

FEDTECH

2023

DOE EMERGING TECH
STARTUP STUDIO



DOE Emerging
Tech Studio
powered by FEDTECH

venturesummit

VENTURE SUMMIT
EVENT GUIDE

August 17
2023

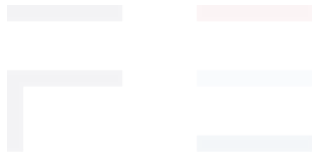
CONTENTS

"Innovation distinguishes between a leader and a follower." - Steve Jobs

About FedTech	3
Summit Schedule	4
Sponsors	5
Opening Remarks	9
Pitching Startups	8
Expert Panel	11



FedTech was born in 2015 after participating in the National Science Foundation's Innovation Corps (I-Corps) program when we saw an opportunity to commercialize the ~\$150 billion per year in federally funded R&D. We iterated on different concepts to materialize our vision, before landing on the most effective way to move cutting edge technology from the bench to the marketplace: the Startup Studio. FedTech has since grown from a regional pilot to an international program, working with hundreds of entrepreneurs and over 35 top research labs across government, academia and industry. Our operations have expanded significantly since our first Startup Studio 2015, as we now work with fortune 500 companies, non-profit organizations, and forward-thinking government agencies in a number of capacities, while still remaining true to our mission of unlocking the benefits of technology through entrepreneurially minded people.



SUMMIT SCHEDULE

The culmination of the DOE Emerging Tech Studio program is an opportunity for startups to pitch in front of an expert panel, industry, investors, and for the rest of the community to come together to celebrate.

Thursday, 17 August 2023

3.00 - 3.15 PM	Welcome & Opening Remarks by NNSA and DOE OTT Leadership
3.15 - 3.35 PM	Alumni Showcase: BioVind, LLC
3.35 - 5:11 PM	6 Startups Pitches, Q&A Round
5:11 - 5:21 PM	Additional Team Spotlight
5:21 - 5:30 PM	Winner announced and Closing Remarks

SPONSORS

Thank you for your support and leading the effort to bring technological innovation to the commercial world.



**National Nuclear Security
Administration**



**Office of Technology Transitions
U.S. Department of Energy**

OPENING REMARKS



Jahleel Hudson

Office of Chief Science and Technology Officer
Technology and Partnerships Officer
National Nuclear Security Administration -
Defense Programs

Jahleel Hudson is the Technology and Partnerships Officer for the Chief Science and Technology Office within the National Nuclear Security Administration's Defense Programs. In this role Jahleel is responsible for the oversight of technology transfer, partnerships and collaborations, research security and, foreign engagements at the NNSA labs, plants, and sites.

Jahleel has been responsible for the creation and funding of numerous innovative HQ technology transfer programs such as, forging partnerships with Emory University School of Law (where participating students create commercialization plans) and the Inspiring Diversity in Entrepreneurial Activates, or "IDEA" Seminar to specifically tackle the issue of the limited amounts of diversity within technology partners.

Jahleel has held numerous positions deep within the weapons program. He was a Program Manager for research and development for the Intercontinental Ballistic Missile and Cruise Missile systems. Jahleel is a recipient of the prestigious Defense Programs Award of Excellence for his work supporting the nuclear stockpile and is a mechanical engineering graduate of Howard University.

OPENING REMARKS



Victor Kane

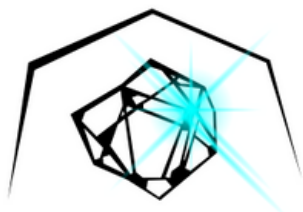
Deputy Director for Commercialization Programs
for Office of Technology Transitions,
U.S. Department of Energy (DOE)

Victor Kane serves as the deputy director for commercialization programs where he and the Commercialization Programs team work with U.S. Department of Energy (DOE) program offices and National Laboratories to develop and manage external funding programs and activities. The team is responsible for implementing the Technology Commercialization Fund (TCF), Energy I-Corps, Energy Program for Innovation Clusters (EPIC), and other technology agnostic programs seeking to bring impactful energy technologies to market.

Prior to joining the Office of Technology Transitions, Victor served as the acting program manager for the Solar Energy Technologies Office (SETO) Manufacturing and Competitiveness team, having spent the previous three years helping establish the American-Made Challenges Solar Prize and the American-Made Network.

