FDA petition on behalf of plant-based dairy companies, introduce GFI and its mission, and gather food-service product sheets to add to our plant-based meat, dairy, egg, and seafood database.
- At EXPO West, Alison presented with Sergio Eleuterio, General Manager of Springboard, Kraft Heinz's incubator, to announce the relaunch of BOCA.
- A Kraft Heinz team member presented on our GFIdeas entrepreneurs call, and Sergio will be presenting at GFI's September 2018 conference.
- Also at EXPO West, Alison moderated a panel on the subject of plant-based innovation that included executives from Campbell's, Beyond Meat, and Good Catch, which was attended by about 100 people.

- Alison spoke to 150 investors and entrepreneurs at AGRI Tech Venture Forum in Toronto about the opportunities in the plant-based and clean meat sectors, highlighting the work of our Innovation Department as a resource to the entrepreneurs in attendance. The AGRI Tech Venture Forum provides a converging point for the global agricultural tech leaders, hosting some the best tech experts, capital providers, industry leaders, and companies within the agricultural tech community.
- Alison, with Harvard Law Prof. Nicole Negowetti (formerly GFI policy director) and GFI clean meat Fellow Marie Gibbons, spoke to a group of students at Harvard Law School about the business opportunities for clean meat.
- Alison spoke at the Menus of Change conference about the labeling and marketing of plant-based dishes.
- Bruce gave a keynote talk at the annual conference for Restaurants Canada in Toronto about plant-based and clean meat.

E. International Engagement Department

The U.S. is home to slightly more than four percent of the global population, and meat consumption is accelerating outside of its borders, particularly in the developing world. GFI's **International Engagement Department** is focused on reversing that acceleration by building on the most successful efforts of our Innovation, Science and Technology, Policy, Corporate Engagement, and Communications Departments.

Our International Engagement team leverages the expertise of and resources developed by our U.S. staff: developing new strategies and tailoring programs and materials for global markets by taking into account local cultures, languages, religions, systems, and opportunities. Thus, on the global stage, we aim to ensure that more scientists will focus on plant-based and clean meat; policy and regulatory progress will be accelerated; more good food companies will be founded and those that are created will be more successful; and more media coverage of plant-based and clean meat innovation will be generated.

The team is led by Director of International Engagement Nicole Rawling, Esq., and comprises:

- International Project Coordinator Annie Osborn
- Executive Assistant Dr. Anne Green
- Managing Director-Brazil Gus Guadagnini
- Research Coordinator-Brazil Felipe Barbosa Krelling
- Managing Director-China Elaine Su
- Managing Director-India Varun Deshpande
- Managing Director-Israel Dr. Yaron Bogin

Of the more than 300 stakeholders GFI's International Engagement team engaged between July 2017 and June 2018, approximately 13% were entrepreneurs, 20% were investors, 27% were companies, 21% were NGOs, 12% were government agencies / representatives, and 7% were scientific and academic researchers.

GFI-Brazil

GFI-Brazil is led by Managing Director Gustavo Guadagnini. Gus has experience as a start-up strategist and is involved in the Brazilian entrepreneurship community. In his role at GFI, Gus focuses on developing and promoting Brazil's plant-based food industry by engaging food entrepreneurs, distributors, venture capitalists, grocery chains, restaurants, food service providers, and potential donors. GFI-Brazil highlights are included below.

Engaging Businesses:

- We collaborated with one of the largest egg producers in the world, based in Brazil, to transition some of their business into plant-based eggs.
- We provided guidance to one of the largest Brazilian meat producers about transitioning some of their products into plant-based meats and advised them on how to develop a plant-based research center.
- One of the largest agribusiness companies in Brazil requested our assistance in helping them expand into plant-based proteins. The company's leadership visited several Bay Area startups with GFI, and our International Engagement Director Nicole Rawling connected them to our colleagues at ADM, JUST (then Hampton Creek), and other companies.
- We met with the senior leadership of one of the largest fish companies in Brazil about investing in plant-based tuna.
- Gus presented to employees and partners of GPA, the largest retail company in Brazil, to facilitate their approach to the plant-based market.

