THE ripple effect

2024 YEAR IN REVIEW

About the theme

Who sets ripples of change in motion?

A researcher who makes a field-changing breakthrough in plant-based meat.
A student who sparks her university's commitment to cellular agriculture.
A policymaker who rallies the legislature to invest in alternative protein technology.
An innovator who brings tastier, more affordable options to the market.
A donor whose early support attracts further investment from across sectors and around the world.

In each case, what started as a single action made ripples of impact. Today, these same ripples are creating waves of change across food and agriculture—change that will be needed to sustainably feed more people, protect more land, and give future generations a chance to thrive.

Every day, GFI's work causes ripples. Our teams in Asia Pacific, Brazil, Europe, India, Israel, the United States, and now Japan are shaping the future of alternative proteins. We're bringing more talent and investments to the field. We're looking squarely at obstacles—from technical bottlenecks to regulatory restrictions—and clearing the path forward.

Our global community of donors—a community committed to food solutions that are better for the planet, people, and animals—makes all of our work possible. To create a kinder and more just world for all, we need you alongside us. We're so grateful to be on this journey together.

GFI's global leadership team

Bruce Friedrich
president and founder

Mirte Gosker
GFI APAC managing director

Gus Guadagnini
GFI Brazil CEO

Alex Mayers
GFI Europe managing director

Sneha Singh
GFI India managing director

Nir Goldstein
GFI Israel CEO

Kimiko Hong-Mitsui
GFI Japan managing director

Ilya Sheyman
CEO

Jessica Almy
senior vice president of policy and government relations

Chethana Biliyar
vice president of operations

Caroline Bushnell
senior vice president of corporate engagement

Sarah David
general counsel

Susan Halteman
senior vice president of development

Amanda Hildebrand, PhD
vice president of science and technology

Rachel Lichte
vice president of impact

Sheila Voss
senior vice president of communications

Photo credit: LikeMeat

Table of contents

Our global network

GFI

As the world's largest economy and home to leading meat companies, the United States is shaping the global policy landscape for alternative proteins.

GFI Europe

Hosting world-class universities and governments making bold investments in research, Europe is driving alternative protein science.

GFI Israel

Top academic institutions and a startup-boosting business culture that champions innovation in Israel create a strong ecosystem for alternative protein research.

GFI India

With a rich talent pool and a tech-driven government focused on opportunities for farmers, India is a global hot spot for alternative protein development.

GFI Brazil

Home to major meat companies and a government willing to invest in agricultural research, Brazil is a rising alternative protein leader.

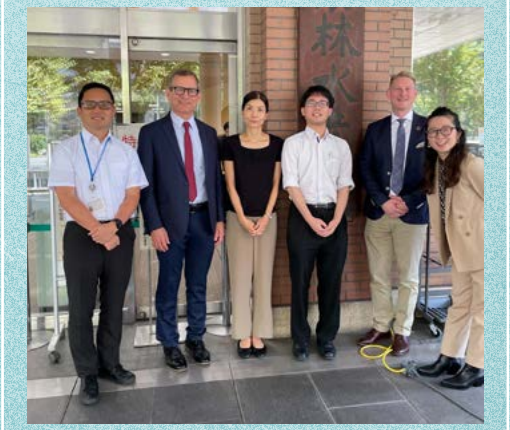
Because we operate as an international network, GFI's ripple effect plays out around the world. On their own, each GFI organization fuels innovation in regions critical to alternative proteins' success. Together, we're a global force reimagining how meat is made.

GFI Japan

Home to the world's fourth-largest economy and an advanced research and manufacturing sector, Japan is primed to become a powerhouse for alternative protein innovation.

Welcoming GFI Japan

GFI's newest regional organization launched in October 2024! Among its first priorities are growing the on-the-ground scientific ecosystem and advancing government support.



GFI team members join members of Japan's Ministry of Agriculture, Forestry and Fisheries (Mariko Murakami, Yuki Osada, and Kazuki Yoshida) to celebrate the launch of GFI Japan. (Photo credit: MAFF)

GFI Asia Pacific

With huge production opportunities and governments interested in food innovation, Asia Pacific is blazing the trail for alternative protein growth.

OUR THEORY OF CHANGE

Billions of people around the world love meat and want to keep eating more of it. Business-as-usual ways of producing that meat, however, are not a viable path if we want to achieve the world's climate, biodiversity, public health, and food security goals within the next two critical decades.

While multiple interventions will be needed, a transition toward alternative proteins—meat made from plants, cultivated from animal cells, or produced via fermentation—is the only one that can scale to address the demand for meat.

Just as renewable energy and electric vehicles have met the growing demand for energy and transportation while contributing to a more sustainable power supply, alternative proteins enable people to eat their favorite foods with far fewer adverse impacts than conventional meat production. Given that taste and price are critical to food choices, GFI's work advancing science, policy, and private sector support for alternative proteins is about meeting consumers where they are—all while creating a far more sustainable food future.

Driving change through good policy

The food we eat and how it's made is shaped by public policy.

By setting rules for safety standards and production methods and funding research into new ways of making food, governments directly affect the taste, price, and availability of what's on our plates. Their decisions can transform the way we eat and help create a more sustainable and just food system.

Securing more government support for alternative protein research and defeating bans on cultivated meat are just two ways GFI's global policy teams accelerate progress for the sector—while helping governments shore up food security and meet other societal goals. In 2024, GFI's policy and government relations teams delivered major wins that are paving the way for alternative protein scale-up and mainstream adoption.

A seat at the halal table

More than a billion people worldwide follow halal food standards. This is why GFI experts in Asia Pacific have met with halal authorities over the past several years to share research and insights about cultivated meat. Following a multiyear collaboration with Singapore's halal certification authority, we were thrilled in February 2024 when the authority ruled that, provided certain conditions are met, cultivated meat can be deemed halal.

GFI is building on this milestone by collaborating with authorities and experts in Malaysia and Indonesia, where demand for halal options is high. If other nations follow Singapore's lead, this ruling will open the door to cultivated meat being enjoyed as part of halal meals around the world.

GFI APAC team members Dr. Maanasa Ravikumar and Ankur Chaudhary join the Fatwa Conference, where Singapore's halal certification authority ruled that cultivated meat can be halal (providing that certain conditions are met).

GFI senior policy specialist Maille O'Donnell (far right) educates alternative protein companies about federal loans and vouchers, ensuring public resources drive progress across the industry.

