Guide to working with U.S. National Laboratories for alternative protein companies

The United States Department of Energy's (DOE) 17 National Laboratories (Labs) offer infrastructure and expertise directly relevant to the alternative protein sector. In this guide, you'll find an overview of the National Labs network, relevant capabilities, and best practices for setting up Lab partnerships to accelerate R&D and de-risk commercialization.

Emily Fenwick, Contractor at the Good Food Institute and former Capital Planning and Strategic Programs Administrator at the National Laboratory of the Rockies

Table of contents

The United States Department of Energy's (DOE) 17 National Laboratories (Labs) offer infrastructure and expertise–from microbial strain engineering to 900 L pilot fermenters – that map directly onto technical hurdles facing alternative protein innovators. Whether you are a startup refining a precision fermentation process, a cultivated meat company preparing for scale-up, or a plant-based producer looking to quantify environmental impact, the Labs provide pathways to accelerate R&D and de-risk commercialization. This guide explains:

1. **Who the Labs are**: Mission-driven, contractor-operated Federally Funded Research and Development Centers (FFRDCs) spanning bioenergy, advanced materials, computation, and more.
2. **How to engage**: From open-access User Facilities and Cooperative Research and Development Agreements (CRADAs) to fee-for-service Strategic Partnership Projects (SPPs) and licensing.
3. **Which Labs to approach**: A quick reference to facilities with proven relevance to fermentation, cultivated meat, and ingredient innovation.
4. **Best practices**: Aligning with federal priorities, budgeting for contracting timelines, and strengthening proposals through academic or nonprofit partners.
5. **Real-world case studies**: Successes such as Meati at the National Laboratory of the Rockies (NLR), Oobli at Lawrence Berkeley National Laboratory (LBNL), and Umaro Foods with Pacific Northwest National Laboratory (PNNL) demonstrate how Lab collaborations translate into commercial traction.

Note: Facilities, engagement rules, and funding programs referenced here reflect publicly available information as of February 2026. Capabilities and policies can change. Always confirm technical specifications, availability, costs, and intellectual-property terms with each Lab's Partnerships or Technology-Transfer Office, and consult qualified legal counsel before finalizing agreements.

About the U.S. National Laboratories

The United States is home to a network of 17 National Labs overseen by the DOE. These Labs play a critical role in advancing scientific innovation across a wide range of sectors. All DOE Labs are funded by the federal government and operated by contractors as Federally Funded Research and Development Centers (FFRDCs), and all but one operate as Government-Owner, Contractor-Operated (GOCOs). National Labs operate as mission-driven research institutions that tackle some of the country's most pressing challenges.

Most Lab-industry collaborations to date have focused on microbial and biomass fermentation, reflecting the Labs' deep bioprocess expertise. That said, a handful of non-fermentation startups have also tapped into Lab resources. Berkeley Lab's Cyclotron Road fellowship, for example, has supported Novel Farms (cultivated meat) and Umaro Foods (seaweed-based protein). These case studies show that plant-based and cultivated meat companies can engage with National Labs, even if opportunities remain more limited than for fermentation.

Each Lab has its own areas of expertise, infrastructure, and research priorities, often driven by the DOE Program Offices' strategies, Congressional budgets, and the sitting presidential administration. Some focus on high-performance computing or particle physics, while others specialize in bioenergy, materials science, or environmental research. Several of these Labs, such as the National Laboratory of the Rockies (NLR) (formerly the National Renewable Energy Laboratory, or NREL), Lawrence Berkeley National Laboratory (LBNL), and Argonne National Laboratory (ANL), have capabilities directly relevant to the development and scale-up of alternative proteins.

For startups, many National Labs maintain pilot, demonstration, and even commercial-scale infrastructure that is accessible through formal partnership programs. This access allows companies to test and optimize production processes at scale without investing heavily in their own facilities. In doing so, National Labs can significantly reduce capital expenditure burdens for equipment and support early-stage companies in scaling up more efficiently.

National Labs are not limited to government-only projects. Through a variety of programs and partnership mechanisms, private companies can access Lab facilities, collaborate with leading scientists, and leverage cutting-edge tools to accelerate innovation. By working with National Labs, alternative protein companies can tap into decades of research expertise, reduce R&D costs and scale-up costs, and accelerate their path to commercialization.