Victor holds a Bachelor and a Master of Science degrees in mechanical engineering and Master of Business Administration from the Georgia Institute of Technology.

PITCHING TEAMS



ELECTRON FORGE
INDUSTRIALS, INC

Electron Forge Industrials, Inc

This Startup leverages Electron Beam Assisted Fused Deposition Modeling of asphalt that aims to improve the speed, efficiency, and quality of asphalt 3D printing.

F E D T E C H



Upcycling+

This Startup leverages a novel process for upcycling polyethylene terephthalate (PET) plastics using a chemical reaction that transforms them into higher-value materials.

PITCHING TEAMS



TraceDTX

This Startup leverages the thermal fragmentation of the opioid targets to identify both fentanyl and its analogs (illicit—and often deadly—alterations). This system detects both known and unknown fentanyl analogs. The detector is engineered with a high selectivity, and thus a very low false alarm rate.

WEARABLE DOSE

WearableDose

This Startup leverages a flexible electronic polymer dosimeter that is designed to more accurately administer radiation therapy. It is a wearable device that is capable of measuring the dose of radiation delivered to a patient during radiation therapy.

PITCHING TEAMS



NuTronics Technologies

This Startup leverages a technology that improves the detection of nuclear hazards that uses machine learning algorithms to analyze and interpret data from various sensors and sources to identify potential nuclear threats.



Samal Energy

Samal Energy

This Startup leverages a cutting-edge energy-efficient 3D printed triply periodic minimal surfaces (TPMS) for applications needing heat exchangers that can handle high heat and pressures.

EXPERT PANEL

Our Startups will pitch to a panel of industry experts and field questions in a quick-fire Q&A round. The experts come from diverse backgrounds including entrepreneurship, venture capital, science, and national security.



Jordan Clancy

Jordan serves as Adelante Consulting's President and Chief Financial Officer. Before joining Adelante, Jordan was an executive at several privately-held energy-focused companies with footprints in California, Texas, Colorado and New Mexico.

Jordan began his career holding finance, accounting, and business development roles for a family office in Santa Monica primarily focused in the energy sector.

Jordan has served in an executive officer capacity for six of his 14 years of post-graduate experience. He's steered several companies through their Series A and B funding rounds in the alternative fuels and clean-tech sectors. Jordan is an active angel investor and believes it is vital to support local entrepreneurs and innovates.

Jordan completed his MBA at the Graziadio School of Business at Pepperdine University. Jordan received Bachelor of Science degrees in Finance and Marketing from the WP Carey School of Business at Arizona at Arizona State University. He is also an eagle scout.

EXPERT PANEL

Our Startups will pitch to a panel of industry experts and field questions in a quick-fire Q&A round. The experts come from diverse backgrounds including entrepreneurship, venture capital, science, and national security.



Carrie Freeman

Carrie is the Co-CEO of SecondMuse and is responsible for the performance of the company and its alignment to strategy. On a day to day basis, Carrie is broadly responsible for the global delivery of SecondMuse's work, and steering the ship.

Passionate about sustainability, equality and innovation, Carrie has worked to advance these on a global stage as an entrepreneur and previously as an intrapreneur. She's pushed the theory of complex collaboration between governments, business, and communities throughout her career.

Prior to joining SecondMuse, Carrie spent 15 years at Intel in various management positions. In her last role there as Director of Sustainable Business Innovation, she pioneered strategies around a corporate impact investing fund and the development of technology market solutions related to natural resource management and climate change. In 2009, Carrie formed the corporate sustainability group and directed corporate-wide efforts working with key stakeholders to ensure industry leadership.

Carrie calls New Mexico her home and in 2012 was honored as a New Mexico 40 Under 40 Business Leader

EXPERT PANEL

Our Startups will pitch to a panel of industry experts and field questions in a quick-fire Q&A round. The experts come from diverse backgrounds including entrepreneurship, venture capital, science, and national security.