Engaging Academic Institutions:

- We explored and launched partnerships with academia, including with researchers at the Federal University of Santa Catarina, one of the leading Latin American research universities, to conduct research in plant-based and clean meat.
- We also established a partnership with Insper (Instituto de Ensino e Pesquisa, or Institute of Education and Research) a higher education institution focusing on business, economics and engineering. GFI is working closely with their entrepreneurship center on research, course development, training, and events.

Speaking Engagements:

- Gus was invited to present at multiple conferences. These included a presentation on plant-based meat innovation at [Festival Path](#) in São Paulo, the biggest innovation and creativity event in Brazil featuring hundreds of lectures, workshops, movies, and activities.

GFI-India

Managing Director of GFI-India, Varun Deshpande has experience in healthcare, entrepreneurship, technology, and venture capitalism, and brings his knowledge of India's plant-based market to expand GFI's operations in India. GFI-India highlights are included below.

Engaging Startups and Businesses:

- We established partnerships with Invest India and Startup India, the government agencies focused on bringing business to India. We worked with Startup India to map out government incentives, connect GFI to plant-based and clean meat startups, and co-host events to promote startups in this area.

Engaging Government Agencies:

- Varun and Nicole delivered a presentation about plant-based and clean meat as the future of protein and the need for government R&D support to the National Institution for Transforming India (NITI Aayog). NITI Aayog is the Government of India's premier policy think-tank and informs policy at the national and state levels.

Fostering Research and Advancing Policy:

- We collaborated with the Indian Centre for Cellular and Molecular Biology (CCMB) in Hyderabad, Humane Society International, and the Association of Food Scientists and Technologists at the Institute of Chemical Technology (ICT) in Mumbai to help advance plant-based meat policy and research.
- We established a relationship with Central Food Technologies Research Institute (CFTRI), an Indian government research and teaching institute under the Department of Science and Technology. Following several months of engagement and collaboration, CFTRI put together a white paper on the scope of plant-based meats in India, as well as a research proposal to create 'Plant based meats and liquid egg alternatives for the Indian market.' GFI's experts evaluated the research proposal and offered recommendations to the Institute prior to its submission for government funding.

GFI-Israel

In February 2018, GFI hired Dr. Yaron Bogin on a six-month contract to launch GFI-Israel. As Managing Director of GFI-Israel, Yaron collaborated with academic researchers, large companies, nonprofits, and government professionals to advance plant-based and clean meat innovations and the supporting ecosystem locally. GFI-Israel highlights included:

Engaging Academic Institutions:

- The Technion University in Israel is finalizing plans for a \$10m food tech lab, which will include a clean meat lab. Our International team has connected them with our U.S. SciTech team to assist with the development of these plans.
- GFI, the Technion, University of Cambridge, University of Helsinki, and VTT Technical Research Centre of Finland, along with private sector partners Nestle, Givaudan, and Roquette, submitted a joint funding application to the European Institute of Innovation and Technology (EIT) to underwrite an international plant-based and clean meat conference at the Technion in May 2019.

Fostering Innovation:

- We brought together several potential partners from academia and industry to jointly apply for funding from the Israel Innovation Authority to launch a clean meat magnet consortium. These partners include the three clean meat companies in Israel; a stem cell technologies company interested in adapting its technologies for mass producing human cells into clean meat technologies; a large meat producer; and a cell culture media manufacturer.

Forging Partnerships:

- Nicole and Yaron attended two large international conferences, FoodTech Israel and AgriVest, as well as an AgTech investors event, and met with VCs, food industry executives, governmental and policy professionals, researchers, entrepreneurs, companies and food tech-related NGOs excited about the plant-based and clean meat sectors in Israel.

