



NREL

INDUSTRY GROWTH FORUM

WHERE INVESTMENT MEETS INNOVATION



YOUR GUIDE TO THE

GLOBAL VIRTUAL CONFERENCE

APRIL 20–22, 2021



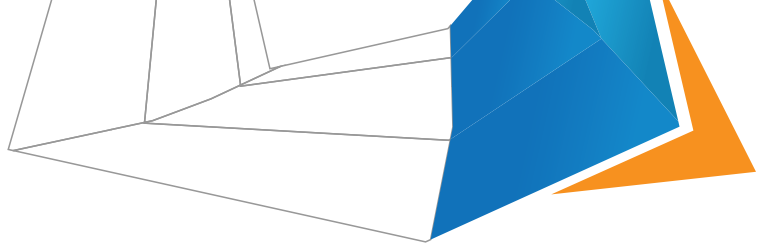


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Virtual Registration Desk

For questions or technical difficulties, please call our hotline at 720-587-7281 or email igf@nrel.gov



LETTER FROM THE NREL INNOVATION AND ENTREPRENEURSHIP CENTER

Dear Friends and Colleagues:

This year's NREL Industry Growth Forum (IGF), our second using a virtual format, comes at a time of rising hope. Spring is in the air and because of brilliant innovators—not so different from many of you—vaccinations for COVID-19 are rolling out around the world. I feel extremely hopeful that life will soon be back to normal, and maybe even better than we remember.

Just last week, I read a PwC survey of 5,000 CEOs around the world who said they are more optimistic about the economy than at any time since the survey began nine years ago. The results seem to indicate that companies have built resiliency and accelerated their digital transformations to the point they have new confidence in the future. They survived.

We are seeing similar positive news from the startups in NREL's Innovation and Entrepreneurship Center portfolio. During the past year our flagship programs, the Wells Fargo Innovation Incubator (IN²) and Shell Gamechanger Accelerator™ Powered by NREL (GCxN), have collectively grown to 60 portfolio companies that have raised more than \$462 million in external funding since joining IN² or GCxN. The Energy I-Corps program welcomed its largest cohort of 17 national lab-based teams this past fall, and NREL is providing technical assistance to five startup companies newly selected for the Canadian Technology Accelerator.

Notably, our premier event, the 26th annual Industry Growth Forum is proving more popular than ever. One hundred fifty four cleantech startups applied to present their technologies this year and our interest from investors, industry experts, and other stakeholders is running high. The investor selection committee picked the 40 most promising companies to pitch, and we are thrilled that 12 of them are located outside the United States. If a year of virtual events has a silver lining—and I think it does— it's that collaborations have become seamlessly international. Climate tech challenges don't recognize borders, certainly global solutions are in order.

We are pleased that you have chosen to join us at NREL IGF 2021. As always, we are offering opportunities for you to engage, make connections, and collaborate with some of the best minds in cleantech.

Thank you to our sponsors, investors, startups and partners for your support of NREL IGF 2021. Together we remain hopeful and completely committed to a clean and sustainable future.

Cheers,

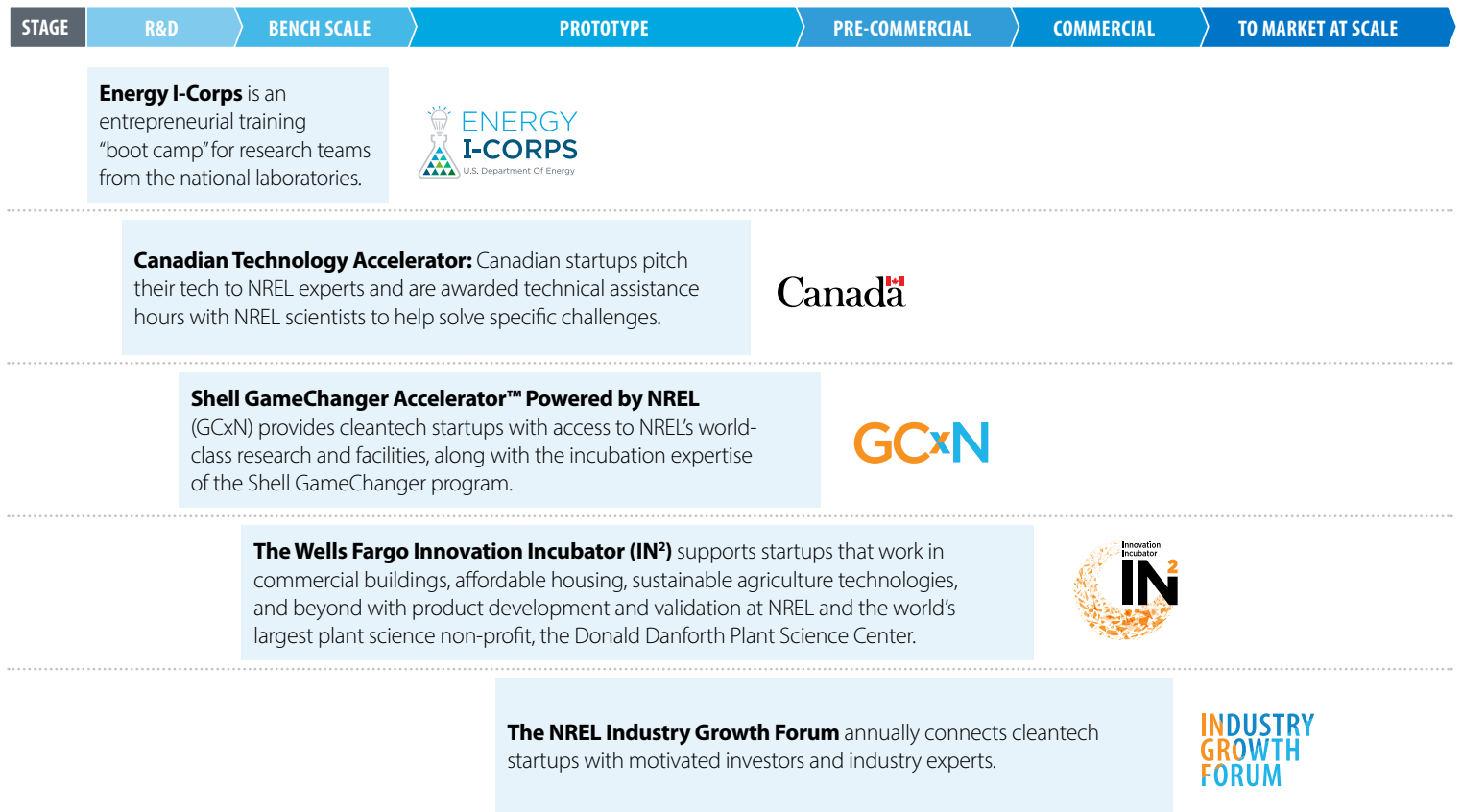
Richard Adams
Director, Innovation and Entrepreneurship Center
NREL