The United Kingdom raises the bar for investing in alternative proteins

Research centers focused on alternative proteins could open the door for innovative ways of making meat and accelerate improvements in taste, cost, and nutrition. This is why GFI Europe, located in a region with governments making bold investments in research, has made establishing these centers a priority. For several years, the team has been sharing information and resources with the UK's main public research funder—and, in August 2024, the UK government announced a £15 million investment into the new National Alternative Protein Innovation Centre (NAPIC). This center adds to a growing network of research facilities in the UK, with four established in the past year alone. GFI Europe will continue to serve as a partner and advisor to NAPIC, helping the center connect and collaborate with partners across the region.

Labeling wins around the world

How do you let someone know that a product is a chicken alternative if you can't use the word chicken on its label? Clear labels help shoppers understand what they're buying, so when governments try to ban terms like "plant-based chicken," it can create confusion and limit choices. In 2024, GFI celebrated a big win when the EU's top court ruled that countries can't block companies from using terms like "plant-based chicken" unless they have clear legal definitions for meat in place. GFI Europe supported this case since its beginning, working with the European Vegetarian Union to share expertise on labeling laws and build a strong legal case. This decision sets an EU-wide precedent, making it harder for governments to limit how alternative proteins are labeled.

Connecting the dots—and the dollars

On Tax Day, Maille O'Donnell stepped into a role that couldn't be more fitting: ensuring U.S. federal taxes support the alternative protein industry. As GFI's senior policy specialist, Maille educates alternative protein companies about federal loans and vouchers that most never realized were available. Much of this funding wasn't designed for alternative proteins, but Maille is helping the industry tap into their potential.

"These grants are fueling innovation," Maille says. "By finding and sharing them, GFI is supporting the entire food system."

In 2024, over a dozen companies secured more than $25 million in U.S. public funding. By making these opportunities known, Maille is ensuring public resources drive progress across the industry.

Battling innovation bans on both sides of the Atlantic

In 2024, GFI's U.S. policy team played an essential role in defeating 12 bills to ban cultivated meat in nine states—and 14 restrictive labeling bills across the country. By coordinating sign-on letters and rallying industry support, we protected the free market from these threats to consumer choice.

In Europe, our policy team pushed back on cultivated meat restrictions in countries including Italy that have introduced bans, offering evidence-based consumer insights. Our data shows that Europeans are interested in more protein options, not fewer, and we're ensuring that anti-innovation restrictions don't limit choices across the continent.

Success for research funding in the U.S. Midwest

In the 1940s, Illinois labs helped turn penicillin into a life-saving antibiotic. Today, Illinois is carrying on that legacy of leadership in confronting societal challenges by advancing alternative proteins—an agricultural solution that can sustainably feed more people, combat antibiotic resistance, and improve the regional bioeconomy.

GFI has been working closely with Illinois policymakers to build support for—and help make the state a leader in—alternative protein research. In 2023, Illinois launched the Alternative Protein Innovation Task Force, the first of its kind in the country, with GFI CEO Ilya Sheyman as a member. Building on these connections, in 2024, GFI's team helped lead efforts to secure a $5 million investment to expand the Integrated Bioprocessing Research Laboratory at the University of Illinois Urbana-Champaign (UIUC). This historic investment—Illinois' first in alternative proteins—matches the largest-ever state funding commitment to the sector, which was secured by GFI in California in 2022.

But this was just the beginning. Building on state support, GFI, UIUC leadership, and other stakeholders rallied leaders in Congress and the Biden administration to secure an additional $51 million through the Tech Hubs Program—critically needed funding that will help startups scale up and accelerate toward commercialization. This funding will advance precision fermentation, a promising way to create proteins based on ancient food production methods, while addressing global challenges like antibiotic resistance.

India calls on smart proteins to achieve national priorities

India's government is emerging as a global alternative protein leader with its new BioE3 policy, which focuses on biomanufacturing to address national priorities such as economic growth, environmental sustainability, and job creation. BioE3 supports research and entrepreneurship across six sectors—and one of them is alternative protein (known as "smart protein" in India). This focus on alternative proteins results from GFI India's collaboration with the Department of Biotechnology (DBT) throughout 2023 and 2024. As an expert resource to the DBT, the GFI India team shared input, prepared detailed reports, and organized events such as the Smart Protein Science Forum, where we connected scientists and entrepreneurs with policymakers. By August 2023, GFI India was invited to join the DBT's Smart Protein subcommittee. Through this steady relationship-building, we offered inputs that shaped the DBT's strategic roadmap for alternative proteins, laying the groundwork for this year's victory.

GFI Europe team members gather in Belgium to set goals, track progress, and measure the impact of our work across alternative protein policy and beyond.

If past is prologue, once a promising new technology finds a solid foothold in Asia's largest economy, sweeping changes often follow—slowly at first, and then all at once.

— Mirte Gosker, GFI APAC managing director in the *South China Morning Post*

Photo credit: Aleph Farms

Wins for cultivated meat

In February, Israeli company Aleph Farms made history by securing the first premarket approval for a cultivated beef product. This milestone reflects years of dedicated efforts from the GFI Israel team and brings cultivated meat one step closer to dinner tables in Israel.