F. Communications Department

GFI's Communications Department works to ensure that GFI's work across the other programmatic departments achieves maximum impact. Our Communications team secures media attention for mission-aligned companies, for the science of plant-based and clean meat generally, for GFI's regulatory and statutory work, and for our corporate engagement efforts—thereby supporting the work of our entire organization and bringing unparalleled exposure to world-changing food innovation. Additionally, we drive the conversation about innovative alternatives to industrial animal agriculture on social media, insert GFI experts into the conversation at key conferences, and maintain a website that serves as the web's central hub for information related to plant-based and clean meat research and innovation. The team is led by Director of Communications Annie Cull and comprises:

- Senior Media Relations Specialist Matt Ball
- Senior Creative Manager Rose Convery
- Content Specialist Mary Allen
- Marketing Specialist Melissa Ahlborn
- Event Coordinator Natalia Veinott
- Communications Assistant Alicia Crawford

GFI's Communications team is focused on three primary goals, described below.

Managing GFI's Voice Across Paid, Owned, and Earned Media Channels

Traditional media coverage is essential to all of our goals since it creates excitement among key GFI target communities, reaches potential donors, influences investors to put more money into key technologies that we support, pressures legislators and regulators to take action, influences corporations to add and promote plant-based products, and provides excellent social media content. In short, one good story in the media can be worth hundreds of thousands of dollars in earned media value.

Social media has become increasingly vital to the success of both nonprofit and for-profit endeavors. Along with communicating to constituents and supporters, our social media outreach in 2019 and beyond will be even more focused on creating followers who are 1) tissue engineers; 2) synthetic

biologists; 3) plant biologists; 4) innovation entrepreneurs; and 5) dietary influencers. Consequently, what we post is focused on generating excitement for alternatives to industrial animal agriculture among experts in key fields.

GFI's blog and related bi-weekly Food Innovation E-Newsletter is the main way that GFI communicates timely and relevant updates about the plant-based and clean meat sectors. Our e-news is the main driver of individuals clicking back to our website and it's a key source for many journalists in their reporting. We also publish several [blogs](#) most weeks.

GFI's Communications team supports a number of staff members who speak at industry conferences to raise the issue of innovative alternatives to animal agriculture among key stakeholders.

GFI's website serves as a news service for developments in plant-based and clean meat innovation. Not only does our Communications Department collect and comment on relevant media, but we also use our online platform as a place to share employment opportunities at companies in this space, along with academic and funding opportunities for aspiring researchers. GFI's website is a one-stop shop for anyone interested in learning more about, or getting involved in, the success of these burgeoning market sectors.

Developing Integrated Marketing Campaigns That Support GFI's Programmatic Departments

The GFI Communications Department operates as an in-house creative and strategy agency to execute on the programmatic priorities of the other departments. Examples include editing, design, and layout support for publishing thought leadership reports, policy fact sheets, and the organization's suite of general collateral which seeks to tell the powerful story of GFI's mission and impact. Documents such as the [2017 Year in Review](#) provide a compelling entry point for new supporters to plant-based and clean meat innovation, science, policy, and our work.

Supporting Plant-Based and Clean Meat Startups

In the early stages of operation, many of the companies GFI supports do not have the bandwidth for adequate in-house media promotion and branding efforts. Our Communications Department serves as a consulting arm for these startups as they hone their messaging, begin engaging in promotional efforts, and identify the appropriate media channels. In addition to providing this programmatic support, GFI uses its influence on social media to highlight the work of start-up companies and assist with sending out press advisories to relevant contacts in traditional media outlets.

III. Culture, Transparency, & Strategy

A. Culture

At GFI, we take the work of Daniel Pink in his book *Drive* very seriously. Pink asserts that the secret to high performance and satisfaction—at work, at school, and at home—is the deeply human need to direct our own lives, to learn and create new things, and to do better by ourselves and our world—

autonomy, mastery, and purpose. That's what GFI strives to deliver to all staff, so every member of our team feels that she has autonomy and purpose and is working toward mastery. We actively encourage feedback to ensure that all staff are as happy and fulfilled vocationally as possible.