How the National Labs work with the private sector

U.S. National Labs offer multiple pathways for private-sector alternative protein companies to access their facilities, scientific expertise, and R&D infrastructure. From early-stage research to pilot-scale validation, these partnership models can help accelerate innovation and reduce commercialization risk.

DOE Lab Partnering Service

The DOE Lab Partnering Service (LPS) is a centralized gateway that connects industry, investors, and innovators with U.S. National Lab capabilities. Managed by the DOE's Office of Technology Commercialization (OTC), the LPS platform enables users to discover ongoing research projects, locate technical experts, explore available patents and licensing opportunities, and initiate collaborations across the National Lab system. With detailed profiles of the National Labs and thousands of researchers, LPS streamlines access to federally funded innovations in energy, biotechnology, manufacturing, and more. For alternative protein companies, the service offers a strategic entry point to identify relevant Lab infrastructure, partner on R&D, or license enabling technologies that can accelerate scale-up and commercialization.

Licensing and Technology Transfer

National Labs often hold patents and other innovations available for licensing to startups and established companies. Examples relevant to the alternative protein sector may include novel fermentation organisms, bioprocessing techniques, and/or food structuring technologies. Alternative protein businesses can license existing technologies to shorten time to market, reduce R&D costs, or expand their product offerings. To learn more about licensing opportunities, visit the DOE's Lab Partnering Service (LPS) or directly via a Lab's Tech Transfer Office.

User Facilities

Many National Labs host DOE-designated User Facilities that offer open access to unique instruments, high-end scientific equipment spanning from bench scale (~1-10 L bioreactors) to pilot scale (~50-300 L fermenters and downstream processing skids), and technical staff for the alternative protein industry. A User Facility is a federally sponsored research facility available for external use to advance scientific or technical knowledge under the following conditions:

- The facility is open to all interested potential users, regardless of nationality or institutional affiliation.
- Allocation of facility resources is determined by merit review of the proposed work.
- User fees are not charged for non-proprietary work if the user intends to publish the research results in the open literature. Full cost recovery is required for proprietary work.
- The facility provides resources sufficient for users to conduct work safely and efficiently.
- The facility supports a formal user organization to represent users, facilitate information sharing, foster collaboration, and organize research efforts among users.
- The facility's capability does not compete with an available private-sector capability.

While DOE-designated User Facilities are generally open to external users and often operate on a merit-reviewed or proposal-based access model, access may still be subject to site-specific security requirements, scheduling constraints, and foreign national review processes.

Most DOE user facilities that serve alternative protein companies today are geared toward R&D and scale-up in microbial and biomass fermentation. The Environmental Molecular Sciences Laboratory at PNNL is the exception, offering cross-platform analytical tools that can also support plant- and animal-cell research. User Facilities with alternative protein capabilities include:

- **Environmental Molecular Sciences Laboratory** (EMSL) at Pacific Northwest National Laboratory (PNNL) offers metabolomics, proteomic, imaging, and materials characterization capabilities relevant to fermentation and ingredient development.
- **Advanced Biofuels and Bioproducts Process Development Unit** (ABPDU), also at LBNL, provides fermentation, scale-up, and downstream processing resources.
- **Integrated Biorefinery Research Facility** (IBRF) at the National Laboratory of the Rockies (NLR) provides pilot-scale infrastructure to test and scale up bioprocesses, including fermentation, downstream processing, and separation technologies.

User Facilities typically follow two access models. In the first, you submit a brief technical proposal that is peer-reviewed by an external panel - much like a mini-grant review. Reviewers score scientific merit, feasibility, and alignment with the facility's DOE mission; the highest-ranked projects are awarded instrument or pilot-line time at little or no cost, provided the results can be published. In the second model, the facility offers a fee-for-service path for proprietary work: you pay the Lab's direct costs, skip the competitive review, and keep the data private. Both routes use standardized user agreements and cost structures, but only the peer-review track grants access based on merit rather than money.