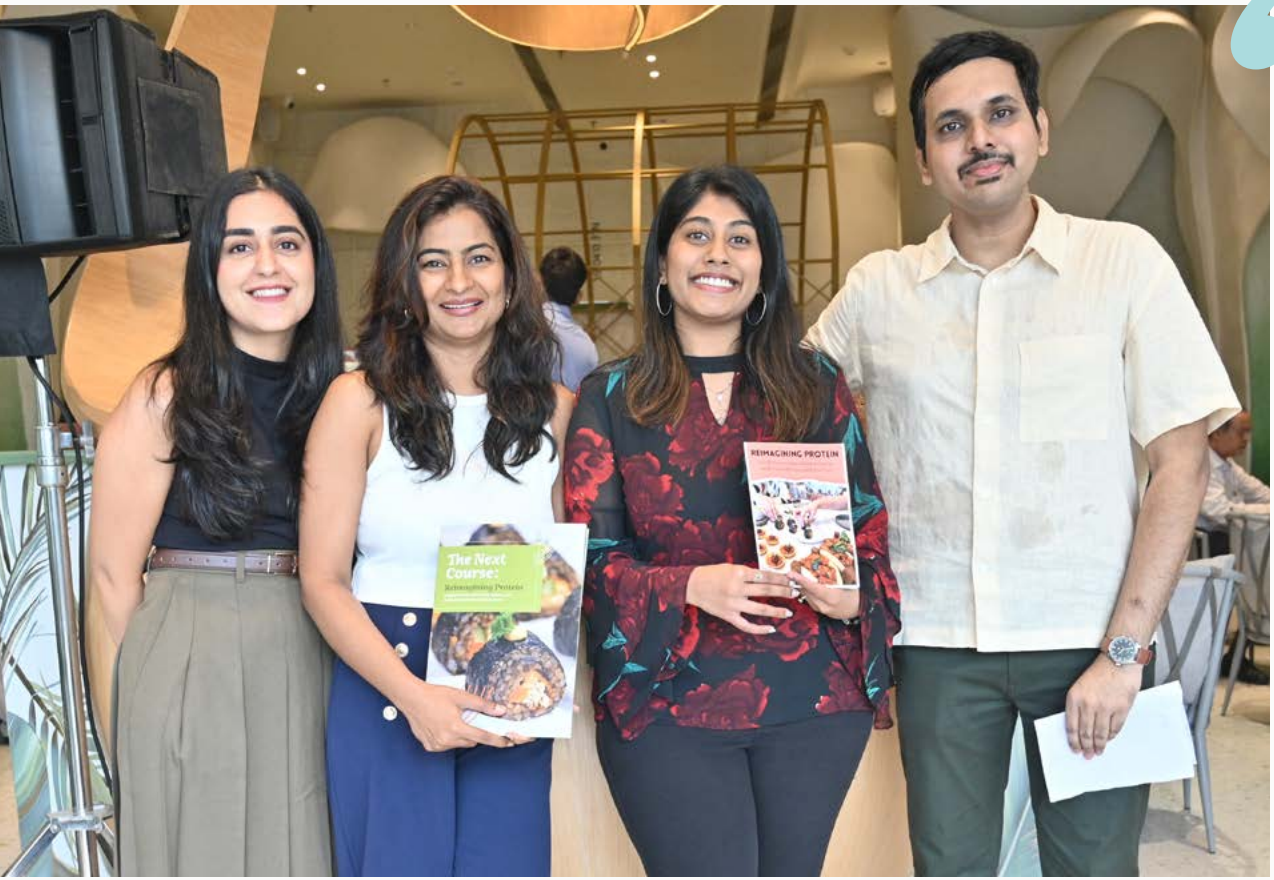
In August, French startup Gourmey submitted the first application to sell cultivated meat in the European Union with their cultivated foie gras. As a traditional French delicacy whose production is banned in several countries, foie gras is a product that many are eager to see made in a way that is better for animals and the planet. GFI Europe senior policy manager Seth Roberts says, "This demonstrates that food innovation can coexist alongside our culinary traditions, providing consumers with foie gras made in a way that could reduce environmental impacts and animal welfare concerns, support investment, and provide future-proof jobs."

In November, Australian startup Vow launched its Japanese quail in Hong Kong, making it the first company to sell cultivated meat in China. Vow's initial approval by the Singapore Food Agency was a key part of how the startup managed to enter Hong Kong, underscoring the value of international regulatory alignment—a regionwide effort that GFI APAC has helped lead.

Inviting everyone to the table

Increasingly, governments around the world are seeing alternative proteins as a way to address multiple priorities at once—from food security and supply chain resilience to lower pandemic risk, emissions reductions, and cleaner air and water. But to realize the full suite of global and public health benefits enabled by a transition toward alternative proteins, greater public support will be needed for alternative protein science, innovation, and infrastructure. Thanks to our global community of donors, GFI's policy teams are reaching more and more policymakers, each representing a diversity of interests and aims, to advance this critical work.

Using evidence to shape the future of protein



GFI India team members Mansi Virmani, Raji G., Divya Saravana, and Dayan Concessao celebrate the release of a first-of-its kind report, which shares insights on plant-based foods in India's food service industry.

> *"What will it take for alternative proteins to become the go-to choice on dinner tables worldwide?"*

asks Raji G. "To deliver the climate, health, and food security benefits we know are possible, we need to understand what shapes food decisions, and make alternative proteins the easy option."

Raji, GFI India's market and consumer insights advisor, wants to find out what motivates people to buy certain products over others. She is part of an expert team leading detailed, data-driven analyses of market trends in the country. Their goal: to provide the alternative protein sector in India with open-access insights on how to meet consumer expectations and drive demand.

Bridging nutrition and tradition

Plant-based foods can attract Indian consumers by offering a nutritional edge while staying true to familiar flavors and textures. That's why Raji, GFI plant-based scientist Dr. Padma Ishwarya S., and the GFI India team conducted two studies in 2024: one to analyze the nutrition of plant-based proteins and another to determine the best ways to meet consumer expectations for protein products. The first study, led by Padma, looked at nutrition labels and ingredient lists for a subset of plant-based meat and dairy products in India and compared them to conventional proteins. Based on their findings, GFI India published a report with recommendations for plant-based innovators on selecting balanced ingredients and sharing health benefits with consumers.

GFI India team members Amrutha Girivasan, Sneha Singh, and Dr. Padma Ishwarya S. unveil a new nutritional analysis of plant-based protein, which covers plant-based labels and ingredient lists and compares them to conventional proteins.

The second study, led by Raji, looked at eating habits in India to discover what shapes food preferences, revealing a need to educate the public on protein quality and how alternative proteins can be used in traditional recipes.

Health perceptions drive interest in plant-based meat around the world. In 2024, GFI conducted research that highlights opportunities to build consumer trust around plant-based nutrition in the United States. Through a series of focus groups, we explored how consumers—who shop for both plant-based and conventional proteins—evaluate nutritional information in the grocery store. This research provided insights into how the sector can better communicate the health benefits of plant-based meat and develop products that meet consumers' needs.

Evidence grows on market potential for plant-based meat in Asia

Southeast Asia is one of the world's fastest-growing economic regions, and it's experiencing skyrocketing demand for animal protein. A first-of-its-kind study from GFI APAC revealed encouraging insights for plant-based meat: in all six Southeast Asian markets we surveyed, consumers who expressed the most enthusiasm for plant-based meat were also the highest consumers of conventional meat—demonstrating a major opportunity for plant-based meat to scale up in Southeast Asia.

The study also highlighted a key obstacle—cost remains the central barrier to buying more plant-based meat. Based on these findings, our APAC team has not only focused on sharing marketing insights for the sector but also on increasing the affordability of plant-based meat in Asia, emphasizing the importance of investment in the sector.