All staff are encouraged to:

- take “deep work” days. Everyone is encouraged to block their Fridays for projects, and we encourage people to take mornings for projects as well. During these times, staff are not available on email or for meetings.
- turn off email for most of the day and instead schedule times to respond (e.g., 9 a.m. and 5 p.m.). There is overwhelming evidence that each time you check email and take a moment to reply to something, it kills your productivity. No one can multi-task; every diversion requires multiple transfers of mental energy and is bad for productivity.

We are a remote team, so we make an extra effort to build in regular times to share updates, solicit advice, and bond. We start our week with a Monday all-staff video conference to go cover operational topics, discuss ways to improve our organization, or hear updates from the program areas. Every other Monday, this meeting becomes an organization-wide coffee hour designed as an opportunity to connect and foster belonging.

On Wednesdays, we convene again to listen to department-specific updates, with one or two departments presenting on a current project each week. This gives us a chance to learn in-depth about what everyone else is working on, ask questions, and see if there are ways we can help each other. A virtual “happy hour” is scheduled every other Wednesday evening to further encourage socialization and community.

Finally, on Fridays, we compile a weekly report consisting of three highlights (we try to keep this brief—the three most exciting or interesting things from each staff member's week) and an optional step-back thought (What's working? What's not? What should we be doing that we're not? Blue sky ideas?) from each person.

Twice a year the whole team gathers for a staff retreat, where we focus on bonding among our team and tackling big-picture questions and strategic planning. We also meet in smaller groups more frequently when team members attend the same conference or simply cross paths while traveling.

B. Transparency

GFI is committed to transparency, starting with the [FAQ](#) that we send to all job applicants. Additionally, much of GFI's work is detailed in real-time on our [blog](#) and in the resources section of our website. Everyone on the team creates a monthly report, and GFI's executive team curates and distributes Monthly Highlights to anyone who would like to receive them. By allowing for free and open access to all of our resources, including scientific white papers and industry data, we eliminate duplicative efforts and accelerate the work of new industry entrants.

Similarly, GFI has provided our strategic plan and fundraising strategy documents to nonprofit organizations in Israel and Australia, with the goal of helping them to set up robust organizations focused on promoting plant-based and clean meat in their areas of the world. GFI Director Bruce

Friedrich sits on the advisory boards of both of these organizations, [The Modern Agriculture Foundation](#) and [Food Frontier](#).

C. Strategy: Through the Effective Altruism Lens

GFI was founded explicitly as an effective altruist organization. As such, we will not take on any project that we do not believe to be very high impact; instead, we look for activities that can have exponential impact, such as helping organizations in other countries, producing documents that can serve as the foundation for many researchers and start-ups, and plotting the path to regulatory approval of new products.

The five key questions of effective altruism are:

- *What's the benefit?* Maximum shift away from conventional animal product consumption and toward plant and clean alternatives. This will save billions of animals and create a more sustainable world, with decreased climate change and better global health outcomes.
- *Is this the most effective path?* We think that what we're doing is among the most effective paths forward.
- *Neglected?* Yes—no other nonprofit is harnessing market forces and food innovation in order to disrupt animal agriculture. There is a trade group for existing plant-based products (PBFA) and a research institute for clean meat (New Harvest), but there is very little programmatic overlap with our mission. All nine of our departments would benefit from additional staff members, so that we can expand our programs.
- *What would happen otherwise?* If not for GFI, none of the work we're doing in our program areas would happen.
- *Tractability?* Our success in under three years demonstrates that our approach is remarkably tractable.

The three key questions for EA start-up nonprofits are:

- *Why not already solved by markets?* We were initially perplexed that markets had not solved this problem, until we realized that there is no market sector yet for clean meat and the plant-based meat market sector is less than half of one percent in the U.S. and sits at about 0.1 percent globally. Basically, there has been no market incentive. This explains the fact that there is one university in the world that is doing innovative work on plant-based meat, and there are fewer than 15 university researchers focused on the topic.
- *Why not by the state?* The state appears not to be interested in addressing it, though if we're successful in mobilizing public agencies (our policy program area), that would accelerate progress tremendously.