Pilot & scale-up capabilities

Many Labs offer access to pilot-scale equipment and engineering staff that can help bridge the gap between benchtop R&D and commercial production. For example:

- **NLR's Integrated Biorefinery Research Facilities** (IBRF) provides fermentation and downstream processing space with 9000L reactors, suitable for cultivated meat or microbial protein scale-up.
- **LBNL's Advanced Biofuels and Bioproducts Process Development Unit** (ABPDU) offers similar capabilities with flexible fermentation and recovery systems for scaling up precision fermentation.

Cooperative Research and Development Agreements (CRADAs)

CRADAs enable companies to collaborate with National Lab scientists on joint R&D projects. Under this structure:

- Intellectual property (IP) developed jointly is shared.
- The company may receive rights to commercialize the resulting technologies.
- Labs can contribute staff time, equipment, and facilities; companies may contribute funding or in-kind support.

For alternative protein startups, CRADAs offer a formalized way to co-develop bioprocessing techniques, optimize microbial hosts, or validate ingredients using Lab infrastructure. To learn more about CRADAs, review DOE Order 483.1B.

Strategic Partnership Projects (SPPs)

Companies may pay National Labs to perform work on a defined scope using Lab facilities and expertise via Strategic Partnership Projects (SPPs). Companies own the resulting Intellectual Property (IP) in this scenario, and there is no requirement to share research outcomes publicly. SPPs are ideal for proprietary or pre-commercial work such as scaling up a fermentation process, running food safety tests, or conducting life cycle assessments (LCAs) on ingredients.

This is one of the most flexible and private collaboration mechanisms available to food tech companies. SPPs are governed by DOE policy for reimbursable work with external partners (formerly referred to as 'Work for Others') and allow companies to fund lab work on a defined scope while retaining rights to resulting intellectual property, subject to negotiated terms.

Engagement model	Best for	IP ownership	Example
User Facilities / Pilot-Scale Access	Analytical testing, molecular analysis	Varies	EMSL, JBEI, NLR, ABPDU
CRADA	Joint R&D	Shared/negotiable	Co-developing fermentation processes
SPP	Proprietary work using Lab services	Company-owned	LCA or pilot fermentation runs
Licensing	Using existing Lab technology	Licensed to company	Novel strain licensed from Lab

Relevant National Labs for alternative proteins

Not all National Labs focus on food or biological research, but several have capabilities relevant to alternative protein companies. These Labs offer infrastructure, technical expertise, and collaborative pathways to support research, development, and commercialization in areas such as fermentation, bioprocessing, molecular analysis, materials science, and energy-efficient production.

Below are key Labs with known relevance to alternative proteins, whether startups exploring early-stage R&D or scaling companies seeking pilot facilities or technical expertise.

Argonne National Laboratory (ANL) – Lemont, IL

Relevant Focus Areas: Computational biology, life cycle analysis, biomanufacturing

ANL brings a powerful systems-level approach to biological and environmental research, offering potentially relevant capabilities to alternative protein companies focused on scaling production, improving sustainability, and optimizing processes. Through its Biosciences Division, ANL supports innovations in biomanufacturing, including microbial strain engineering, bioprocess development, and integrated platform design. In parallel, Argonne's expertise in computational modeling, machine learning, and data-driven optimization may enable alternative protein developers to simulate fermentation dynamics, refine operational parameters, and design efficient production systems. Notably, Argonne is a national leader in life cycle assessment (LCA) and techno-economic analysis (TEA), tools that help companies quantify environmental impacts and identify cost drivers early in the commercialization process. These capabilities may be valuable for startups and established players aiming to meet climate targets, achieve supply chain transparency, or prepare for regulatory and investor scrutiny.

Lawrence Berkeley National Laboratory (LBNL) – Berkeley, CA

Relevant Focus Areas: Microbial systems, fermentation, carbon management

LBNL hosts the Joint BioEnergy Institute (JBEI), a multi-institutional research center focused on advancing the science and engineering of bio-based products. Unlike DOE User Facilities, JBEI is a mission-driven research center; industry engagement typically occurs through sponsored research agreements or collaborative projects rather than open-access facility use. JBEI conducts research in microbial host development, metabolic pathway engineering, and fermentation systems, all of which may be directly applicable to the development of cultivated meat and precision fermentation-based ingredients. In addition, JBEI's collaboration with industry, startups, and academic partners may make it an ideal resource for alternative protein companies looking to scale novel fermentation platforms or co-develop new biotechnologies. These capabilities are part of LBNL's broader Biosciences Area, which provides access to infrastructure and expertise in systems biology, bioinformatics, and process engineering. In addition, LBNL houses the Advanced Biofuels and Bioproducts Process Development Unit (ABPDU), a DOE user facility offering fully integrated pilot-scale fermentation and downstream-processing services. ABPDU has already collaborated with multiple alternative protein startups and recently showcased its capabilities during GFI's *Science of Alternative Protein* webinar, underscoring its value for companies looking to de-risk scale-up.