A 360º view of consumer preferences in Brazil

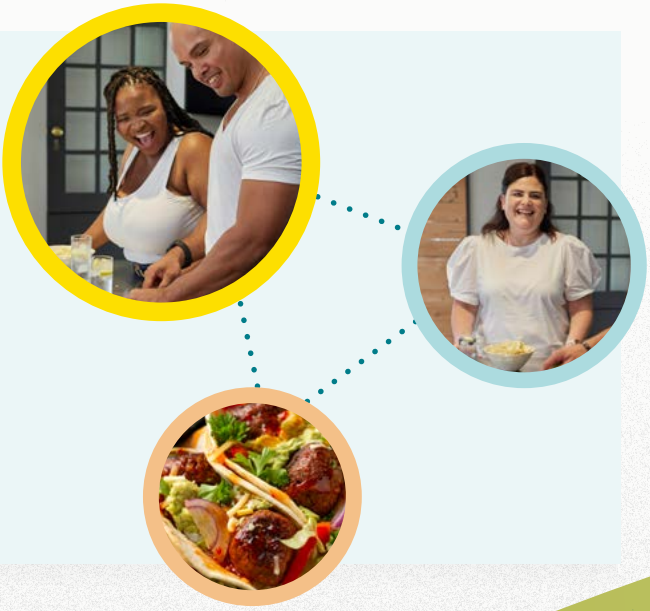
GFI Brazil's Consumer Research 360º initiative uncovered insights into Brazil's consumer habits, trends, and preferences through detailed research and an analysis of social media content. Their results revealed that while 64 percent of participants had some familiarity with plant-based meat products, only 18 percent had actually tried them. In Brazil, home to some of the biggest meat companies in the world, this represents an enormous opportunity to capitalize on consumers' interest in healthy, sustainable protein alternatives. The initiative's findings were presented at industry events like the APAS Show, the largest trade show in the supermarket industry. GFI Brazil educated attendees on how making plant-based options more accessible and appealing can lead to greater consumer adoption of alternative proteins—a key driver of a more sustainable food system.

Learning from the electric vehicle industry

Both alternative proteins and electric vehicles allow consumers to reduce their environmental footprint without giving up their favorite meals or modes of transport. The electric vehicle industry overcame early challenges to gain widespread popularity: EVs made up just two percent of all cars sold globally in 2018 before rising to 18 percent five years later. This shift took time and persistence as the industry developed better and more affordable options to win over consumers. In 2024, GFI partnered with Boston Consulting Group and Synthesis Capital to examine what alternative proteins can learn from this success. Published in July, the resulting report highlights innovation strategies that the alternative protein sector can adopt from the electric vehicle industry. The report also recommends how governments and investors can advance climate goals by supporting alternative proteins.

What makes consumers tick?

As the plant-based meat industry matures, it is becoming increasingly important to understand what motivates people to buy alternative protein products. What will convince skeptical consumers to try plant-based protein for the first time? What will inspire them to buy that product again or try a new one? In response to this need for data, GFI's corporate engagement team used a tried and true methodology—consumer segmentation—to understand consumers' attitudes and behaviors toward conventional and plant-based meat. The segmentation framework revealed seven distinct clusters of consumers with unique attitudes and needs. By making this data accessible to companies, researchers, and nonprofits, we are ensuring that these insights can help the entire field find better ways to communicate the benefits of alternative proteins.



GFI India's Aiyanna Belliappa and members of the IKP Knowledge Park team celebrate the launch of the Centre for Smart Protein and Sustainable Material Innovation, a new facility offering state-of-the-art support for alternative protein startups.(Photo credit: IKP Knowledge Park)

Industry hubs launch in India

The alternative protein ecosystem in India is growing, and GFI is accelerating this growth by supporting two new facilities that are boosting research and innovation. In 2024, GFI India partnered with leading science incubator IKP Knowledge Park to launch their Centre for Smart Protein and Sustainable Material Innovation. The center addresses the urgent need to provide state-of-the-art, round-the-clock support for startups. GFI also partnered with the Alternative Proteins Innovation Center to launch India's first comprehensive facility dedicated to alternative protein research, manufacturing, and ingredient development—offering support from the lab all the way to market.

GFI hosts a landmark nutrition gathering

In October at the University of Minnesota, GFI team members brought together researchers, public health experts, and executives from leading food companies to explore the nutrition and health benefits of plant-based and fermentation-derived meat. As a trusted convenor, GFI hosted and facilitated discussions on the key issues in alternative protein nutrition. Insights on topics ranging from lowering sodium content to optimizing food processing for improved nutrition will help shape research priorities.

Nutrition and health experts discuss opportunities for plant-based and fermentation-derived meat to meet consumer expectations at GFI's gathering in October.

GFI brings together experts from across the field for discussions on key issues in alternative protein nutrition, and our October gathering at the University of Minnesota helped shape future research priorities in this area.

Acting on evidence

GFI's strategy is grounded in data, and sharing insights freely is at the heart of what we do. Our corporate engagement teams around the world conduct rigorous research and analyses that inform entrepreneurs, investors, policymakers, and companies of all sizes about the opportunities in alternative proteins. As a nonprofit, we are uniquely positioned to be the rising tide for the alternative protein sector, equipping innovators from tiny startups to major companies with the data they need to transform the food system.

the ripple effect

Our first eight years of work caused much-needed ripples and waves of change. An ocean's worth of impact lies ahead of us.

For anyone who cares about the future, addressing the world's growing demand for meat is a must. In 2016, GFI created the first ripples in a wave transforming how to meet that demand. Back then, the path forward for alternative proteins did not exist:

- No governments were prioritizing this solution.
- No industry roadmap offered insights on how to overcome barriers.
- No research community existed that spanned plant-based, fermentation,and cultivated meat innovation.

Enter: GFI. Over eight years, our early ripples of progress have grown into increased public support for alternative proteins, field-changing research, and an expanding community of innovators reshaping the food system.

Governments are taking action.

GFI works to ensure policymakers incorporate alternative proteins in their plans for sustainable food production, strong bioeconomies, and environmental protection by sharing detailed research, making the case for public investment, and championing fair policies (read more on page 5).

The industry is evolving.

GFI's expert analysts are educating the sector about what consumers want and how to create more appealing, affordable, and nutritious alternative protein products to meet the public's needs (read more on page 9).

The scientific community is growing.

New research centers at globally renowned institutions are accelerating protein innovation. To date, GFI's own Research Grant Program has awarded $24.7 million to 134 projects across 26 countries, and more than 70 universities worldwide have active Alt Protein Project chapters—our signature student-driven initiative (read more on page 15).