ABOUT THE INNOVATION AND ENTREPRENEURSHIP CENTER

The NREL [Innovation and Entrepreneurship Center](#) (IEC) exists to deliver innovations to market by cultivating an ecosystem that connects entrepreneurs, investors, industry, NREL experts, governments, and communities to accelerate the deployment of clean technologies around the world. IEC's programs and initiatives are designed to address barriers and support the innovation continuum from ideation to product.

Some of Our Innovation Programs



The various innovation programs at NREL occupy different spaces in the innovation continuum, but all complement each other.

THANK YOU TO OUR SPONSORS AND PARTNERS

PLATINUM SPONSORS

Power Africa

[Power Africa](#) is a U.S.-government-led initiative to connect 60 million new homes and businesses across sub-Saharan Africa to clean, reliable energy by leveraging the expertise and resources of public and private sector partnerships, 170 strong and growing.



Wilson Sonsini Goodrich & Rosati

As the leading law firm to innovative technology companies, [Wilson Sonsini](#) is positioned at the forefront of clean technology. Our strategic, integrated practice is designed to meet the novel and interconnected needs of clients throughout the clean energy sector. Wilson Sonsini represents more than 400 energy and clean technology clients.



GOLD SPONSORS

NYSERDA

[NYSERDA](#) innovation programs are focused on technology and business advancements to support New York State's clean energy and decarbonization goals. NYSERDA's innovation programs partner with technology companies, researchers and end users to support the development, accelerated deployment and commercialization of technologies and business models. This is achieved through direct support of research and early stage companies as well as through its network of incubators, accelerators and other support programs.



PitchBook

[PitchBook](#) is the leading financial data and technology company providing a comprehensive view of the flow of capital across venture capital, private equity, mergers and acquisitions and public companies. The PitchBook Platform, app, API and analyst research empower users to make informed decisions by surfacing hard-to-find financial data on the investment lifecycle from the individual, company or investor to the limited partners or service providers. Nearly 33,000 business and investment professionals leverage PitchBook data on a daily basis.



Silicon Valley Bank (SVB)

[Silicon Valley Bank \(SVB\)](#) is the bank of choice for innovators. SVB has successfully supported founders, entrepreneurs, and investors for over 35 years. We provide banking and financial services to help you, as you strive to grow your business at every stage.



SILVER SPONSORS

Air Company

[Air Company](#) is a technology company in Brooklyn, New York, that has developed a new chemical process and heterogeneous catalyst for hydrogenation of CO₂ to high-purity ethanol. Our production facility uses renewably-powered water electrolysis to produce hydrogen and has net-negative lifecycle carbon emissions, removing 1.47 kilograms of CO₂ from the atmosphere per kilogram of ethanol produced. We use this ethanol to produce our award-winning vodka and hand sanitizer.

AIR COMPANY.

AWS

AWS provides startups with low cost, easy to use infrastructure needed to scale and grow any size business. [AWS Activate](#) is a program with resources designed to help startups get started on AWS. Join some of the fastest-growing startups in the world and build your business using AWS.



Constellation Technology Ventures

[Constellation Technology Ventures \(CTV\)](#) is the venture investing organization within [Exelon Corporation](#), the nation's leading competitive energy provider. CTV invests in companies representing innovative energy technologies and business models, building a portfolio that represents a broad range of development stages and technology types. CTV catalyzes growth for its portfolio companies by providing equity capital, management expertise and connectivity to the broad and diverse Exelon commercial enterprise.



The Consulate General of Canada

[The Consulate General of Canada](#) in partnership with [MaRS Discovery District](#), a launchpad for Canadian startups in Toronto, is happy to sponsor the IGF. NREL and the Government of Canada are working together to provide invaluable resources to Canadian companies through the [Canadian Technology Accelerator](#) program.



Foresight

[Foresight](#) is Canada's cleantech ecosystem accelerator. Foresight supports the identification and validation of cleantech opportunities and the successful commercialization of solutions. We bring together industry, government, academia, investors, and innovators to address today's most urgent climate issues and support a global transition to a green economy.



SILVER SPONSORS *(Continued)*

For ClimateTech

The [For ClimateTech](#) initiative helps founders fast track businesses and breakthrough technologies that reduce greenhouse gases and further strengthen the state as a hub for climate-related solutions.



GCxN

[The Shell GameChanger Accelerator™ Powered by NREL \(GCxN\)](#) provides promising cleantech start-ups with access to financial resources, state-of-the-art facilities, and world-class technical experts.



The Wells Fargo Innovation Incubator (IN²)

[The Wells Fargo Innovation Incubator \(IN²\)](#) supports startups that work in commercial buildings, affordable housing, and sustainable agriculture technologies with product development and validation at NREL and the Donald Danforth Plant Science Center.



ZOMA Capital

[ZOMA Capital](#) invests in a broad range of market-based sustainable solutions advancing energy, water, and regional economic resilience in Chile and Colorado. Its global investment portfolio spans multiple asset classes and sectors, with an emphasis on addressing environmental and social challenges.



ASSOCIATE SPONSORS

Davis Graham & Stubbs LLP

[Davis Graham & Stubbs LLP](#) attorneys help clients navigate regulatory hurdles and take advantage of emerging opportunities in the renewable and alternative energy sectors in the Rocky Mountain West and beyond. Our multidisciplinary capabilities as a full-service business law firm make DGS uniquely positioned to counsel clients regarding siting, constructing, permitting, and obtaining other necessary regulatory approvals for wind, solar, hydropower, geothermal, biomass, waste-to-energy, energy storage, transmission infrastructure, and other energy projects.



Eaton

[Eaton's](#) mission is to improve the quality of life and the environment through the use of power management technologies and services. We provide sustainable solutions that help our customers effectively manage electrical, hydraulic, and mechanical power – more safely, more efficiently, and more reliably. Eaton's 2020 revenues were \$17.9 billion, and we sell products to customers in more than 175 countries.