Dr. Deborah Hemingway

Dr. Deborah Hemingway is the Managing Partner of Ecphora Capital, an early-stage medtech venture capital firm in Baltimore, Maryland. Prior to launching Ecphora Capital, Dr. Hemingway had been active in the entrepreneurial ecosystem having founded, funded, or advised 48 startup companies -- 11

of which achieved valuations of \$10M or greater. the University of Maryland, College Park.

Throughout her 20 years of entrepreneurial, scientific, and investing experience, she honed her expertise in medical device commercialization, strategic growth, and investing.

Dr. Hemingway is also a Venture Partner at NextGen Venture Partners and teaches venture capital to MBA students at the University of Maryland, College Park. Additionally, she has held 28 board positions across corporate, non-profit, and academic sectors. Dr. Hemingway holds a Ph.D. in biophysics from the University of Maryland, College Park.

EXPERT PANEL

Our Startups will pitch to a panel of industry experts and field questions in a quick-fire Q&A round. The experts come from diverse backgrounds including entrepreneurship, venture capital, science, and national security.



Rick Stockburger

Rick drives the mission and vision of BRITE by actively engaging with prospective and current portfolio companies and their founders.

As a founder himself, and through his experiences in executive positions, he has had the opportunity to lead many individuals and help many companies to innovate and grow.

Rick's people-first mindset has led him to be a decorated combat veteran serving the United States in operations on two continents. A native of Northeast Ohio, Rick studied Political Science and Community and Economic Development at Kent State and Penn State, respectively.

He is proud to continue to call the area home and contribute to the community. He and his wife, Carly, have three children – well, if you count Shelton Henry Williams Stockburger IV... their black lab most affectionately known as Hank.

EXPERT PANEL

Our Startups will pitch to a panel of industry experts and field questions in a quick-fire Q&A round. The experts come from diverse backgrounds including entrepreneurship, venture capital, science, and national security.



Manbir Singh

Manbir Singh is the Project Manager for the BARDA Accelerator Network at the Biomedical Advanced Research and Development Authority's Division of Research, Innovation, and Ventures (BARDA DRIVE), a part of the Administration for Strategic Preparedness and Response (ASPR), within the United States

Department of Health and Human Services (HHS).

The BARDA Accelerator Network is a public-private partnership with 13 accelerators that support the health security innovation ecosystem and medical countermeasures development by sourcing and providing wraparound services such as startup-focused curriculum, technical and business mentorship, access to facilities and incubator spaces, and integration services to startups aligned with BARDA's mission.

Manbir's technical background is in microbiology and biotechnology and his professional background is in infectious disease research before transitioning to venture building, commercialization strategy, and technical and business support for early-stage innovators and entrepreneurs transitioning their technology from the bench to market. Prior to joining BARDA, Manbir supported multiple federally funded deep tech startup studios and accelerator programs, leading partnerships, technology sourcing, and diligence with labs across the DoD, DHS, DOE, NASA, NIST, HHS, and Universities.



TECHNOLOGY DESCRIPTION

Linear accelerators are used across a variety of industries today. A team of scientists have worked on next-generation innovations to this to create a high-energy technology that can open new applications across industries leading to greater job and revenue creation; efficiency & cost-savings.

TECHNOLOGY VERTICALS

- Construction
- Wastewater Sterilization
- Metal additives
- Rubber
- Medical Sterilization