Bigger waves, bigger impact

Every research project funded, every innovator inspired, and every donor contributing to GFI's mission is transforming how we feed the world. Through this global community, our ripples of impact across science, policy, and industry are converging into waves. But there is so much further to go to ensure billions of people have food that's delicious, affordable, and sustainable. A shift toward alternative proteins will create a world where:

THE PLANET FLOURISHES

Food is made in ways that benefit people, animals, and our planet. Greenhouse gas emissions are slashed, natural resources are protected, and a diversity of life thrives.

PEOPLE HAVE ACCESS TO FOODS THEY LOVE

Farmers, producers, and others on the frontlines of food production meet the growing global demand for meat and seafood, ensuring affordable, tasty, and nutritious food is available for everyone.

COMMUNITIES ARE HEALTHIER AND MORE VIBRANT

Safer and more secure food systems reduce pandemic risks, prevent antibiotic resistance, and help build resilient local economies.

Together, we can create a food system where everyone thrives. You are making today's waves of change possible and tomorrow's ocean of impact within reach.

Thank you.

Bringing new people and perspectives to alternative protein science

In natural ecosystems—whether forests and grasslands or rivers and coastal zones—the greater the diversity, the healthier and more resilient the ecosystem.

Research ecosystems are no different. When a greater mix of people, perspectives, and resources come together, the entire system grows stronger. Changes and discoveries build on one another quickly, making the ecosystem more interconnected, better equipped to overcome obstacles, and far more capable of generating breakthrough solutions.

Alternative protein science is still in its early days, so GFI's science and technology teams are focused on creating a diverse network of talent and support. By educating and connecting innovators, directly funding foundational research, and making alternative protein science available to all, we are adding resilience to the entire scientific ecosystem.

Growing a global student movement

At Brazil's Federal University of Minas Gerais, Jorge Guadalupe and his Alt Protein Project chapter are part of a network of innovators reimagining a more sustainable future of food. Through events like a technical seminar series and the launch of a new cultivated meat course, Jorge's team is training the next generation of leaders and inspiring new research. As Jorge explains, "We are trying to make students' eyes shine towards cultivated meat."

Jorge and his team are part of a global wave of change driven by the Alt Protein Project. Since 2020, the program has grown to 70 universities worldwide, transforming campuses into engines of alternative protein education, innovation, and research. "It is an honor to be part of such a vibrant community," Jorge says. "I hope to use all that I'm learning to create a more sustainable world."

As part of GFI's Alt Protein Project, our global student-led movement, members of the Cornell chapter show off their favorite plant-based eats at the university's spring Food Festival. (Photo credit: Cornell Alt Protein Project)

The ICT Mumbai chapter of the Smart Protein Project, a part of GFI's global Alt Protein Project, makes new connections at a GFIdeas India community event. (Photo credit: ICT Mumbai Smart Protein Project)

From student to researcher—the Alt Protein Project ripple effect

While Lisa Neidhardt was a student at Cambridge, she grew her expertise in alternative proteins as the copresident of the local Alt Protein Project chapter. Later, she became an Alt Protein Project regional mentor. In 2024, she became an associate researcher at Imperial College London, where she now conducts research on engineering microbes for food production at the Bezos Centre for Sustainable Protein and the new Microbial Food Hub. Lisa credits GFI as an organization "that builds bridges between people who want to get involved and empowers them to take action." She is energized by how her research at the Bezos Centre fits into her work as an Alt Protein Project mentor. "While the Alt Protein Project mobilizes students to drive change from the ground up, the Bezos Centre complements this by generating research and insights that can benefit the entire field," she says. "Working at the intersection of these efforts is incredibly exciting."

The Smart Protein Project shines

In India, the Smart Protein Project—part of GFI's global Alt Protein Project—is planting seeds for the country to grow as a leader in alternative proteins. In early 2024, the Smart Protein Project expanded to six chapters, creating new opportunities for students and innovators. For Armaan Dhanda, the program was a launchpad for impact. Over the years, Armaan has used GFI's programs to gain the skills and connections to build his career. "I led a winning team in GFI's Smart Protein Innovation Challenge, co-founded the Delhi Smart Protein Project, and launched a startup," he said. "GFI has been instrumental in my work at every step." By empowering student leaders like Armaan, the Smart Protein Project is building the talent pipeline needed to transform India's food system.

Bringing alternative proteins to the classroom

GFI Israel is advancing alternative proteins as a top priority for students and innovators. In 2024, the team launched an *Introduction to Alternative Proteins* workshop with the Ministry of Education, giving every high school science teacher nationwide the tools to bring the topic of alternative proteins into their classrooms so students can explore careers in the field. GFI Israel also worked to include alternative proteins in a five-year, $125 million climate-focused funding initiative announced by the Israeli Higher Education Council. This investment will fund research centers, scholarships, and grants, supporting the next generation of leaders as they reimagine our food system.

For the APP's 2024 cohort, we welcomed 21 new groups across 11 countries.

Members of the Melbourne Alt Protein Project host a plant-based cheese tasting, introducing students to a delicious selection of planet-friendly options. (Photo credit: Melbourne Alt Protein Project)

Members of the University of Nigeria Alt Protein Project host a two-day symposium in Nigeria joined by 300 students, faculty, and others interested in the nation's transition to alternative proteins. (Photo credit: University of Nigeria Alt Protein Project)

Bridging the talent gap in Asia

The alternative protein industry in Asia is expanding, providing a chance for new professions to emerge. In 2024, GFI APAC launched a first-of-its-kind career map that guides recent graduates and midcareer professionals toward skill-building programs and careers in the alternative protein sector. The GFI APAC team also works with partners to offer courses and mentorship to bolster the alternative protein workforce across Asia, especially in Singapore, Thailand, Malaysia, Australia, and Korea—driving the region toward a future where alternative proteins are mainstream.

Local ingredients, local talent

GFI Brazil is transforming the future of food by harnessing Brazil's unique strengths: its abundant natural resources and world-class protein innovators. With their new *Study of national plant proteins*, GFI Brazil investigated how local crops like cowpea and mung beans can reduce reliance on imported materials, helping to build a more resilient food system. To support the researchers innovating these new ingredients, GFI Brazil launched open online courses in Portuguese, covering topics like the use of algae as an ingredient in alternative proteins and plant-based meat texturization. GFI Brazil also partnered with universities nationwide to launch the country's first-ever academic conference on alternative proteins, drawing more than 170 participants from academia and industry. By focusing on local resources and talent, GFI is showing how homegrown solutions can lead the way.

