LUMINATE FINALS 2020

Monday, September 14
10:30 AM-12:00 PM
Welcome to Luminate Finals 2020!

This year we are so fortunate to partner with The Optical Society (OSA) to bring our finals event to an international stage as part of the incredible Frontiers in Optics + Laser Science APS/DLS conference. This is the first time our event is being held virtually. It’s also the first time OSA is co-locating this annual conference with Quantum 2.0 and offering all sessions free to attendees online. This allows us to share the latest developments in optics, photonics, and quantum technologies not only with scientists, researchers, and academia, but with those in the general public who are interested in learning how these fields are disrupting many industries.

The Luminate NY accelerator plays a key role in this industry change by selecting and supporting startups with the optics, photonics, and imaging (OPI) enabled technologies that are destined to bring new possibilities to our world. During the event, you’ll get a glimpse at the impact that this extraordinary collection of groundbreaking technologies will have, from changing the way we address healthcare diagnosis and training, water and soil monitoring, wireless communication, energy efficiency, and more.

In January, these 10 companies traveled from their country of origin to Rochester, NY—the imaging capital of the world—with the hopes of spending the next six months accelerating their businesses. When COVID-19 hit, many were able to go back home and participate virtually to still receive the benefits of more than 35 instructional workshops, regular meetings with mentors, and our rich OPI ecosystem. By extending the accelerator by three months, they also were able to pitch their businesses to additional potential investors and partners to improve their plans for moving from early-stage ventures into budding businesses.

Today marks the graduation of each of these companies from the accelerator, and their bid for up to $2 million in follow-on funding. This includes an opportunity to vote for your “Audience Favorite,” which will provide the winning startup with $10,000. Keep in mind that, while some will receive additional funding, all will remain within Luminate’s portfolio and support system to continue their growth trajectory.

Luminate NY is just one of the creative programs within the Empire State Development’s (ESD) Finger Lakes Forward initiative, which reflects Governor Cuomo’s vision to leverage the best of what the Greater Rochester region has to offer. By bringing the most novel ideas to the region and giving these companies a place to grow, we’re supporting hundreds of growing businesses, universities, and organizations, along with the next generation of businesses that will continue to move both industry and our economy forward.

We hope that you enjoy Luminate Finals 2020. If you have an innovative OPI technology or an idea on how we can partner, we encourage you to explore Luminate, starting with our informational session which will be held immediately following today’s event.

I wish all the best to Cohort 3. I can’t wait to see what’s next for them and what more we can accomplish together through Luminate—this year and beyond!

Sincerely,
Dr. Sujatha Ramanujan
Managing Director, Luminate
Luminate is the world’s largest optics, photonics, and imaging accelerator focused on advancing next-generation OPI-enabled or enabling companies. The accelerator program accepts 10 companies per year.

Today’s event is the culmination of the six-month accelerator program, where each of the 10 companies that received $100,000 in initial funding has the chance to compete for up to $2 million in follow-on investment.

Luminate is a $25 million program funded by Empire State Development’s Finger Lakes Forward Initiative. The program is administered by NextCorps, and supported by a host of participating partners.

“There is no other place where OPI companies like ours could come together to build our businesses and put us on the road to success. We’re all much stronger than when we first arrived.”

Leslie Kimerling, CEO, Double Helix, 2018 Luminate $1,000,000 recipient

NextCorps is a nonprofit whose mission is to be a catalyst for entrepreneurship and innovation-based economic development. It does this by applying business expertise and network connections to aid in the formation and profitable growth of companies in the Rochester area and the Finger Lakes Region of Upstate New York.

NextCorps provides a suite of services, including technology commercialization for early-stage opportunities, business incubation for high-growth-potential startups, and growth services for existing manufacturing companies seeking to improve their top- and bottom-line performance.

To explore how NextCorps can help your company, contact Andrew Simon, Luminate Operations Director, at andrewsimon@nextcorps.org or (585) 214-0596.
As Cohort 3 of Luminate NY comes to a close, we are all aware of what an unusual year this has been. Despite the many challenges that have accompanied the pandemic, we are so pleased that we found a way to complete the cycle for our teams by partnering with OSA’s FiO+LS conference using a virtual platform.