ASSOCIATE SPONSORS *(Continued)*

Fort Capital

[Fort Capital](#) helps companies that have proven technologies with early revenues or other commercial momentum obtain growth equity capital. Over the last three years, we have helped a range of climate tech clients raise over \$400M in equity capital.



HamiltonClark Sustainable Capital

[HamiltonClark Sustainable Capital](#) is an investment bank that works with clients in the sustainability, climate change and decarbonization sectors. We assist clients in raising capital (equity, debt and project finance), and in M&A transactions. We have attended the Industry Growth Forum since 2001 and are an active sponsor of NREL activities. Please reach out to john.mckenna@hamiltonclark.com or jim.logerfo@hamiltonclark.com.



Integrus

[Integrus](#) provides all levels of accounting, finance and tax services, from staff accountant to controller to CFO, on a part-time and/or interim basis, so you can focus on product development, customer acquisition and fundraising. We prepare executive financial reports, operating plans and budgets to keep your business on track, create financial models to support financing, and manage your grant contract billing and reporting. We do what it takes to support you and your team.



Kilpatrick Townsend

With more than 600 attorneys worldwide, [Kilpatrick Townsend](#) serves as counsel to innovative companies and brands from our 21 offices in the United States, Asia, and Europe. We work collaboratively with our clients to achieve their business goals—whether managing complex transactions, tackling global compliance, succeeding in litigation, or protecting their intellectual property. By investing in their success, we help our clients make their businesses better, smarter, and more protected.



Metro Denver Economic Development Corporation (EDC)

[Metro Denver Economic Development Corporation \(EDC\)](#) is Colorado's largest privately funded and governed regional economic development organization. Our territory includes seven Metro Denver counties and two Northern Colorado counties. We work collaboratively with state, county, and local economic developers to provide a single coordinated response for businesses looking for opportunities in Colorado. Metro Denver EDC provides data, intel and insights to strengthen existing companies and attract new ones and helps lead the transformational projects that make Metro Denver a world-class region.



ASSOCIATE SPONSORS *(Continued)*

On Point

[On Point](#) is a boutique messaging firm. We Make Message Mastery Achievable. As messaging specialists, we work with individuals and teams in any industry on 1) end-to-end presentation skills coaching, especially investor pitching, and 2) brand consulting for scaleups and small to medium sized businesses. We offer our 5-part brand workshop to craft a messaging platform that anchors you, we write content like executive summaries and bios, and manage your social media so you “Nail It” from the page. Owner Cindy Skalicky brings an advanced degree in rhetoric and has 25 years of experience in the corporate, academic and entrepreneurial worlds. Contact us at info@onpoint-communications.com



Xcel Energy

Every day [Xcel Energy](#) powers millions of homes, businesses and communities with energy across parts of eight Western and Midwestern states. Headquartered in Minneapolis, we are an industry leader in delivering renewable energy and in reducing carbon and other emissions. We were the first major U.S. power company to announce its vision to provide customers with 100% carbon-free electricity – a milestone we will reach by 2050. Beyond energy we believe in giving back, whether that is assisting our communities with economic development, supporting customers in need, or donating our time or financial resources. Learn more at www.xcelenergy.com/community.



STARTUP SPONSORS

CoGenerate Solar

[CoGenerate Solar](#) is about to disrupt the solar industry. Our patented dual-axis tracking solar cogeneration technology captures 4 to 6 times more combined electricity and heat from the same rooftop than standard photovoltaic panels with a lower kWh cost.



Eavor

[Eavor](#) is a technology based energy company led by a team dedicated to creating a clean, reliable and affordable energy future on a global scale. Eavor's solution (Eavor-Loop™) represents the world's first truly scalable form of clean baseload power.



NovaSolix

[NovaSolix](#) has developed the most disruptive solar device in over 65 years. The device is based on rectennas (rectifying antennas) built from carbon nanotubes. Proof of Concept devices showed 40%+ project efficiency. The company has 13 issued patents and was developed at the Stanford Nanofabrication Facility and the company's facilities in Newark, CA.



MEDIA PARTNERS

Antenna

Powering impact to build a clean global economy: [Antenna](#) is an integrated marketing and PR practice focused on clean energy, circular economy, sustainability, agtech, water, carbon reduction and advanced materials.



Impakter

[Impakter](#) has evolved into a platform focused on informing our audience with the highest quality articles and interviews. We have run various editorial series (17 Sustainable Development Goals Series, HeForShe, etc) and special projects such as the Sustainable City Living Series. All are still running and more are coming soon.



COMMUNITY PARTNERS

[BRITE Energy Innovators](#) – Ohio’s energy tech incubator – is dedicated to ensuring the success of startups driving innovation in energy tech. As a 501(c)3 nonprofit organization, we offer many in-kind & paid services. These services include consultation services for startups and small-and-medium-size enterprises, lab space and equipment for device testing and R&D, and affordable office space and coworking memberships.



[The Centrepolis Accelerator](#) is accelerating the growth of Southeast Michigan’s advanced manufacturing, innovative hardware entrepreneurs and small manufacturers by providing access to funding, experts and key business and product development resources.



[Clean Energy Trust](#) brings cleantech innovation to market by finding, funding, and growing high-impact cleantech startups from the Midwest. Structured as a nonprofit, Clean Energy Trust makes seed investments and provides patient, hands-on support to help entrepreneurs scale and succeed.



[Cleantech San Diego](#) is a member-based business organization that positions the greater San Diego region as a global leader in the cleantech economy and smart cities movement. As a nonprofit organization, Cleantech San Diego is uniquely suited to support the industry by fostering collaborations across the private-public-academic landscape, leading advocacy efforts to promote cleantech priorities, and encouraging more equitable investment across the San Diego region.



COMMUNITY PARTNERS *(Continued)*

[EnergyAfrica](#) is transforming the African economy by providing accessible, affordable, sustainable, and reliable energy solutions to every citizen.



[Greentown Labs](#): our members, our partners, and our staff are united by a common mission: solving the climate crisis through entrepreneurship and collaboration. Whether you're a startup founder or a policymaker or an investor or a corporate executive, this is the place where you can take climate action.