GFI and Bezos Earth Fund team members join National University of Singapore staff at the celebratory launch of the NUS Bezos Centre for Sustainable Protein, one of three such centers to open in 2024. (Photo credit: National University of Singapore)

Bezos Centers for Sustainable Protein launch around the world

Philanthropic support for alternative proteins sends a clear signal to governments and investors: this is a solution worthy of attention and resources. By creating early ripples of progress, philanthropy inspires bigger waves of funding and growth.

In 2024, in what was a transformative moment for the sector, the Bezos Earth Fund invested $90 million to launch alternative protein centers of excellence at North Carolina State University, Imperial College London, and the National University of Singapore. Each center is poised to play a groundbreaking role as they focus on innovation needs and leverage academic resources to serve as an alternative protein knowledge hub. In recognition of the role GFI plays as an expert and convener in the field, the Earth Fund entrusted us with scoping and evaluating research institutions to house these centers.

The Earth Fund's continued partnership with GFI enables GFI scientists and ecosystem-builders to closely collaborate with and convene these centers as they tackle the biggest challenges and opportunities ahead—from biomanufacturing scale-up and crop diversification to ingredient innovation, environmental and social analyses, and future-resilient bioeconomies, jobs, and livelihoods.

Inspiring scientists to pursue alternative protein opportunities

Alongside detailed scientific reports and analyses (read more on page 19), GFI's newsletters, webinars, and workshops bring scientists together and give them the tools they need to pursue research questions, explore careers in alternative proteins, and more:

- Launched in June 2024, GFI's The Grazer newsletter provides curated alternative protein insights for the scientific community, including updates on research, funding, resources, and events.
- Our signature Science of Alt Protein webinar series features a monthly presentation from an academic or industry scientist who shares current research or highlights opportunities in the sector. In 2024, topics included improving the aroma of plant-based salmon and scaling technologies for protein texturization.
- Our monthly Cultivated Meat Collaborative Seminars are an invitation-only series designed to address the biggest opportunities and challenges in cultivated meat science. In 2024, the series expanded its reach with a first-ever GFI APAC edition.

Our Research Grant Program makes waves

GFI's Research Grant Program supports groundbreaking projects and gives everyone access to the results. In 2024, our public request for research proposals focused on addressing specific barriers within three key areas: scaling protein production, improving taste, and lowering costs. After careful review, we picked 14 exceptional research projects to fund. These projects are driving impact by overcoming technical hurdles, unlocking further funding, and inspiring collaborations that draw new talent to the field. By freely sharing this research, we are giving innovators everywhere the foundation they need to tackle the most urgent unanswered questions in the sector.

Dr. Frederico Ferreira coordinates a project convening 35 organizations and companies to address knowledge gaps in cultivated meat and seafood, building on his beginnings in the alternative protein field as a GFI grantee.

"It only happened because of GFI"

Dr. Frederico Ferreira, a professor at the University of Lisbon, first entered the field of cultivated meat in 2021 when he received a GFI research grant. This kickstarted a wave of impact as Dr. Ferreira went on to co-launch a startup aiming to produce the world's first cultivated octopus product. GFI's $250,000 grant to Dr. Ferreira paved the way for much larger investments that might never have occurred without our initial funding: just three years after his original GFI grant, Dr. Ferreira led a research program that earned $7.3 million from the EU's key funding program, Horizon Europe. With these funds, he is now coordinating a project that convenes 35 organizations and companies to address knowledge gaps in cultivated meat and seafood. "The ecosystem in Portugal would not be there if not for GFI," Dr. Ferreira explains. "We would not have researchers working on alternative proteins, we would not have scientific data coming out, and we could not spark the interest of the community: it only happened because of GFI."

Believing that change is possible

By pursuing urgent unanswered questions, educating the next generation of innovators, and partnering on the launch of world-class research hubs, GFI is bringing new people and perspectives to the field of alternative protein science. An increasingly diverse community is focusing their time and talents on alternative proteins, knowing that all of us can create ripple-effect changes to our food system that benefit the planet, people, and animals.

Reports and resources

As the go-to, science-driven think tank for alternative proteins, GFI's global network is a publishing powerhouse.

Our scientific analyses tackle the biggest challenges and pursue the hardest questions. Our industry and policy reports document global progress, milestones, and opportunities. As a nonprofit, GFI is uniquely positioned to publish these resources in partnership with others across the field, sharing our insights freely for the benefit of all. Here are just a few published in 2024:

54

Reports and peer-reviewed papers published by GFI in 2024

Featured GFI reports:

2023 State of Global Policy Report

This comprehensive overview of the global policy landscape shows that while governments invested an impressive $523 million in alternative proteins in 2023, billions more are needed to match government investments in other climate technologies and unlock the sector's full potential.

2023 State of the Industry Reports

Widely regarded as the go-to source for the field, these global reports map key trends across the sector—including investment data, consumer research, scientific advancements, public sector developments, and the commercial landscape—and offer a look ahead to the industry's future.

Funding the Build

With limited funding as the greatest challenge facing alternative protein startups, this report by GFI's corporate engagement team provides insights into the evolving funding environment, including sources beyond venture capital, opening the door for next-gen startups and products to succeed.

The Future of Cultivated Meat in Europe

This report by Systemiq, supported by GFI Europe, is a first-of-its-kind analysis that provides answers to key questions about cultivated meat's economic and climate benefits, showing that—with the right support—cultivated meat could add €20-85 billion per year to the EU economy while mitigating 3.5 gigatons of emissions.

The State of the European Alternative Proteins Research Ecosystem and The State of the European Public Funding for Alternative Proteins

These two reports from GFI Europe's science and technology team provide insights into what alternative protein research has been funded, in which countries and universities, and where this funding has successfully resulted in research being published.

"Cultivated meat microbiological safety considerations and practices"

This article by GFI APAC senior scitech analyst Dean Powell, PhD, was published in the peer-reviewed journal *Comprehensive Reviews in Food Science and Food Safety*, offering guidance for upholding high safety standards as companies scale up cultivated meat production.

Additional GFI reports and resources:

In addition to the resources offered on our website and other channels throughout the year, in 2024, our teams also contributed and led these new reports:

Decoding Demand: The Appetite for Alternative Proteins in Southeast Asia
February 2024

Brazil Startup Manual
March 2024

What the Alternative Protein Industry Can Learn from EV Companies
(read more on page 11)
July 2024

Plant-Based Retail Sales Data for Six European Countries
October 2024

Developing an Alternative Protein National Strategy
October 2024

Plant-Based vs. Animal-Based Meats: A Life Cycle Assessment
November 2024

> *"Meat production is long overdue for an upgrade.*

GFI in *Nature*, the premier science journal in the world

Coauthored by GFI APAC experts and the CEO of GFIC, an independent partner that does mission-aligned work in China, this article argues that "meat production is long overdue for an upgrade." Titled "In Asia, alternative proteins are the new clean energy," the piece explores the potential impact of the alternative protein industry in the world's most populous continent.