When we established the vision for Luminate four years ago, we set a goal to create the world’s largest accelerator program for startups with optics, photonics, and imaging (OPI) technologies. We also planned to tap the vast ecosystem in Rochester, NY where Luminate and its program administrator, NextCorps, are based. This includes our top-ranked universities for optics, laser energetics, and imaging sciences, the more than 150 OPI companies that employ 17,000 people, the American Institute for Manufacturing Integrated Photonics, and our region’s distinction as number-one in the nation for patents per capita.

While these assets have collectively enticed nearly 500 companies to apply to the Luminate program since we began, it’s the caliber of the mentoring, partnering, and comprehensive support they get that is convincing many of them to set up aspects of their operations in Rochester. This wouldn’t be possible without a commitment from multiple organizations, companies, and individuals to work together to show the world what Rochester and the Finger Lakes can offer.

In addition to thanking OSA for its support of Luminate on an ongoing basis, this year they deserve special recognition for their outstanding partnership in making sure Luminate Finals 2020 became accessible to everyone. Thanks, too, to the Finger Lakes Regional Economic Development Council and the Finger Lakes Forward initiative—along with Empire State Development—for funding Luminate NY. Finally, my gratitude and appreciation go to the world-class team that makes every day and every opportunity in the Luminate accelerator possible: Dr. Sujatha Ramanujan, who runs the program; our advisory board and staff; the mentors; instructors; and service providers, and the countless supporters and sponsors who have opened their doors and their connections to help these OPI companies of tomorrow succeed.

When you are watching the finalists today, I’m sure you will be amazed and inspired as I am as we witness together how their businesses and visions for the future will make the world a better place for us all.

Thanks for joining us!

James Senall
President | NextCorps, Inc
Dear Friends:

Thank you for participating in the Luminate NY Finals 2020. This program is just one of the many ways New York State is executing its vision to transform the Finger Lakes region.

While known for its beauty and natural resources, the Finger Lakes also serve as a hub for innovation and economic vitality. This is particularly true for the growing optics, photonics, and imaging infrastructure that exists here, which represents a globally competitive resource for companies that are developing and bringing the latest technologies to market.

Since 2012, New York has invested more than $6.1 billion in the region’s comprehensive strategy to revitalize communities, grow employment, and enhance the economy.

Known as "Finger Lakes Forward," this strategy is allowing us to accelerate and amplify the region’s strengths to realize new economic opportunities. It’s bringing together our top talent and acclaimed resources in higher education, research, entrepreneurship, and the private sector to launch new technologies and businesses. It’s integrating next-generation capabilities into our manufacturing sector so that we can produce these emerging offerings right here in the Finger Lakes. And it’s elevating the reputation of our great state in countries around the world.

In only its third year, Luminate NY has already become a powerful spark for innovation and entrepreneurship. In addition to Cohort 1 and 2 winners setting up business operations and manufacturing in the region, last fall 100 more companies competed for a spot in the accelerator. With applicants residing in 25 different countries, it’s evident that the Finger Lakes is advancing its reputation as a global leader in optics, photonics, and imaging. It’s obvious from today’s competition that these companies want to continue to do business in New York to tap into the advantages that our rich, one-of-a-kind ecosystem can offer them.

To this year’s remarkable finalists, I wish you the best of luck and extend my sincere appreciation to everyone involved in making Luminate NY a success.