For each [IndieBio](#) program, early-stage biology companies move to downtown San Francisco or New York City to take part in an intense 4-month program unlike anything they've ever experienced in their PhD's and Post-doctoral training. Founders engage with customers and partners, pitch to investors, and turn science into a real product people pay for. Both locations run 2 programs with 15 companies each year.



[LACI](#) is unlocking innovation through startups, transforming markets with partnerships and enhancing community inside our campus and out in our neighborhoods.



[OpenGrants](#) is empowering startups, nonprofits, grant writers, foundations, and government agencies to participate in a new paradigm of funding. The OpenGrants platform—a search engine and expert marketplace—unlocks non-dilutive U.S. funding for organizations around the world.



[Rockies Venture Club](#) is an angel investing group dedicated to accelerating economic development by educating and connecting investors and entrepreneurs.



To address environmental challenges while enabling economic growth, Bertrand Piccard has launched, through the [Solar Impulse Foundation](#), the challenge to select 1000 solutions that can protect the environment in a profitable way and present them to decision-makers to fast-track their implementation. A way to take the success of the solar-powered flight around the world further.



[Sustain Southern California](#) (Sustain SoCal) accelerates cleantech economic growth and sustainability initiatives through innovation, collaboration and education.



[VertueLab](#) is a nonprofit fighting climate change by providing funding and holistic entrepreneurial support to cleantech startups. Through a decade of work, we have proven that our model can accelerate climate solutions that are key to reversing the climate crisis.



[The Yield Lab Institute](#) drives sustainable agrifood tech innovation, globally. We believe that sustainably feeding the growing global population will require an increase in diverse innovation, entrepreneurs and startups in the area of agrifood technology.



IGF 2021 AGENDA

TUESDAY, APRIL 20 / PITCH COMPETITION

Mountain Time Zone, UTC -6:00

PITCH SESSION 1 (two concurrent sessions)

MST	Early Stage Track	Commercialization Stage Track
9:30 a.m.	Opening	Opening
9:35 a.m.	Welcome Remarks - Martin Keller	Welcome Remarks - Martin Keller
9:40 a.m.	Keynote - John Lochner, Vice President of Innovation at NYSERDA	Keynote - John Lochner, Vice President of Innovation at NYSERDA
10:00 a.m.	Mosaic Materials	EnPower
10:20 a.m.	Octet Scientific	EH Group
10:40 a.m.	Andluca Technologies	Modern Electron
11:00 a.m.	QD Solar	Qubitekk
11:20 a.m.	Jolt Energy Storage Technologies	Soteria Battery Innovation Group
11:40 a.m.	Break	
12:00 p.m.	Blue Frontier	Membrion
12:20 p.m.	Power to Hydrogen	Quidnet Energy
12:40 p.m.	Ekona Power	Sierra Energy
1:00 p.m.	Combined Energies	Shower Stream
1:20 p.m.	BlueDot Photonics	Opus 12
1:40 p.m.	Closing	Closing

WEDNESDAY, APRIL 21/ PITCH COMPETITION

Mountain Time Zone, UTC -6:00

PITCH SESSION 2 (two concurrent sessions)

MST	Emerging Markets Track	Growth Track
9:30 a.m.	Opening	Opening
9:35 a.m.	Welcome Remarks - Dr. Vanessa Z. Chan, U.S. DOE Chief Commercialization Officer	Welcome Remarks - Dr. Vanessa Z. Chan, U.S. DOE Chief Commercialization Officer
9:40 a.m.	Keynote	Keynote
10:00 a.m.	Enerbrain	Natural Fiber Welding
10:20 a.m.	Azelio AB	Energyworx
10:40 a.m.	NovoNutrients	SensorUp
11:00 a.m.	Suncast	Akselos
11:20 a.m.	SolarSteam	G2V Optics
11:40 a.m.	Break	
12:00 p.m.	OnTo Technology	Full Harvest Technologies
12:20 p.m.	Fibos	Copper Labs
12:40 p.m.	Watts Battery	WindESCo
1:00 p.m.	Electro-Active Technologies	SeekOps
1:20 p.m.	encoord	Heila Technologies
1:40 p.m.	Closing	Closing

IGF 2021 AGENDA *(Continued)*

THURSDAY, APRIL 22/ AWARDS AND ONE-ON-ONE NETWORKING SESSIONS

Mountain Time Zone, UTC -6:00

MST	
9:30 a.m.	Opening
9:35 a.m.	Sponsor Message - For ClimateTech
9:40 a.m.	Sponsor Keynote - Power Africa
9:55 a.m.	Awards
10:15 a.m.	Closing
10:20 a.m.	Break
10:30 a.m.	One-on-One Networking Session 1
12:30 p.m.	Break
1:00-3:00 p.m.	One-on-One Networking Session 2

PRESENTING COMPANIES

EARLY STAGE COMPANIES

Andluca Technologies Inc.

Nicholas Davy, Co-Founder & CEO, Princeton, New Jersey, Energy Efficiency & Management, nick@andluca.com, Tuesday, 10:40 a.m.

Andluca spun out of Princeton University and develops wireless, UV-powered smart windows. These windows intelligently respond to sunlight to save energy, reduce glare, generate renewable power, and improve wellness.



Blue Frontier

Daniel Betts, CEO, Parkland, Florida, Energy Efficiency and Management, daniel.betts@bluefrontierac.com, Tuesday, 12:00 p.m.

Blue Frontier has redefined air conditioning for commercial buildings to improve occupant health, productivity, and comfort. Our high-efficiency, grid-interactive air conditioner is cost-effective and helps reduce the carbon footprint of buildings. We recently were accepted into Third Derivative's cohort to accelerate our technology development.



BlueDot Photonics

Jared Silvia, CEO, Kirkland, Washington, Solar Power Manufacturing, jared.silvia@bluedotphotonics.com, Tuesday, 1:20 p.m.

BlueDot Photonics is delivering higher efficiency solar power using perovskite materials. In 2020, we were one of three companies to receive funding from the Shell GameChanger Accelerator™ Powered by NREL to develop our technology. We are founding members of the U.S. Manufacturing of Advanced Perovskite Consortium, which aims to propel perovskite technology further.



Combined Energies

Mark Sperry, Co-founder & CEO, Latham, New York, Energy Storage, mark.sperry@combined-energies.com, Tuesday, 1:00 p.m.