Putting the alternative protein community on the map

Launched in 2024, GFI's Alternative Protein Ecosystem Map is a living resource that captures alternative protein activity across the globe. It maps alternative protein companies, researchers, and university student groups worldwide, with options to navigate and filter by country, alternative protein type, technology focus, and more. The map addresses a critical need in the growing alternative protein field: making the global network of innovation and collaboration visible. By allowing viewers to see which regions and technologies have opportunities for expansion and new partnerships, this tool offers a clear picture of the current landscape while pointing the way to future growth. GFI associate director of scientific ecosystems Amy Huang, who oversaw the development of the map, shared:

> *We're so fortunate to be building a community and making new connections that are moving the alternative protein sector forward. This map is a celebration of how far we've come together–and a reminder of the critical work that still lies ahead.*

Alternative proteins are nature-positive proteins

Two GFI reports show how alternative proteins can reduce land use, restore ecosystems, and help meet climate goals:

In the U.S., GFI's science and technology team published **Transforming land use: Alternative proteins for U.S. climate and biodiversity success**, revealing that per kilogram of protein, alternative proteins require 50 to 90 percent less land than conventional proteins, enabling the restoration of precious habitats and increasing biodiversity. It also shows that a shift toward alternative proteins has the chance to sequester an amount of carbon annually that's equivalent to grounding every U.S. domestic flight for a year.

In Europe, GFI partnered with the Green Alliance think tank to publish **A new land dividend**, revealing that a shift toward alternative proteins could enable 21 percent of farmland across 10 European countries to be used to expand regenerative agriculture and boost domestic food production—a move that is positive for both nature and farmers. The report also shows that this transition could restore ecosystems to meet both biodiversity goals and carbon sequestration targets for a fraction of the cost of tech-based sequestration, saving these countries tens of billions of euros per year.

Experts shed light on alternative proteins

Influential organizations and institutions across the fields of food security, public health, climate, and economics explicitly called out alternative proteins as essential to food system transformation:

Creating a Vibrant Food Innovation Ecosystem
World Economic Forum

This landmark white paper from the World Economic Forum, developed in partnership with GFI Israel and the Israel Innovation Authority, positions alternative proteins as an urgently needed solution for building resilient global food systems and illustrates why government support in this sector can fuel economic growth, create jobs, and boost the global bioeconomy.

Recipe for a Livable Plane
World Bank

The World Bank, one of the largest sources of funding for developing countries, released this groundbreaking report highlighting that food production causes a third of all greenhouse gas emissions, echoing our global rallying cry that governments must invest in alternative proteins as a climate solution.

"Slaughter-free meat hits the grocery shelf"
Nature Biotechnology

This editorial in *Nature Biotechnology* makes a persuasive case for increased government investment in cultivated meat as a science-based solution for climate change, biodiversity loss, and food insecurity.

Showing up and speaking up

Alternative proteins are just beginning to be recognized as a solution to the world's most urgent challenges. GFI and our strategic partners are raising the profile of alternative proteins on the global stage to educate the public and bring more people into the field.

GFI delegates from around the world champion alternative proteins at the United Nations climate conference (COP29) in Baku, Azerbaijan.

Making the case for food system change at Climate Week and COP29

At two of the world's most influential climate events, Climate Week NYC and the United Nations climate conference (COP29), GFI highlighted how shifting our food system toward alternative proteins can address urgent global challenges. GFI founder and president Bruce Friedrich reflected: "Hearing leaders in the movements to address climate change, global health challenges, and malnutrition in the Global South promote alternative proteins as a key intervention was both inspiring and a testament to the fact that a shift toward alternative proteins offers myriad benefits for humans and the planet we call home." At Climate Week NYC, Bruce led a discussion at the *New York Times'* Changemaker Lunch on barriers keeping climate advocates from embracing alternative proteins.

GFI also co-sponsored an event exploring the links between climate, food, and culture with The Uproot Project, a network bringing diverse voices to the forefront of environmental journalism. We continued to drive the conversation about alternative proteins at COP29, where we were selected to cohost an event with the Food and Agriculture Organization of the United Nations, the UN agency dedicated to ending food insecurity and hunger. The session, titled "Alternative Proteins for Climate, Hunger, and Global Health," brought together representatives from the Bezos Earth Fund, the World Health Organization, and other leaders to discuss how we must rethink meat production to meet climate, hunger, and global health goals.

Recordings for GFI-convened conferences and events can be found on GFI's YouTube channel.

GFI joins the New York Times' Changemaker Lunch at Climate Week NYC to advocate for alternative proteins as a climate solution. (Photo credit: Ben Norman)

8,000+

Stakeholders informed about the power and potential of alternative proteins by GFI experts at third-party events hosted around the world

Other featured events:

World Food India

At this major global event organized by the Ministry of Food Processing Industries, GFI India managing director Sneha Singh moderated a panel on scaling up the alternative protein industry, emphasizing its importance to India's food security.

World Agri-Food Innovation Conference

At this event joined by attendees from over 76 countries and regions, GFI founder and president Bruce Friedrich keynoted a half-day session on the food security benefits of alternative proteins and delivered closing remarks.

China-Singapore Scientific Symposium

Dozens of experts from academia, industry, and government gathered at this first-of-its-kind symposium encouraging collaboration on alternative proteins in Singapore and China. Organized by our strategic partners at GFIC, the Singapore Institute of Food and Biotechnology Innovation, the China-based Suzhou Research Institute, and GFI APAC, participants explored recent strides forward in alternative proteins, including efficient manufacturing practices and novel food ingredients.

Tufts Cellular Agriculture Innovation Day

At the university that launched the world's first Center of Excellence in Cellular Agriculture, Bruce Friedrich joined Tufts president Sunil Kamar, professor David Kaplan, and USDA Deputy Under Secretary Sanah Baig for a series of conversations on the future of alternative proteins. Topics included advancements in cellular agriculture and the importance of open-access research to achieving USDA's vision for climate and food security.