Sincerely,

ANDREW M. CUOMO

STATE OF NEW YORK
EXECUTIVE CHAMBER
ALBANY 12224

September 14, 2020
The focus of modern cataract treatment is not only to treat the cataract disease, but also to recover natural vision and to remain spectacle free. A new generation of premium intraocular lenses (IOLs) offers patients the promise of having eyesight equivalent, or even superior, to their vision before developing cataracts. However, the adoption of premium IOLs is hampered because small misalignments in these precision optical devices can cause significant vision problems. Akknatek’s Lens Reviewer system helps eye surgeons ensure safe and accurate lens positioning, thereby increasing successful premium lens implantations, improving profitability, increasing patient satisfaction, and decreasing elaborate post-operative management.

akknatek.com
**EXPRIMARY**

Sean Higgins, CEO  
USA

*High-performance, low-cost bioanalytical instruments and assay-kit consumables*

ExPrimary’s mission is to advance personalized health care by improving access to bioanalytical tools and information, thereby helping consumers identify and catch diseases at an earlier, more treatable stage. ExPrimary is developing a suite of high-performing bioanalytical instrumentation at a far more affordable price than existing products on the market. With the rise of accessibility of consumer electronics, ExPrimary has miniaturized its product and uses an iOS mobile operating system, which is expected to result in a tremendous expansion of the $30 billion bioanalytics market, making it more accessible to the masses who currently must physically visit a doctor to have testing done. During COVID-19, ExPrimary has pivoted to work on the creation of a rapid test which is affordable and can be done at home.

exprimary.com

**HAQEAN**

Hanaan Hashim, CEO, Farhan Firaq, CTO  
India

*SID-Q, on-demand quantum entropy*

Throughout the pharmaceutical industry, a multitude of challenges in drug quality, authentication, and increased counterfeit products are a continual threat to public safety, healthcare, and the economic infrastructure. Nearly one million people die each year from fake toxic drugs. Haqean, a post-quantum safe product security startup has created SID-Q to offer a solution. Haqean’s primary offering, SID-Q is an anti-counterfeiting device with an inbuilt quantum random-number generator and optical scanner providing faster, absolute secure authentication without a physical tagging process. The tagging device stores physically unclonable functions of the product and the investigator’s device helps to authenticate the product, thereby helping manufacturers and investigators to successfully combat this problem.

haqean.com
KILO MEDICAL SOLUTIONS
Joshna Seelam, CEO
USA

Brise-Solette, light regulation for premature infants in the neonatal ICU

Fifteen million premature infants are born annually and spend their first weeks in neonatal ICU (NICU) incubators. Overexposure to light and sound in the NICU can have a significant negative impact on their sleep, growth, and overall development, leading to future health issues. Kilo Medical Solutions, a pediatric medical device startup is developing innovative solutions for premature infants’ incubator needs. Kilo's Brise-Solette is an integrative, automated device that mimics the light and sound of a mother’s womb to improve the care given to preemies. The device is applied to the exterior of incubators, allowing nurses to customize the light environment based on individual needs. Additionally, Brise-Solette implements light cycling to promote circadian rhythm and acts as a visual indicator during medical emergencies to reduce response times, improve health outcomes, and shorten stays in the NICU.

kilomedicalsolutions.com

NORDETECT
Keenan Pinto, CEO
Denmark

Portable, rapid nanosensor for analyzing biochemicals

Currently, farm managers and agricultural service providers are faced with barriers to obtaining nutrient data in an affordable, understandable, and easy-to-use format to ensure impressive harvests. Nordetect, a biochemical analytics company has developed lab-on-a-chip systems for addressing these issues of optimization and traceability in the AgriFood industry. Their first product is a test for nutrients found in soil, water, and leaf samples aimed at optimizing the amount of fertilizer used to cultivate crops. By cutting down the cycle time to a matter of minutes, Nordetect empowers agronomists, extension workers, and precision farming consultants to make faster decisions that impact crop yield and input cost.

nordetect.com
Rubitect Assessment System (RAS), early bedsore detection and management tools

Bedsores are a significant healthcare problem that can lead to severe wounds, amputation, or death, but can be prevented if detected early. Current early detection is manual and unreliable. Rubitect is addressing this problem to save lives and reduce costs through accurate detection and preventative care management. Rubitect’s optical probe and mobile app provide a system to detect bedsores at an early stage when they are less complicated to treat. Compared to competitors, Rubitect is more reliable, easier to use, and lower in cost, enabling use in any care environment and providing a clear path to a $4.2 billion market.