National Laboratory of the Rockies (NLR) – Golden, CO

Relevant Focus Areas: Biotechnology, bioprocessing, advanced analytics, sustainable systems

NLR is at the forefront of research in fermentation, metabolic engineering, and bio-based materials, with a growing portfolio of work that may support the alternative protein industry. NLR's Biosciences Center combines microbial strain development with advanced bioprocess engineering to accelerate the production of sustainable, bio-derived products, including food-grade proteins and functional ingredients. Their capabilities span from benchtop R&D to pilot-scale fermentation, supported by specialized infrastructure such as the Integrated Biorefinery Research Facility (IBRF), which houses reactors up to 900L in volume. In addition to hands-on technical support, NLR offers robust techno-economic analysis (TEA) and life cycle assessment (LCA) tools, both of which may help companies evaluate commercial feasibility and environmental impact. These services may be valuable for companies seeking to validate process efficiency, reduce production costs, and build investor-ready data models.

Oak Ridge National Laboratory (ORNL) – Oakridge, TN

Relevant Focus Areas: Advanced materials, scale-up, systems biology

ORNL is a national leader in synthetic biology, computational modeling, and materials innovation, offering a unique combination of life sciences and engineering capabilities that may apply to the alternative protein sector. ORNL's systems biology teams develop and optimize engineered microbial strains for bio-based manufacturing, supporting efforts to enhance yield, functionality, and process stability in fermentation-based protein production. ORNL's multi-scale modeling and simulation expertise lets companies digitally prototype metabolic pathways and predict microbial performance under industrial-scale fermentation conditions. In addition, ORNL's Manufacturing Demonstration Facility (MDF) provides access to advanced manufacturing technologies, including 3D printing of custom bioreactor components, food texturization tooling, and materials testing platforms. This integration of biological and physical sciences may make ORNL an ideal partner for companies working on fermentation platforms, novel protein formats, or infrastructure design for commercial production.

Pacific Northwest National Laboratory (PNNL) – Richland, WA

Relevant Focus Areas: Proteomics, metabolomics, food safety, energy efficiency

PNNL's expertise in high-resolution molecular characterization, including advanced mass spectrometry, multi-omics integration, and bioinformatics, enables deep insights into microbial metabolism, product consistency, and protein structure-function relationships. These tools may help companies optimize fermentation processes, ensure food-grade safety standards, and improve the sensory and nutritional profiles of novel proteins. Much of this work is supported by the Environmental and Molecular Sciences Laboratory (EMSL), which provides access to state-of-the-art instrumentation and expert staff, potentially making it a valuable partner for startups and researchers looking to de-risk R&D and accelerate scale-up through molecular-level validation.

Other Labs to watch

A few DOE labs have assets that *could* serve the alternative protein sector, even if they haven't yet published much food-focused work. For example, Idaho National Laboratory's (INL) Biomass Feedstock National User Facility (BFNUF) offers world-class feedstock characterization and preprocessing tools that could help companies secure sustainable carbon sources for microbial or plant-based proteins. That said, the following Labs also have capabilities that could be relevant to alternative proteins but have not yet conducted alternative protein research or partnered with alternative protein companies:

- Brookhaven National Laboratory (BNL): Materials science and biological imaging
- Idaho National Laboratory (INL): Sustainable systems, circular economy focus, biomass processing
- Savannah River National Laboratory (SRNL): Waste valorization and process engineering
- Stanford Linear Accelerator Center (SLAC): Structural biology and advanced imaging

How to set up a partnership

Engaging with a U.S. National Lab may seem complex at first, but a growing number of alternative protein companies have done it successfully.

Start by exploring DOE's Lab Partnership Service, a centralized portal to browse technologies, find experts, and learn about partnership models across all 17 National Labs.