REPRESENTATIVE TECHNOLOGY MARKETS

- Asphalt, Concrete
- Pharma; Dyes
- Tires
- Medical Devices



Connect with EFI Directly



Follow QR to a Presentation about EFI



**ELECTRON FORGE
INDUSTRIALS, INC.**

BRINGING A STATE-OF-THE-ART
INNOVATIVE, HIGH-POWER,
HIGH-ENERGY TECHNOLOGY TO
SEVERAL INDUSTRIES



mission@efindustrials.io

THE TEAM



**Humaira Mahi
Co-Founder**
PhD (Marketing),
MS, Environmental Engg
(Water Resources),
Duke University



**Henry Meyer
Co-Founder**
(x3) Founder with (x1)
IPO; energy and
microgrids.
Energy Studies, Duke
University.

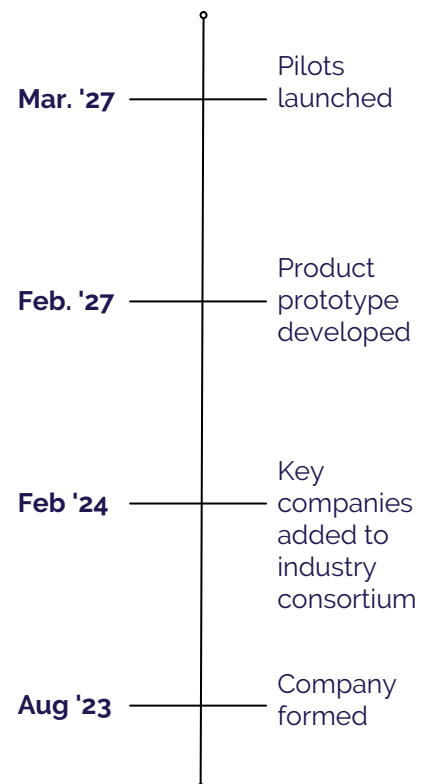


**Chief Scientific
Officer**



**Chief Technology
Officer**

PLANNED MILESTONES





TECHNOLOGY DESCRIPTION

Upcycling+ tackles plastic waste and reduces crude oil extraction by deploying innovative catalytic solutions. Our technology directly converts polyolefin waste into valuable products, eliminating costly upgrades and product separation. With low production costs, we're poised to scale rapidly and address the urgent plastic waste challenge.

TECHNOLOGY VERTICAL

Chemicals and Fuel
Manufacturing

TECHNOLOGY MARKET

Commodity Sales

MARKET SIZE

\$60 Billion

Total Available
Market

Global SAF Market

\$17 Billion

Serviceable
Available Market

US SAF Market

\$150 Million

Share of
Market

25 M gallon
production facility



UPCYCLING+

TRANSFORMING WASTE,
FUELING
SUSTAINABILITY



<https://upcyclingpluschem.com>



<https://calendly.com/xunw>

THE TEAM



Aka Tennakoon

Co-Founder, Process
development,
catalysis, leading
researcher



Xun Wu

Co-Founder,
Catalyst
development
expert, leading
researcher



Logan Jenkins

Business
Development,
Commercialization

PLANNED MILESTONES

**Pre-Piloting
(Fall 23)**

- De-risk
technology at
multi-gallon
scale

**Pilot
Campaign
(Winter 23)**

- DOE scale-up
funds
- SBIR
Application

**Pilot
Campaigns
(FY24)**

- Establish
procurement
agreements
- Establish
offtake

**Production
(FY25-26)**

- Construct 3
Tons/day
plant



TECHNOLOGY DESCRIPTION

Our cutting-edge Fentanyl Detection System provides accurate detection of fentanyl and its analogs, addressing a critical gap in the market. Utilizing a unique technology that distinguishes fentanyl from similar compounds, our system ensures rapid and precise results in various settings, including law enforcement, healthcare, and public safety.

TECHNOLOGY VERTICAL

Drug Detection Devices

TECHNOLOGY MARKET

Federal and local law enforcement agencies, and privatized companies such as security, and first responders

MARKET SIZE

\$19 Billion

Total Available Market

Market is expected to reach USD \$18.99 billion and growing at a CAGR of 17.3% within five years.