- *Why not by philanthropy?* This appears to be white space. Until GFI, no one had thought to do what we're doing. Our hope is that—on seeing GFI's successes and traction gained thus far—new organizations will join us in these endeavors and well-established animal protection organizations will devote additional resources to this space.

IV. Powered by Philanthropy

As a nonprofit organization, GFI is powered by philanthropy: all our programs outlined above and their collective impact are made possible thanks to our family of supporters. Gifts and grants are essential to our existence and enable GFI to operate sustainably from a position of financial strength and plan for robust growth in the years to come.

We actively seek philanthropic support for each of our six core departments: Science & Technology, Innovation, Corporate Engagement, Policy, International Engagement, and Communications—as well as unrestricted funds which give us the flexibility to stay nimble and apply funds to the areas of greatest need and emerging high-impact opportunities.

GFI's donors hail from across the globe and from all walks of life: ranging from individuals who support our mission with a monthly gift to major grant-making foundations. Every gift makes a significant difference in our ability to transform the global food system and we warmly invite you to join our family of supporters.

To learn more about how your support of GFI will transform the global food system, please contact:

Bruce Friedrich, Co-Founder and Executive Director: brucef@gfi.org | 202-306-2020
Clare Bland, Director of Development: clareb@gfi.org | 310-429-7162

V. Conclusion

GFI was born out of the Effective Altruism movement and we are focused on achieving maximum possible impact for animals, the environment, sustainability, and global health.

Historically, the farmed animal protection movement has focused primarily on educating consumers about the myriad of harms of animal agriculture and why they should reduce or eliminate consumption of animal products.

GFI fully supports these efforts, and we also believe that transformational and permanent change in our global food system will require that we create and promote choices for consumers that will outcompete conventional animal foods on the basis of price, taste, and convenience, i.e., the primary factors that actually determine what consumers purchase.

Our staff is at your disposal to discuss any and all aspects of our plans and outcomes to date. The entire GFI team is committed to GFI being among the most cost-effective nonprofit organizations in the world; we strive to ensure that every donated dollar is focused on maximum mission impact.

Appendix: GFI Top Media Coverage July 1, 2017 to June 30, 2018

GFI has become the go-to source for mainstream media comment on plant-based and clean meat. What follows is a month by month distillation of our favorite coverage; everything below comes either from a top mainstream news outlet or from a highly influential news outlet in science or food innovation.

July 2017

- Our Policy team asked the FDA to take a stance on the great milk naming debate by responding to a 20-year-old Soyfoods Association petition, landing us our first-ever [lead item in Politico's](#) Morning Agriculture (everyone who is anyone in Ag policy reads this). Our petition was also covered in an article in [The Hill](#) (a popular Capitol Hill daily) and a leading spot in [Food Navigator's](#) newsletter.
- Earlier in the year, GFI sued for information from the FDA on its enforcement of Standards of Identity plant-based milk, and based on that lawsuit, we learned that even USDA insists on calling soymilk “soymilk.” GFI received coverage for uncovering these records [from the AP](#) (the [story ran in dozens of papers around the country](#), including the *Los Angeles Times*).
- Food Business News featured our SciTech team's work at the Institute of Food Technologists (IFT) annual conference last month in [this awesome article](#), which was re-published in [Meat +Poultry](#) with the headline “The future of clean meat continues to grow.” Our SciTech team's work also landed the #3 spot on [Food Navigator's](#) “Guide to IFT” list of hottest topics, and inspired [this recap](#) by IFT's director of publications and the editor of the journal *Food Technology*.