Alternatively, you can also go directly to each Lab's Technology Transfer Office (TTO) or Partnerships Office, where you can identify relevant research areas, partnership models, and points of contact:

- ANL
- BNL
- LBNL
- LLNL
- NLR
- ORNL
- PNNL
- SRNL
- INL
- SLAC

Planning and preparation are critical to a successful Lab partnership. Keep these key tips in mind as you get started:

- **Start early:** Establishing a CRADA or SPP can take several weeks to months, especially during year-end fiscal transitions.
- **Assign an internal point person**: Having a clear internal lead, at your company and your Lab of choice, streamlines communication and legal review.
- **Clarify deliverables**: Labs operate on formal statements of work. Invest time in defining the project scope and objectives.
- **Use email and calls early**: Tech transfer officers are often open to exploratory calls. Use these to validate fit before initiating paperwork.
- **Leverage Lab experience**: Labs often work with first-time partners and can help guide administrative and compliance requirements.

Each partnership type comes with different intellectual property (IP) implications. Review the section on How National Labs work with the private sector above for more information, and work with your legal counsel early to review IP terms and negotiate rights that support your commercialization goals.

Scoping	Agreement	Execution	Follow-up
Explore DOE LPS	Choose partnership type	Conduct project	Disseminate results
Identify relevant Labs	Clarify deliverables	Leverage Lab expertise	Assess next steps
Initial calls/emails	Review IP terms	Manage milestones	Maintain relationships
Align goals with Lab	Assign point person	Regular communication	Seek further funding
Tip: Start early	**Tip:** Align priorities	**Tip:** Check-in regularly	**Tip:** Amplify impact

Best practices for successful engagement

Success in working with a National Lab depends on more than just submitting a request. Companies that navigate the process effectively tend to follow several best practices that align their goals with how Labs operate.

Align with federal and Lab priorities

National Labs operate under mission-driven mandates set by the Department of Energy, which emphasize priorities such as enhancing global energy security, diversifying supplies, and increasing energy access. Projects that clearly align with a Lab's focus areas or DOE's strategic objectives are more likely to secure support and move forward efficiently. For alternative protein companies, this means framing your research and innovation work in the context of broader national goals.

It is also important to recognize that federal R&D priorities can evolve with changes in presidential administrations and Congressional leadership. For example, one administration may emphasize climate resilience and decarbonization, while another may focus more on national security or domestic manufacturing. These shifts can influence Lab funding levels, program focus, and how quickly proposals aligned with specific themes are advanced. Companies should monitor DOE strategic plans, advisory committee reports, and Requests for Information (RFIs) to ensure their projects remain well-aligned with current federal directives and long-term policy goals.

Leverage institutional knowledge and technical support

Labs are complex institutions with established norms, technical capabilities, and internal workflows. Getting the most out of your engagement means tapping into that expertise early by:

- **Talking to Tech Transfer and Partnership staff:** These professionals can help you find the right scientists, determine the best agreement type, and navigate the process efficiently.
- **Asking about/researching similar past projects:** Many Labs have worked with food, agtech, or biotech companies before–use that history to shape your approach.
- **Requesting technical consultations *before* drafting a proposal:** A short call with Lab staff can often clarify scope, feasibility, and cost.

Build in time for administrative and contracting processes

Unlike typical vendor relationships, Lab partnerships are governed by federal rules, legal agreements, and compliance requirements that all take time to implement.

- Expect lead times of 6-12 weeks for CRADAs and SPPs (sometimes more during fiscal year transitions).
- Assign an internal administrative lead to manage reviews, signatures, and points of contact.
- Prepare clear statements of work (SOWs) with well-defined deliverables, timelines, and roles. Labs cannot begin work without them.

TIP: If your timeline is tight, start by engaging with a User Facility or through a limited-scope SPP before ramping into larger collaborations.

Strengthen proposals with strategic partnerships

National Labs often value projects that demonstrate academic rigor and scalability. Partnering with a university, nonprofit R&D center, or established research group can:

- Enhance your proposal's credibility and depth
- Provide grant preparation or administrative support
- Help meet eligibility requirements for funding programs

For example, several successful alternative protein companies have paired with universities or nonprofits when applying for Small Business Technology Transfer Programs (STTR) or Advanced Research Projects Agency-Energy (ARPA-E) grants, which then included Lab subcontracts or facility access.