Combined Energies is focused on the design, production, and sales of power electronics for renewable power, energy storage, and electric vehicle applications. Our patented DC-to-DC converter designs provide improved functionality, higher efficiency, smaller footprint, and lower cost than available alternatives.



Ekona Power

Chris Reid, CEO, Vancouver, British Columbia, Emissions Markets and Controls, chris.reid@ekonapower.com, Tuesday, 12:40 p.m.

Ekona is developing a novel methane pyrolysis platform that delivers a clean, low-cost, and scalable solution for industrial hydrogen production. Our founders are Evok Innovations and Innovative Breakthrough Energy Technologies. Some of our funding partners include Natural Resource Canada, National Research Council, and the Industrial Research Assistance Program.



EARLY STAGE COMPANIES *(Continued)*

Jolt Energy Storage Technologies

Tom Guarr, Co-Founder and CTO, Holland, Michigan, Energy Storage, tom.guarr@jolt-energy.com, **Tuesday, 11:20 a.m.**

Jolt's mission is embodied by its tagline "Organic Batteries Powering a Renewable Grid". Founded in 2014, we have refined and validated our core technology through partnerships with both Argonne National Lab and NREL. A pilot study employing the NREL microgrid is planned for spring/summer 2021.



Mosaic Materials

Thomas MacDonald, Co-founder & CTO, Alameda, California, Emissions Markets and Controls, tmcdonald@mosaicmaterials.com, **Tuesday, 10:00 a.m.**

Mosaic Materials is reducing the cost and environmental impact of CO₂ emissions through the application of ultrahigh capacity solid sorbents. Our sorbents have three times the capacity of existing commercial sorbents, lowering capital and operating expenditures for our customers in an array of applications from life support to direct air capture.



Octet Scientific

Onas Bolton, Founder & CEO, Cleveland, Ohio, Energy Storage, onas.bolton@octetsci.com, **Tuesday, 10:20 a.m.**

Octet Scientific is unlocking a new generation of safe, sustainable energy storage. Batteries based on inexpensive, non-toxic, recyclable zinc are beginning to enter the stationary and grid storage markets. Our novel electrolyte additives improve battery performance, lifespan, and efficiency.



Power to Hydrogen

Tad Dritz, CEO, Columbus, Ohio, Energy Storage, tad@power-h2.com, **Tuesday, 12:20 p.m.**

Power to Hydrogen (P2H2) is accelerating the transition to a clean energy future by improving access to and affordability of renewably-derived green hydrogen and energy storage. Our patented Clean Energy Bridge technology utilizes an efficient and cost-effective reversible fuel cell system to generate hydrogen on-site and produce power when most needed.



QD Solar

Dan Shea, CEO, Toronto, Ontario, Solar Power Manufacturing, dan@qdsolarinc.com, **Tuesday, 11:00 a.m.**

QD Solar is manufacturing patented low-cost, lightweight, and flexible high-power density solar sheets by combining two light-absorbing nanomaterials - perovskites and quantum dots. This combination of materials enables higher energy density and efficiency as compared to silicon-based solar sheets.



COMMERCIALIZATION STAGE COMPANIES

EH Group

Christopher Brandon, Co-founder, Renens, Switzerland, Other Power Generation Manufacturing, cbrandon@ehgroup.ch, **Tuesday, 10:20 a.m.**

EH Group has commercialized a low-cost, low-temperature fuel cell technology. Due to the compact size, our fuel cells can be used in a variety of applications such as buses, forklifts, and drones. They can also be deployed in microgrids, commercial buildings, and data centers.



EnPower

Annette Finsterbusch, CEO & President, Phoenix, Arizona, Energy Storage, annette@enpowerinc.com, **Tuesday, 10:00 a.m.**

EnPower has developed fast-charging battery technology to unlock the full potential of lithium-ion. Our advanced electrodes extend the life of batteries and improve performance. These batteries are applicable in automotive, defense, and large-scale energy storage.



Membrion

Greg Newbloom, Founder & CEO, Seattle, Washington, Water and Wastewater, greg@membrion.com, **Tuesday, 12:00 p.m.**

Membrion manufactures and sells high-performance, low-cost ion exchange membranes used in electrochemical applications such as electrodialysis for desalination, demineralization, and wastewater treatment. Our membranes solve the problems of high energy use, poor water recovery, and high capital costs associated with industrial water treatment.



Modern Electron

Max Mankin, Co-founder & CTO, Bothell, Washington, Energy Efficiency and Management, max.mankin@modernelectron.com, **Tuesday, 10:40 a.m.**

Modern Electron is decarbonizing building energy. Founded in 2015, we are commercializing a novel residential direct-heat-to-power technology. Our thermionic converter works with natural gas boilers and furnaces to convert wasted heat into electricity, which can power your homes.



Opus 12

Nicholas Flander, Co-founder & CEO, Berkeley, California, Emissions Markets and Controls, nicholas@opus-12.com, **Tuesday, 1:20 p.m.**

At **Opus 12**, we have developed a device that converts CO₂ into valuable chemicals and fuels that are cost-competitive with conventional products. We can reduce the carbon footprint of the world's heaviest emitters, while creating a new revenue stream from what is discarded today as a waste product.



COMMERCIALIZATION STAGE COMPANIES *(Continued)*

Qubitekk

Duncan Earl, President & CTO, Vista, California, Smart Grid, dearl@qubitekk.com, Tuesday, 11:00 a.m.

[Qubitekk](#) provides innovative quantum computing entangled photon communications and cybersecurity protection. This technology has applications in critical defense, energy, and communications infrastructure, including 5G and satellite.



Quidnet Energy

Joe Zhou, CEO, Houston, Texas, Energy Storage, jzhou@quidnetenergy.com, Tuesday, 12:20 p.m.

[Quidnet Energy](#) has developed a geomechanical pumped storage system. Our modular technology uses subsurface rock layers for energy storage, and can be deployed across diverse geographic areas.



Shower Stream

Priya Thomas, Research Scientist, Austin, Texas, Energy Efficiency and Management, priya@showerstream.net, Tuesday, 1:00 p.m.

[Shower Stream](#) has developed a smart shower system that minimizes shower water waste, also called 'behavioral waste', in the hotel industry. Our technology promotes water and energy conservation, and provides additional benefits in hotel maintenance.



Sierra Energy

Mike Hart, CEO, Davis, California, Waste and Recycling, mike@sierraenergy.com, Tuesday, 12:40 p.m.