GFI founder and president Bruce Friedrich and Tufts University professor David Kaplan engage in a lively fireside chat about the current state of cultivated meat at the university's Cellular Agriculture Innovation Day. (Photo credit: Paul Rutherford for Tufts University)

GFI Israel team members lead an all-attendee session at the 52nd Annual Conference for Science and Environment, the country's largest environmental conference. (Photo credit: Lior Mizrahi)

GFI Israel CEO Nir Goldstein speaks to the conference's 1,000 attendees about the sustainability benefits of alternative proteins. (Photo credit: Lior Mizrahi)

World Forum on the Future of Democracy, Tech, and Humankind

GFI founder and president Bruce Friedrich emphasized the role of alternative proteins on a climate panel alongside Ireland's climate minister and on a world hunger panel with Live Aid founder Bob Geldof.

52nd Annual Conference for Science and the Environment

At Israel's largest environmental conference, GFI Israel led an all-attendee session on food security technologies that highlighted alternative proteins.

Science and Technology in Society Forum

Marking the launch of GFI Japan at the nation's most prestigious scientific event, Bruce Friedrich spoke on a panel of food security experts alongside Dr. Cary Fowler—winner of the 2024 World Food Prize. GFI's participation in this expert panel elevated alternative proteins as a scalable solution to the world's growing food and water challenges.

Dr. Pri Panescu Scott is honored as a Top Agri-food Pioneer

In 2024, the World Food Prize, often known as the "Nobel Prize for Food and Agriculture," selected GFI U.S. lead plant-based scientist Pri Panescu Scott as a "Top Agri-food Pioneer" in recognition of her work to advance alternative protein science. Launched in celebration of the foundation's 38th anniversary, the program recognizes 38 leading innovators from around the world who are working to transform the food system. Pri and her fellow inaugural cohort were honored at this year's Borlaug Dialogue, a globally renowned event that gathers world leaders and many of the top minds in the international effort to end world hunger. This recognition of Pri shows that the leading committee for selecting hunger relief champions affirms the role of alternative proteins in ensuring sustainable, accessible food for all.

GFI in the news

GFI's experts were sought out by journalists from the world's most influential news outlets for stories on the changing field of alternative proteins.

4,600+
GFI media hits and quotes in 2024

The New York Times

January 2024

"The world has been making meat basically the same way for about 10,000 years, by feeding crops to animals, so that humans can eat animals. This method of meat production is inefficient [...]. Plant-based and cultivated meat use far less land and water, and they have a host of other benefits."

— Bruce Friedrich, GFI president and founder

The Guardian

January 2024

"Cultivated seafood pioneers are developing healthy and sustainable alternatives to an ever-growing range of local delicacies, giving people the food they love without contributing to problems such as overfishing and the destruction of precious marine habitats."

— Seren Kell, GFI Europe head of science & technology

NIKKEI Asia

April 2024

"History has shown that the longer countries wait to invest in the technologies of the future, the harder it is to ever catch up. Asia-Pacific governments and companies clearly see an opportunity to dominate the future of food production and are waving that flag proudly on the global stage."

— Ryan Huling, GFI APAC senior writer

The Atlantic

March 2024

"We don't have to make meat the same way that it's always come out of an animal [...] We can be a little bit more expansive in what our definition of meat is."

— Dr. Claire Bomkamp, GFI senior lead scientist, cultivated meat & seafood

Vox

August 2024

"Early stage R&D is more of a focus for this sector in particular because the products are so early in their development, and we think they can be so much better than they are."

— Jessica Almy, GFI senior vice president of policy and government relations

THE ECONOMIC TIMES

January 2024

"Creating tax breaks and grants for companies investing in agricultural tech and novel technologies like alternative proteins will incentivize the private sector to enter this ecosystem. This, in turn, will build innovative and efficient value chains for indigenous and climate-resilient crops such as millets, pulses, legumes, etc."

— Sneha Singh, GFI India managing director

npr

April 2024

"We're seeing younger generations, like Gen Z and Millennials, come into their purchasing power, and these generations are [...] more likely to report caring about or making consumer decisions based on sustainability issues."

— Emma Ignaszewski, GFI senior associate director, industry intelligence

CHINA DAILY

October 2024

"The world is eating more and more meat, and that's not going to change. But we can make that meat using science. [Plant-based and cultivated meat] could be a $1.1 trillion industry."

— Bruce Friedrich, GFI president and founder

Powered by donors

Philanthropy makes the first ripples in a wave of impact. Donors to GFI from around the world help bring more students, scientists, and entrepreneurs into the field to build a more sustainable and just food system.

"As GFI grows, so does its ability to effect real and lasting change through scientific innovation and advocacy. We believe GFI is a force-multiplier that will yield scalable solutions the world so badly needs!"

— Chuck and Jennifer Laue, cofounders, Stray Dog Institute

"I believe innovation is the biggest driver of lasting change, which is why I'm so excited about GFI's work. They take a relatively novel path toward sustainability and animal welfare—inventing proteins that beat animal-based ones on all counts—and absolutely lead the charge on it."

— Aitan Grossman, GFI donor

"According to the Global Burden of Disease study, the leading dietary risk factor for disability in the United States is the consumption of processed meat, blamed for millions of years of healthy life lost every year. I am proud to be a supporter of an organization with the potential to save hundreds of thousands of lives."

— Dr. Michael Greger, physician and founder of NutritionFacts.org

"We think GFI continues to be a powerhouse in alternative protein thought leadership and action. It has strong ties to government, industry, and research organizations and continues to achieve impressive wins. We believe donations to GFI can help stimulate systemic change that reduces food system emissions on a global scale."

— Dan Stein, founder and executive director, Giving Green

"I support GFI because they're tackling factory farming's biggest threats–from pandemic risks to environmental damage–through smart, systemic change. Their focus on research funding for better alternative proteins shows they understand that making it easier to choose sustainable options is the most effective path forward."

— Skye Nygaard, GFI donor

Your support makes waves of impact

Thank you for being part of a global community that is tackling one of the biggest challenges facing the world: how to build a food system that can feed a growing population sustainably while protecting our planet and all of the people and animals who call it home.

GFI.ORG

ABOUT THE GOOD FOOD INSTITUTE

Mission

We are developing the roadmap for a sustainable, secure, and just protein supply. We identify the most effective solutions, mobilize resources and talent, and empower partners across the food system to make alternative proteins accessible, affordable, and delicious.

Vision

A world where alternative proteins are no longer alternative.

Values

- Believe change is possible.
- Do the most good we can.
- Share knowledge freely.
- Act on evidence.
- Invite everyone to the table.

The Good Food Institute, Inc.
Contact us: philanthropy@gfi.org
U.S. TAX ID #81-0840578