Case studies

National Labs can serve as effective partners for alternative protein companies seeking to accelerate R&D, validate technologies, or scale novel biomanufacturing processes. Through cooperative research agreements, technical consulting, and incubator support, startups across the food tech space are leveraging Lab infrastructure and expertise to advance innovation. The case studies below illustrate how these collaborations can support different phases of product development—from strain engineering to scale-up.

Case Study 1: NLR + BioPrincipa

Collab: NLR and BioPrincipia scaled NLR's engineered *Zymomonas mobilis* strain for commercial production of 2,3-butanediol (2,3-BDO) from sugar-rich industrial waste

Alternative protein relevance: 2,3-BDO is a valuable platform chemical that can be further converted into bio-based ingredients relevant to food and feed applications, such as polymeric thickeners and precision fermentation feedstocks.

Impact: The project demonstrated the viability of waste-to-value circularity via biotech and advanced toward industrial-scale fermentation–a pathway highly relevant to scaling microbial fermentation for alternative protein production.

Case Study 2: LBNL + Oobli

Collab: Oobli (formerly Joywell Foods) worked with the Advanced Biofuels and Bioproducts Process Development Unit (ABPDU) at Lawrence Berkeley National Laboratory (LBNL) to pilot the production of sweet proteins using fermentation.

Alternative protein relevance: Sweet proteins serve as innovative, functional ingredients in dairy and dessert alternatives, offering a low-calorie, fermentation-derived substitute for sugar and plant-based sweeteners.

Impact: With support from ABPDU's strain optimization and scale-up capabilities, Oobli advanced from lab-scale to commercial-grade ingredient production—illustrating how startups can use National Lab facilities to de-risk early-stage biomanufacturing.

Case Study 3: PNNL + Agilent Technologies

Collab: Pacific Northwest National Laboratory (PNNL) and Agilent Technologies executed a CRADA to co-develop next-generation tools and methods for analyzing proteins, aiming to deliver highly precise results and support large-scale research applications.

Alternative protein relevance: Precision fermentation companies must (a) rank engineered strains fast, (b) set quality and safety criteria for recombinant milk, egg, or collagen proteins, and (c) prove batch-to-batch sameness for regulators — all analytics bottlenecks cited in GFI's 2024 Fermentation State of the Industry Report. Agilent now markets the resulting platform specifically for "Protein Analysis for Precision Fermentation," confirming direct demand from alternative protein producers.

Impact: Agilent's new protein analysis methodology enables quantification of thousands of proteins per run in under an hour, shrinking design-build-test cycles from months to weeks and cutting failed lots. This can accelerate R&D timelines and commercial readiness for alternative protein companies.

Detailed information on specific engagements may be limited due to intellectual property and confidentiality constraints. However, the overall volume and diversity of public-private collaborations remain robust. For example, during GFI's 2024 webinar with LBNL titled "*The Science of Alt Protein: Deploying Alternative Feedstocks for Biomanufacturing of Food,*" a number of food ingredient and platform technology companies were cited as working with the National Labs:

- Amyris
- Oobli
- POW.BIO
- Checkerspot
- C16 Biosciences
- Perfect Day
- Ripple
- Hampton Creek
- EVERY
- Boston Bioprocess
- Geltor

National Lab participation programs

Most federal grants (SBIR/STTR, USDA, DoD, NSF TIP, ARPA-E, etc.) allow companies to subcontract work to a National Lab, but generally do not require it. The one flagship program that embeds entrepreneurs directly inside DOE Laboratories is the Lab-Embedded Entrepreneurship Program (LEEP). LEEP embeds entrepreneurial scientists inside National Laboratories for two-year fellowships that provide a living stipend, R&D funding, and round-the-clock access to Lab facilities and mentors, de-risking technologies that may be too early for private investment. LEEP currently operates four "nodes" at Lawrence-Berkeley (Cyclotron Road), Argonne (Chain Reaction Innovations), Oak Ridge (Innovation Crossroads), and the National Laboratory of the Rockies (West Gate), with the following being the most relevant for alternative protein innovators:

- **Cyclotron Road - LBNL:** Launched in 2015 and run with the nonprofit Activate, Cyclotron Road embeds founders in LBNL's ecosystem. Fellows receive a stipend, lab access, and venture-training that helps translate biomanufacturing and materials-science breakthroughs into market-ready products.
- **Chain Reaction Innovations - ANL:** Embeds four to six innovators each year, pairing them with Argonne scientists and unique tools focused on energy and science technologies. Fellows work side-by-side with scientists to de-risk hard tech, from sustainable biomanufacturing to energy storage.