[Sierra Energy's](#) FastOx[®] gasification turns waste into hydrogen without burning. FastOx gasification uses oxygen and steam to heat waste to 4,000°F, where all waste breaks down at the molecular level. Organic material is converted into hydrogen and inorganic material is recovered as either a non-leaching stone or molten metal.



Soteria Battery Innovation Group Inc.

Brian Morin, CEO, Greenville, South Carolina, Energy Storage, Brian.Morin@SoteriaBIG.com, Tuesday, 11:20 a.m.

Focusing on innovation, [Soteria](#) has developed two licensable technologies to prevent fires in lithium-ion batteries. One is our fire-resistant material architecture and the other is a non-woven separator between electrodes. We are bringing the industry together to tackle the problem of battery fires through an open innovation consortium whose initial members include NASA, Mercedes-Benz, DuPont, Bosch, Applied Materials and Teijin.



EMERGING MARKETS COMPANIES

Azelio AB

Jonas Elkind, CEO and President, Amal, Sweden, Energy Storage, jonas.ekind@azelio.com, Wednesday, 10:20 a.m.

[Azelio](#) has developed a thermal energy storage (TES) system using recycled aluminum as storage media together with a Stirling engine. The TES provides dispatchable electricity for 13 hours at nominal effect as a renewable baseload, where reliable power is needed. Azelio received the Solar Impulse Efficient Solution label in February 2021.



Electro-Active Technologies

Alex Lewis, CEO, Knoxville, Tennessee, Biofuels and Biomaterials, alewis@electroactive.tech, Wednesday, 1:00 p.m.

Spun out of Oak Ridge National Laboratory in 2017, [Electro-Active Technologies](#) converts organic waste to renewable products such as hydrogen. Our systems can be deployed onsite or in a decentralized location. We have participated in multiple accelerator programs such as IndieBio, H2 Refuel, and Innovation Crossroads.



encoord

Carlo Branucci, CEO, Denver, Colorado, Smart Grid, carlo@encoord.com, Wednesday, 1:20 p.m.

[encoord](#) provides software tools to plan today's energy systems and their transition to a decarbonized future. Our core technology is the Scenario Analysis Interface for Energy Systems (SAInt), a software platform to model energy networks & markets. SAInt advances energy planning by allowing users to model coupled energy networks and analyze the challenges and synergies at their interface.



Enerbrain

Filippo Ferraris, International Sales Director, Turin, Italy, Energy Efficiency and Management, ff@enerbrain.com, Wednesday, 10:00 a.m.

[Enerbrain](#) was founded in 2015 by four founders. We make commercial buildings sustainable through a holistic energy management solution that is quick and easy to install.



Fibos

Nicholas Burgwin, Co-Founder, Toronto, Ontario, Smart Grid, nicholas@fibos.ca, Wednesday, 12:20 p.m.

[Fibos](#) develops optical sensors that enable data collection in various applications such as aerospace, electric vehicles, and health monitoring. Our sensors are especially suited for harsh environments.



EMERGING MARKETS COMPANIES *(Continued)*

NovoNutrients

David Tze, CEO, Sunnyvale, California, Environmental Services & Agricultural Solutions, dtze@novonutrients.com, **Wednesday, 10:40 a.m.**

NovoNutrients makes food and feed from CO₂[™]. We create a sustainable food future by transforming CO₂ from emissions into protein and other high-value food and feed ingredients.



OnTo Technology

Steve Sloop, CEO, Bend, Oregon, Waste and Recycling, ssloop@onto-technology.com, **Wednesday, 12:00 p.m.**

OnTo Technologies solves industry problems related to battery recycling. We deactivate batteries to improve the safety, storage, and transportation. Our direct recycling solutions allow reuse of certain scraps in cell manufacturing, while older scraps are reused for cathode manufacturing. We were awarded the Phase II Battery Recycling Prize from the Office of Energy Efficiency & Renewable Energy in Dec 2020.



SolarSteam

Apostol Radev, CEO, Calgary, Alberta, Solar Power Manufacturing, apostol@solarsteam.ca, **Wednesday, 11:20 a.m.**

SolarSteam addresses the problem of high-cost and high-emissions associated with process heat. We develop cost-effective concentrating solar systems for northern climate heat-intensive industry to improve performance and reduce emissions. Some of the applicable markets include petrochemicals, pulp & paper, food processing, healthcare, district heating, materials transformation, and alcohol production.



Suncast

Constanza Levicán, Founder & CEO, Santiago, Chile, Smart Grid, constanza@suncast.cl, **Wednesday, 11:00 a.m.**

Suncast develops a predictive system for renewable energies that maximizes the profitability of power plants, optimizes PV panel cleaning processes and complies with regulations. Our models achieved up to 50% cost savings in PV panel cleaning services for a 9 MW power plant. Our technology is currently deployed in Chile and Mexico, and we have plans to expand to other regions. We are the first Latin American startup to sign a partnership with ABB for the energy industry.



Watts Battery

Yuriy Vlasov, CEO, Palo Alto, California, Energy Storage, yuriy.vlasov@wattsbattery.com, **Wednesday, 12:40 p.m.**

Watts Battery provides a portable and Lego-style modular all-in-one energy storage solution. Our solution can substantially simplify electrification and access to renewable energy while enabling end-users to offer energy services to utilities through the cloud.



GROWTH STAGE COMPANIES

Akselos

Thomas Leurent, CEO, Lausanne, Switzerland, Energy Efficiency and Management, info@akselos.com, **Wednesday, 11:00 a.m.**

Awarded as Technology Pioneer 2020 by the World Economic Forum, [Akselos](#) provides predictive structural digital twins for large asset's integrity management.



Copper Labs

Dan Forman, CEO, Boulder, CO, Energy Efficiency and Management, dan@copperlabs.com, **Wednesday, 12:20 p.m.**

[Copper](#) is a wireless energy monitor that delivers real-time data from electric, gas and water meters so utilities can engage consumers with actionable insights that manage peak demand and accelerate energy efficiency, with or without smart meters. With real-time visibility behind the meter and a new channel to engage consumers with actionable insights, we help utilities take control of energy demand.