August

- GFI advisory council member Dr. Uma Valeti and his team at Memphis Meats raised \$17 million for their Series A round of venture capital funding. This milestone was filled with firsts: the first Series A raised by a clean meat company, the first conventional meat company (Cargill) to invest in clean meat, and the first Sand Hill Road VC to invest in clean meat.
 - Memphis Meats' press release is [here](#), which includes a quote from Bruce, and click [here](#) to read Bruce's thoughts on the news. Many thanks to Memphis for including us on this journey.
 - The news, which broke in *The Wall Street Journal* (paywall), spread like wildfire. GFI was quoted in coverage from the *San Francisco Chronicle*, *Yahoo News*, [Food Navigator](#), and many other outlets.
 - Our nomenclature (“Clean Meat”) is [everywhere](#), including on the front of the Business & Finance section of the *Wall Street Journal*. It was just under a year ago that [we announced our intention to rebrand clean meat as “clean meat.”](#)
- The extremely influential science journal, *Nature*, [covered clean meat](#), and GFI was prominent in the story.

September

- GFI launched its [Plant-Based Meat Mind Map](#) with outreach to the media and a series of webinars. Elaine Watson from Food Navigator did a fantastic write-up covering many of the

key points in this article, “[We’re only scratching the surface when it comes to the potential of plant-based meat, says GFI.](#)”

- The international news wire service Reuters [ran a story about the future of food](#) that leads with GFI and our vision.
- Our work on standards of identity and soymilk were covered by [Bloomberg News](#). Jessica’s interview on GFI’s FDA petition ran on [RFD TV](#). Although not a major media outlet, we take very seriously our outreach to rural communities..



- GFI and the Plant Based Foods Association commissioned [first of its kind data](#) from Nielsen about the market size and growth of plant-based foods in the retail sector (essentially, point of purchase grocery sales). The report was widely covered in the food media (e.g., [Food & Drink International](#), [Food & Environment Reporting Network](#), [Organic Authority](#), [Refrigerated & Frozen Foods](#), [FoodBev Media](#), and [Food Business News](#)).

October

- Our letter about plant-based meat was published in the *Wall Street Journal*, [circulation 2.28 million](#).
- “It’s the DNA of a steak without the DOA of a cow,” writes Jill Ettinger in her [lengthy feature piece](#) on the future of clean meat in Organic Authority. GFI worked to support Jill’s efforts with this piece with the goal of explicitly uniting the various good food movements.
- Bruce was the featured subject matter expert in *The Diplomat*’s Trans-Pacific View piece “[China-Israel Meat Technology Deal: Where’s the Beef?](#)”

November

- Leading UK newspaper *The Guardian*, published a great piece on the [seven megatrends that could beat climate change](#). GFI Director of Corporate Engagement Alison Rabschnuk dominates the first megatrend: plant-based and clean meat! *The Guardian* also published a [follow-up letter](#) from GFI the very next day.

- [The San Francisco Chronicle](#) wrote a great piece about JUST, Inc.'s (formerly Hampton Creek) new Just Scramble egg substitute, which quotes Bruce.

December

- *Fast Company* ran a great story, "[Get Ready For A Meatless Meat Explosion, As Big Food Gets On Board](#)," including extensive quotes from Bruce.
- Alison appeared on [Heritage Radio](#), providing a very nice primer on all things GFI.
- GFI Senior Scientist Dr. Liz Specht was featured on FoodNavigator.com: [Plant-based meats poised for growth as innovation and investment speed ahead](#) (we recommend the video).
- GFI Senior Media Relations Specialist [Matt Ball had a great letter in The Guardian](#) about the proposed Meat Tax (see image on the right) on the same page with Chrissie Hynde.

- According to the journal *Nature*, compared to legumes such as soy and peas, even the most efficient meat causes 40 times as much climate change per calorie of protein. Furthermore, a review by the UK government found that the threat from deadly new drug-resistant disease strains - which are driven by antibiotic use on filthy factory farms - is more certain than that from climate change.