Example: UMARO Foods + Cyclotron Road (LEEP)

- **Award:** 2020 cohort
- **Project:** Developing a novel seaweed-based protein platform to produce sustainable, plant-based bacon with enhanced nutritional and environmental benefits.
- **Collaboration:** Embedded at LBNL through the Cyclotron Road fellowship, UMARO Foods gained access to DOE user facilities, including the Molecular Foundry, as well as technical mentorship, prototyping resources, and a two-year living and research stipend.
- **Outcome:** Enabled the successful R&D and commercialization of a proprietary seaweed protein formulation; UMARO launched its product to the consumer market and raised private capital.

Example: Meati Foods + Chain Reaction Innovations (LEEP)

- **Award:** 2017 cohort
- **Project:** Engineering a biological fermentation process to grow fungi-based, high-protein meat alternatives at scale, as a sustainable solution to decarbonize the food industry.
- **Collaboration:** Meati collaborated with Argonne scientists (in the Energy Systems division) to set up a bench-scale manufacturing process at the Lab's Materials Engineering Research Facility, leveraging its cutting-edge equipment and expertise.
- **Outcome:** With National Lab support, Meati Foods rapidly advanced its core technology and pivoted from carbon materials to sustainable foods. By 2019, the startup focused on fungi-based meat; it has since commercialized its fermentation-derived steak and chicken alternatives in Colorado. This story showcases how LEEP fellowships can catalyze alternative protein innovation by providing the time, space, and resources to translate Lab discoveries into market-ready products.

Requests for Information, Requests for Proposals, and Forecasted Opportunities

The DOE and its National Laboratories regularly issue Requests for Information (RFIs), Requests for Proposals (RFPs), and Forecasted Opportunities to inform, fund, and engage with private-sector partners across emerging technology sectors. These mechanisms are key entry points for alternative protein companies looking to access federal funding, shape future research priorities, or partner with National Labs on biomanufacturing and advanced food system innovations. RFIs are often used to gather industry input on new program areas or funding directions, while RFPs and Funding Opportunity Announcements (FOAs) provide concrete pathways to secure grants, cooperative agreements, or contracts. Staying informed about these opportunities can position alternative protein innovators to align with DOE priorities and tap into powerful public-sector resources that support scale-up and commercialization.

Sign up for alerts, perform funding searches, or learn more about these opportunities by visiting:

- FedConnect
- CMEI Funding Opportunities
- EERE eXCHANGE
- Grants.gov
- Office of Sponsored Activities

Conclusion

U.S. National Laboratories are an underutilized yet impactful resource for the alternative protein industry. Their combination of world-class scientists, specialized equipment, and flexible partnership models can shave months—or even years—off product development timelines while lowering technical and financial risk. By tapping into User Facilities for analytical work, collaborating under CRADAs, commissioning SPPs for proprietary scale-up, or licensing proven IP, companies of any size can accelerate innovation and bring next-generation protein products to market faster.

Alternative protein stakeholders can make the Labs part of their commercialization playbook by starting with the OTC Lab Partnering Service, reaching out to the Technology-Transfer Offices listed in this guide, and using the engagement pathways outlined here.

About GFI

The Good Food Institute is a nonprofit think tank working to make the global food system better for the planet, people, and animals. Alongside scientists, businesses, and policymakers, GFI's teams focus on making plant-based and cultivated meat delicious, affordable, and accessible. Powered by philanthropy, GFI is an international network of organizations advancing alternative proteins as an essential solution needed to meet the world's climate, global health, food security, and biodiversity goals. To learn more, please visit gfi.org.

GFI.ORG / POWERED BY PHILANTHROPY

GFI is a nonprofit 501(c)3 organization.