Energyworx

Marcel E. Smit, CEO, Houten, Netherlands, Energy Efficiency and Management, marcel.smit@energyworx.org, **Wednesday, 10:20 a.m.**

[Energyworx](#) develops cloud-based energy data management solutions. We help utility companies in monetizing their rapidly growing data collected from smart meters and Internet-of-Things devices. Our platform powers a variety of cloud-based, utility specific applications to better understand and predict customer consumption patterns. Gartner named Energyworx a visionary vendor.



Full Harvest Technologies

Christine Moseley, Founder & CEO, San Francisco, California, Environmental Services & Agricultural Solutions, christine@fullharvest.com, **Wednesday, 12:00 p.m.**

[Full Harvest](#) is solving the massive \$2.5 billion food waste problem with technology and innovation services. We run the first B2B online marketplace for imperfect and surplus produce, connecting farmers to food and beverage manufacturers.



G2V Optics

Ryan Tucker, CEO, Edmonton, Alberta, Lighting, ryan@g2voptics.com, **Wednesday, 11:20 a.m.**

[G2V](#) is an emerging leader in smart lighting, monitoring, and data science solutions for advanced cultivation and solar research applications. Our indoor agriculture platform combines the power of software-controlled spectra with plant data to maximize yield. Our LED solar simulators can replicate any terrestrial or extraterrestrial solar spectra for research purposes.



GROWTH STAGE COMPANIES *(Continued)*

Heila Technologies

*Jorge Elizondo, CO-founder & CTO, Somerville, Massachusetts, Energy Efficiency and Management, **Wednesday, 1:20 p.m.***

The [Heila](#) EDGE® Platform is a modular, distributed control platform to build distributed energy resources systems from the ground up. Our platform allows for faster deployment, lower costs and automated operations/optimizations with actionable insights in real time. Our artificial intelligence functionality improves microgrid operations over time.



Natural Fiber Welding

*Luke Haverhals, Founder and CEO, Peoria, Illinois, Biofuels & Biomaterials, luke.haverhals@naturalfiberwelding.com, **Wednesday, 10:00 a.m.***

[Natural Fiber Welding](#) has developed and scaled patented platforms to make all-natural performance materials for fashion and textile, accessories, footwear, automotive, furniture. We can 'copy and paste' our production systems into global supply chains. We have partnered with leading brands such as Allbirds and Ralph Lauren to commercialize plant-based products.



SeekOps

*Andrew Aubrey, SVP for Strategic Partnerships, Austin, Texas, Emission Markets and Controls, aaubrey@seekops.com, **Wednesday, 1:00 p.m.***

[SeekOps](#) develops and deploys advanced gas sensor technology to detect, localize, and quantify natural gas emissions through integrated drone systems. We work with several major oil and gas customers to efficiently deliver quantitative emissions inspection services. We are currently expanding into the renewable natural gas and waste management sectors.



SensorUp

*Geoff Mair, CEO, Calgary, Alberta, Emissions Markets and Controls, geoff.mair@sensorup.com, **Wednesday, 10:40 a.m.***

[SensorUp](#) is a NATO-award winning geospatial Internet-of-Things and artificial intelligence platform for organizations having complex operations spread across a vast geographical area. We combine our software and operations data to deliver a location-centric, real-time digital twin of your moving assets. Many government agencies such as the U.S. Department of Homeland Security, NASA, and the United Nations have adopted our technology.



WindESCo

*Blair Heavy, CEO, Burlington, Massachusetts, Energy Efficiency and Management, blair@windesco.com, **Wednesday, 12:40 p.m.***

[WindESCo](#) develops data analytics to improve wind plant output and lower operating costs. We combine machine learning with physics-based models to provide actionable insights to wind farm operators.



THANK YOU TO OUR INVESTORS

The NREL Innovation and Entrepreneurship Center thanks the community of investors who have volunteered their time to contribute to the One-on-One Networking Sessions. This is the place where new ideas take flight, and it could not be possible without the excitement, curiosity, and support they bring to the cleantech ecosystem. Find each participating investor's thesis in their IGF event app profile.

A special thank you to all 2021 NREL Industry Growth Forum Selection Committee members. The IGF Selection Committee provides invaluable support and expert perspective as we recruit applicants for the IGF each year. Their voluntary role is a cornerstone of the IGF, and enables the continued convening of high-caliber companies with influential investors. Connect with NREL at iec@nrel.gov to volunteer for the 2022 IGF Selection Committee. For more information on individual investors and what types of companies and technologies they are looking for, see their theses listed on our website: nrelforum.com.

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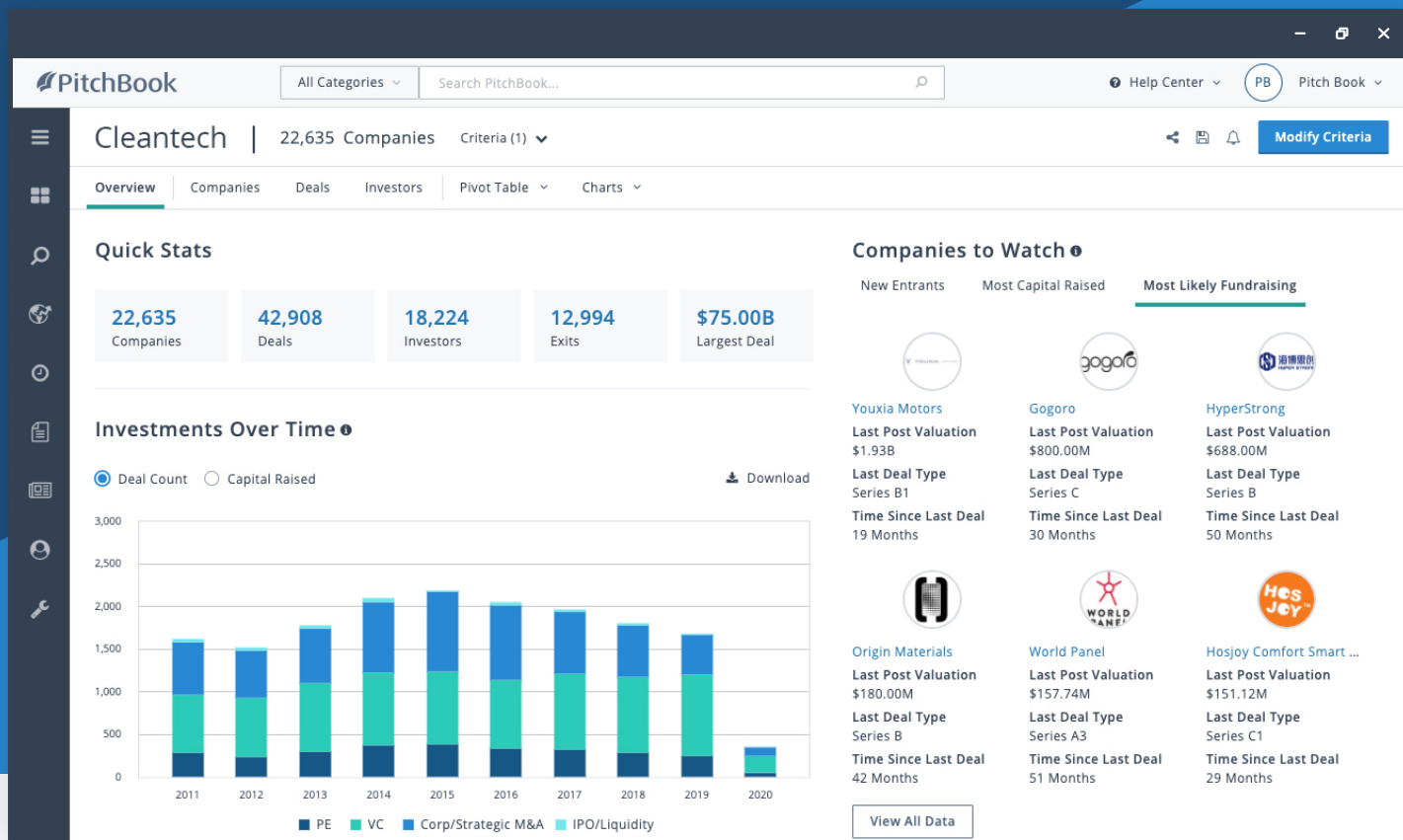
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WITH LOVE FROM COLORADO!