Governments will need a way to pay for these mounting harms. A tax on meat seems inevitable unless we shift toward better means of production. For example, plant-based and clean meat (cultured meat) have all the benefits of animal protein without degrading the environment or inhibiting our ability to use antibiotics.

Matt Ball

The Good Food Institute, Washington DC, USA

January 2018

- GFI Senior Scientist Dr. Liz Specht wrote the cover story for IFT's January Issue: [Is the Future of Meat Animal-Free?](#) (paywall). We could not have been more thrilled to have the cover story for the magazine of the world's largest professional society. Of special note, GFI Senior Creative Manager Rose Convery designed the cover art.
- [Three Global Problems, One Solution](#) in *Impakter* puts Bruce in some nice company. Previous authors in this series include the heads of most UN Agencies, Jeffrey Sachs, and many Nobel Laureates, including Kofi Annan and Tawakkol Karmanfor.
- Bruce wrote [an article](#) for *Innovators Magazine* (below).



February

- The widely-syndicated (more than 60 NPR stations across the country) New Yorker Radio Hour went out for burgers with Bruce for this story on [The Impossible Burger](#).
- *Wired* featured Director of Science and Technology Dr. David Welch: [The High Cost of Lab-to-Table Meat](#).
- Jessica was quoted extensively in a CNBC article and video regarding the Cattlemen's Association's petition to suspend the First Amendment to protect their product: [The fight against 'fake meat' has officially begun](#).
 - *USA Today* reprinted the CNBC story, quoting Jessica in [Ranchers set to fight back against vegetarian 'fake meat'](#).
- MarketWatch did a great story about GFI's panel about the future of meat with Tyson *et al.* at Northwestern University (including quotes from Liz): [Is a lab-grown hamburger what's for dinner?](#)
 - The story also made the *New York Post*: [Lab-grown meat: It's about to be what's for dinner](#).

March

- Jessica was featured in the *Washington Post*: [Why cattle ranchers and tech start-ups are beefing over the meaning of 'meat'](#)
- Bruce had a great quote: "People are eating meat now despite how it's produced; they're not eating meat because of how it's produced," in CNBC's article: [Bill Gates and Richard Branson are betting lab-grown meat might be the food of the future](#). They also [shared](#) with their 2.9M Twitter followers and 2.4M [Facebook](#) (and 146k [Facebook technology](#)) followers.
- GFI's opinion piece was published in The Hill: [Dairy industry doesn't deserve American taxpayer bailout](#).
- Liz took to *Wired UK* to note [The clean meat industry is racing to ditch its reliance on foetal blood](#).
- GFI made *National Geographic's* [Menu of the Future: Insects, Weeds, and Bleeding Veggie Burgers](#).
- Bruce was quoted in CNN's [How close are we to a hamburger grown in a lab?](#)

April

- Bruce was [published](#) in *The Atlantic* (pictured here; circ. 566,000): "The only sustainable way to meet this growing demand is to produce it in a new way. Plant-based meats are getting closer and closer to mimicking animal-based meat, and "clean meat"—real meat grown directly from animal cells outside of an animal—is not far from commercialization. These two technologies may prove to be humanity's salvation."
- The Sunday *Philadelphia Inquirer* ran [a major story](#) about GFI's panel at the Wharton School about the future of meat, eggs, and dairy. The story was featured



on A1 and is the cover story for the Business section (photo).

- Bruce was quoted in this thorough and excellent [article](#) in *The Guardian*. This also went out on their wire and was picked up [elsewhere](#).
- The *St. Louis Post-Dispatch* gave Jessica [the last word](#) on Missouri's attempts to censor plant-based meat. The story went out over the AP, and was picked up by dozens of outlets, including [US News and World Report](#) (reach: 14M) and SFGate (reach: 9M).
- Bruce was featured on [BBC's report on the future of food](#). Report starts at 11 minutes, Bruce at 14 minutes.
- The *New York Post* cited GFI in their [story](#) about burger chains going vegetarian; they also shared with 1.4M [Twitter](#) followers.
- Jessica was quoted in [CNBC's story about the future](#).
- GFI made *Fast Company's* finals for [World Changing Ideas](#).
- Food Navigator [thoroughly covered](#) GFI's coalition's reply to the US Cattlemen Association's petition to the USDA.