>\$10 Billion

Serviceable Available Market

We estimate over 50% of the market is from fentanyl detection

\$1 Billion

Share of Market

Our goal is to obtain 10% of market share within 5 years



TRACEDTX

TRACEDTX

ERADICATING NARCOTICS AT THEIR TRACE



www.tracedtx.com



<https://calendly.com/mo-hossain>

THE TEAM



Mo Hossain

Rice University
Over 15 years of startup experience



Carson Goodale

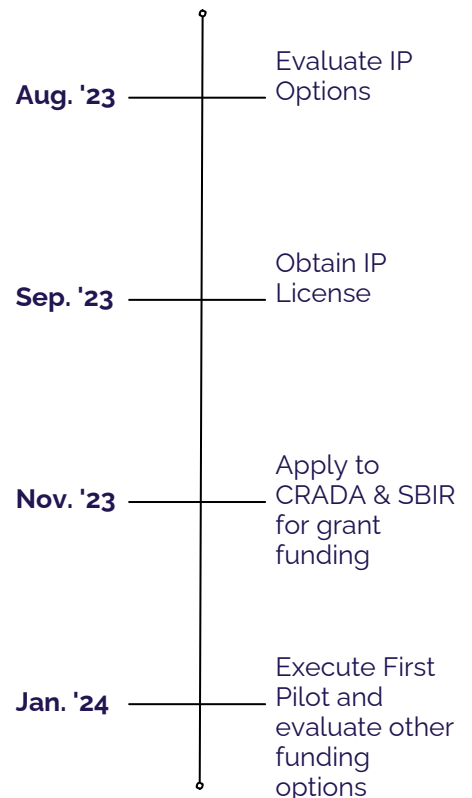
University of Iowa
2X Entrepreneur
Over 10 years of startup experience



Eduardo Cornejo

MIT
Over 20 years of Healthcare management
2 Successful Startups

PLANNED MILESTONES





WEARABLE DOSE PRECISION RADIATION DETECTION

- <https://www.linkedin.com/company/wearabledose/about/>
- <https://calendly.com/wearabledose>
- info@wearabledose.com

TECHNOLOGY DESCRIPTION

Our patented WearableDose Patch is a polymer particle detector enabling accurate administration of radiation therapy to tumors, lowering costs, and improving patient outcomes.

Wearabledose enhances radiation therapy precision, spares healthy tissue, improves proton therapy, and provides real-time treatment data.

TECHNOLOGY VERTICAL

Radiotherapy

TECHNOLOGY MARKET

Precision Radiation Detection

MARKET SIZE

\$432 Million
Total Available Market

Based on Total US Capacity and 25 units per patient

\$359 Million
Serviceable Available Market

Procedures where immobilization may fail and excluding head and neck tumors

\$120 Million
Serviceable Obtainable Market

Cases of greatest concern: pediatric and prostate cancer patients

THE TEAM



John Sanwo
CEO
Experienced technologist and leader, driving innovation and success through strategic expertise.

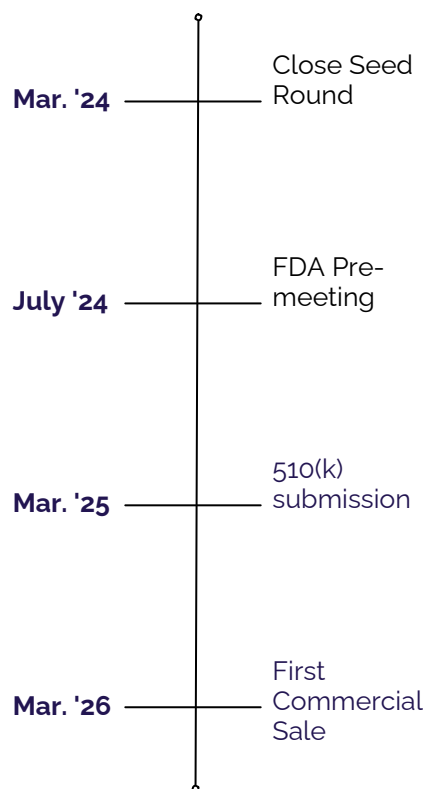


Adam Schworer
COO
Dedicated to advancing healthcare through legal and innovative technological solutions.



Udara Mendis D.Eng
CTO
Driven by a dual passion for healthcare innovation and business strategy.

PLANNED MILESTONES





TECHNOLOGY DESCRIPTION

NuTronics offers the first compact neutron and gamma ray detector for isotope identification with directionality location of the radiation source. Dual detector is unique for positions indication of directionality of source of radiation, allowing for quick and efficient detection of threats, especially helpful for use cases like third party nonproliferation examinations & passive interrogation at borders.