Since you aren't able to travel to Colorado this year, we wanted to send a little bit of Colorado to you! Please enjoy these locally sourced snacks and swag on us! Here is a little more information on each item.

| Ampersand Coffee Roasters

Ampersand is an ethical coffee roaster dedicated to women's empowerment, upward spirals, and environmental sustainability. We roast coffees produced by women-owned and operated farms, working closely with Cafe Femenino and the International Women's Coffee Alliance. Our core idea is that coffee tastes better when there's a mission behind it.



| Celestial Seasonings

In 1969, one of **Celestial Seasonings** founders, Mo Siegel, handpicked wild herbs from the Rocky Mountains in Colorado and used them to make our first tea. In the following years, he sold Mo's 36 and 24 Herb Teas to health food stores, eventually selling them in hand-sewn muslin bags. It was in those early years that we began creating and defining the herbal tea category.



| Chocolove

Putting the Love in Chocolate. **Chocolove**, which Timothy Moley started 25 years ago in Boulder, Colorado, has worked smartly and persistently for years to get cocoa sourcing right. We see that the love is put in early in the process. Chocolove specifies certified, fully traceable cocoa. Over 90% of the cocoa beans that we purchase, and package are traceable to the farmer's coop where they were grown. What this means is the cocoa in a Chocolove bar is the cocoa that is from certified farms. You might expect this to be a simple fact for all chocolate, but not so for some other companies. Certification on our wrapper means that the cocoa in the bar was made by people following the laws of the International Labor Organization and the rules of the Rainforest Alliance. While you might think the Rainforest Alliance only cares about the rainforest, they are in fact focused on people first as stewards of the land and forest. As we celebrate our 25th year, we continue to strive to do more to do right by the farmer. We quietly and consistently do what is right because we believe that Chocolove's connection to the farmer and to our customer is something you can taste and well-being you can feel. So, when you say, "I love Chocolove", it rings true.



| Colorado Jack Popcorn

The process of making **Colorado Jack's** Legendary Popcorn begins in the fields of Colorado and Nebraska where the kernels are grown by dedicated farmers. We are proud to be farmer grown and are owned by a 5th generation farm family based out of North Dakota. After harvest, the kernels are shipped from our plant in Colorado to North Dakota for popping, flavoring and processing. Our two North Dakota facilities take pride in providing work for individuals with cognitive and physical disabilities. Like all people, persons with disabilities are happiest when they have meaningful work. Our popcorn is popped with the purpose of giving back. A portion of every sale is given to organizations serving people with disabilities. To learn more about our flavors and company find us online at: coloradojackpopcorn.com



WITH LOVE FROM COLORADO! *(continued)*

Don't Go Nuts

Don't Go Nuts chewy granola bars and creamy soy spreads are safely nut-free and so delicious that kids (and adults) can't wait to eat more! We make sure peanuts and tree nuts have never touched our products. Our Field to Fingers Nut Free Process provides children with trustworthy foods that they can rely on. Our products are also Gluten Free, Organic, and Kosher.



Lake Valley Seed

Lake Valley Seed is a national, full line garden seed company with more than 30 years of experience as a trusted resource for flower, herb, and vegetable seeds, offering over 800 varieties. Distributed in garden centers, hardware stores, farm and ranch stores, grocers, and other retail stores throughout the United States, we've grown a family of dedicated customers. Our flower, vegetable, and herb seeds are carefully selected from growers around the world. All are Non-GMO and untreated (including no treatment with neonicotinoid pesticides), and our organic seeds are USDA Certified. We value the importance of seed quality and ensure this with twice-yearly germination testing.



Perky Jerky

Perky Jerky powers you from workout to night out. It's great for a quick pre-game boost, busy moms on-the-go, or a mid-mountain hike snack. It's a functional morning desk snack and the perfect munchie to survive a long road trip. Satisfying and portable, it's the perfect fuel to do, well, whatever it is that you do! What makes it so healthy? It's low calorie, low fat, low carb and a great protein source. Unlike most jerky products ours has none of the bad stuff: NO NITRITES • NO PRESERVATIVES • NO ADDED MSG • GLUTEN-FREE



skratch labs

skratch labs: We create products that solve problems which means every ingredient has a purpose. That purpose is to help people perform better. We focus on real ingredients and promote an equally healthy lifestyle. Our products are made from real food ingredients to help you bust your butt not your gut.





INDUSTRY GROWTH FORUM

WHERE INVESTMENT MEETS INNOVATION



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