May

- Reuters quoted Bruce in their major series [Rebooting Food](#). It was picked up by various outlets, including [Yahoo Finance](#) (17M)
- Alison had the final word in [IFT's cover story](#) for the May issue of Food Technology Magazine, "Mimicking Meat, Seafood, and Dairy," pictured below.
- Jessica was quoted in Agence France-Presse's article on labeling. The story was picked up around the world, including [ABS-CBN](#) (Philippines) and [Japan Times](#). Also [here](#) in French and [here](#) in Spanish. Here in [Pakistan](#), [Santo Domingo](#), [Oman](#), [Spain](#), [Japan News](#), [Borneo](#), [Manila](#), [Italy](#), [Peru](#) (7M). [CTV News](#), [ATT.net](#), and [Breitbart](#) (5M) picked it up as well.
- The Australian Broadcasting Corporation (ABC) Radio put up "Country Hour's" interview with Matt in [this podcast episode](#) (first 13.5 minutes). Matt was subsequently quoted in ABC Australia's [coverage](#) of the beef industry's fear of plant-based and clean meat.
- Liz was featured in *New Scientist's* [cover story](#) about plant-based meat. It has its own URL: <http://newscientist.st/fake-meat> and was shared twice with their [3.6M Facebook](#) followers and twice with their [3.4M Twitter](#) followers. This was also the subject line of their daily e-newsletter (pictured below) and then got its own standalone email.



June

- Liz appeared on Neil deGrasse Tyson's wildly popular StarTalk podcast to discuss clean meat ([radio](#); [podcast](#))

- Politico's influential Morning Ag [covered](#) the [Congressional clean meat hearing](#), quoting Jessica:
"Jessica Almy, director of Policy at The Good Food Institute, which promotes plant-based [and clean] meat, said at the [Congressional] briefing that [clean meat] offers 'an opportunity for the United States government to support farmers and to support innovation and to diversify what farming looks like in this country.' Almy also pushed back at efforts from groups like the Nebraska Farm Bureau to prevent the word 'meat' from being included on lab-grown products."
- Liz was [featured](#) in IEEE Spectrum on the future of meat. IEEE is the world's largest professional organization devoted to engineering and the applied sciences, with more than 400,000 members.
- *The Wall Street Journal* [cited](#) GFI's efforts for fair labeling on the front page of 6/11 paper.
- Bruce was quoted in AP's [story](#) on Clean Meat; Matt was quoted in the accompanying "[Explainer](#)." ABC News immediately [picked up](#) the main story and the [explainer](#). CBC [picked up](#) the main story.
- The main AP story ran in hundreds of places in the U.S. and overseas – for example, in [Germany](#). Also in [The Arab Times](#).
- The Explainer AP story ran in dozens of places: [Detroit News](#), [Yahoo News](#), [Vancouver Sun](#), [National Post](#),
- Jessica had [a major op-ed](#) in the *St. Louis Post-Dispatch* on the Missouri bill to censor plant-based meat.
- Politico quoted Jessica in their [article](#) on the FDA's comment about clean meat. Jessica was also in Food Navigator's [good coverage](#).

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Could meat made of plants ever fool you?

IN THIS WEEK'S ISSUE

Where's the beef?

If you like meat, but don't want a side of animal cruelty and environmental destruction, there's something new on the menu – and it tastes surprisingly good. [Read more](#)

Well I'm blown

The strange influence of the lunar cycle on Earth could warn us when volcanoes are about to blow and might even help us spot impending earthquakes. [Read more](#)

When is a dinosaur not a dinosaur?

As though extinction weren't enough, dinosaurs have also had to deal with doubts over their very existence, and the legitimacy of some of our favourite species. [Read more](#)