TECHNOLOGY VERTICAL

Homeland Security (DoD)
Energy Production (Nuclear Plants)
Medical

TECHNOLOGY MARKET

Business-to-Business

MARKET SIZE

\$2.5 Billion

Total Available
Market

\$17 Million

Serviceable
Available Market

\$25 Million

Share of Market

THE TEAM



Dr. Ryan Dorrill
Chief Science Officer

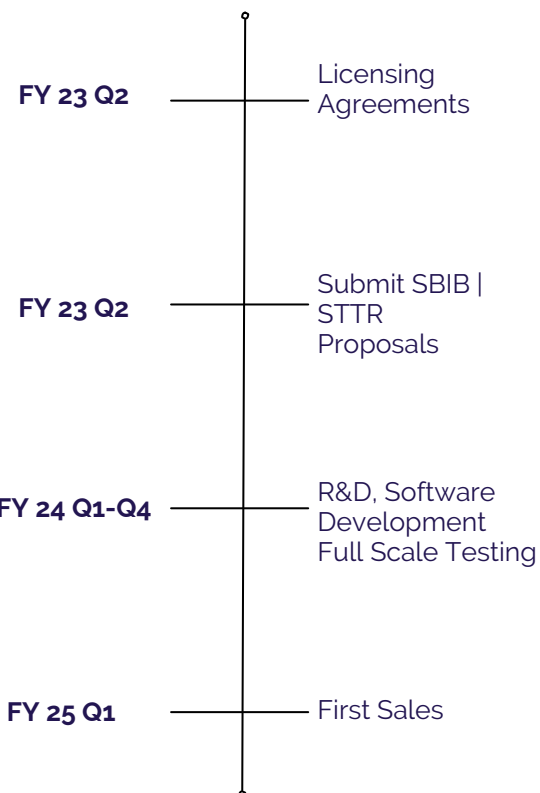


Aidan Gibbons
Chief Financial Officer



Dr. Sergio Gonzalez
Chief Product Officer,
Chief Supply Chain
Officer

PLANNED MILESTONES



NUTRONICS
TECHNOLOGIES

NUTRONICS
TECHNOLOGIES



<https://www.nutronicstechnologies.com/>



TECHNOLOGY DESCRIPTION

Introducing our disruptive technology for data server cooling, a game changer solution that's shaping the future of the digital revolution powered by AI and ML. By efficiently cooling high-performance servers, we're breaking the bottlenecks of traditional systems, enabling more processing power with less energy, and paving the way for a more sustainable, data-driven world.

This product is a next-generation air cooling system for data centers and server rooms, leveraging the patented transport mechanism technology.

The system drastically reduces energy consumption by improving heat transfer efficiency and enhances the reliability of cooling solutions.

TECHNOLOGY VERTICAL

Sustainable Energy and Clean Technology Hardware

TECHNOLOGY MARKET

Ultra-Efficient Data Server Cooling

MARKET SIZE

\$34.7 Billion

Total Available Market in 2027

TAM

Global available market of data center cooling with 17.1% CAGR

\$16.3 Billion

Serviceable Available Market in 2027

SAM

Global available market for room based data center cooling

\$814 Million

Share of Market in 2027

SOM

Estimated obtainable share after full market penetration



SAMAL ENERGY



www.samalenergy.com



info@samalenergy.com

THE TEAM

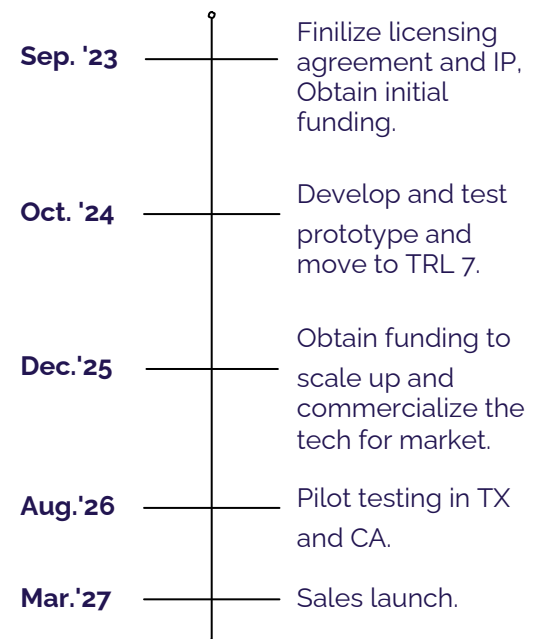


Aigul Miksa
CEO



Ricardo Jimenez
CTO

PLANNED MILESTONES





FEDTECH

We Build Ventures
Around
**Breakthrough
Technologies.**

Follow us on:



FedTech



@FedTechStartups



@FedTechStartups