rubitect.com

Sanoor

Dr. Boon S. Ooi, CEO
USA

Smart lighting, LiFi, IoT, and underwater optical communications

While wireless communication is utilized almost everywhere, radio waves cannot travel through water, presenting a problem for the industry of Internet of Underwater Things (IoUT). For marine industry operators and service providers seeking a low-cost, high-speed, and low latency wireless data network, the Sanoor Laser Optical Wireless Communication system is a turn-key hardware that provides easily serviceable, 100,000x faster network access than conventional acoustic systems underwater. Sanoor’s mission is to provide technical solutions for ultimate connectivity in challenging environments, especially for enabling IoUT, and utilize their expertise to help create an autonomous world.

sanoortech.com
**SIMULATED INANIMATE MODELS LLC**  
Dr. Michael Wilson, COO  
USA  

**SIM ARTS™, hands-free educational experiences**

Medical error is the third leading cause of death in the United States, and surgical education is one glaring shortcoming—training still involves inexperienced surgeons operating on live patients. SIM’s product is an immersive “flight simulator for surgery” that eliminates patient risk by enabling surgeons to practice complete procedures on lifelike anatomical models in an augmented reality environment that does not require the presence of the expert instructing surgeon. For surgical educators struggling to efficiently train surgeons, SIM’s realistic phantoms and educational software offer comprehensive, standardized education while reducing costs.

simsurgeries.com

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**SUNDENSITY**  
Dr. Nishikant Sonwalkar, CEO  
Boston, MA, USA  

**Photonic Smart Coating (PSC) technology, breakthrough glass coatings**

With the number of solar power plants in the United States growing at a rate of 30% per year, SunDensity can enhance the energy output of solar panels by 20% with their Photonic Smart Coating (PSC). PSC improves the efficiency of opto-electronic devices such as solar cells by enhancing and shaping the spectrum of photons, transforming wasted visible light into infrared light that many devices can more easily use. For utility scale solar power producers/glass manufacturing companies wanting to lower their levelized cost of energy (LCOE) to win power bids, the PSC provides increases in the panel output while decreasing the LCOE significantly, unlike AR coating.

sundensity.net
THINK OUTSIDE

Monica Vaksdal, Founder & CEO
Norway

Sknow, digital avalanche safety device

Changes in snow precipitation have a great impact on water provision, hydroelectric power supplies, agriculture, flood control, tourism, recreational activities, and emergency situation management. Due to climate change, the need for greater accuracy in snow and water information, particularly snow water equivalent measurement (SWE), has grown. SWE has been difficult to accurately measure and model over broad areas. Think Outside has created Sknow, a snow analysis system using technology from the oil and gas industry to analyze basin-wide snowpack to provide accurate, real-time, basin-wide SWE measurement, snow melt, and expected water volume data. This information results in maximized energy production, decreased spill over, greater environmental sustainability, and ultimately higher profits for hydropower companies.

thinkoutside.no

“Luminate allowed me to do something more for my business that I couldn’t do myself.”

Jason Babcock, Founder & CEO
Positive Science (cohort 1)

APPLICATIONS
are now being accepted for the next cohort.
To apply, please visit: luminate.org/apply

KEY PROGRAM DATES

2020

September Applications accepted
January 7 Application closes

2021

February 20 Semi-finalists selected; pitch for spot
April Teams begin accelerator program in Rochester or virtually
October $2 million awarded in follow-on funding with possible investment from corporate and venture partners

ADVANTAGES TO ACCELERATING WITH LUMINATE

· Exposure to the global OPI network
· Mentors matched to your needs
· Customized, structured workshops
· Growth through collaboration
· Superior financial support

FOR MORE DETAILS:
Download the Fact Sheet.
Solving problems in biophotonics, augmented and virtual reality, autonomous vehicles, machine vision, and other related fields requires specific skills—and so does starting a business. Luminate helps you do both by providing comprehensive support, including:

- A significant investment at acceptance, plus a chance to compete for up to $2 million in follow-on funding
- Access to investors, mentors, and the global OPI ecosystem for additional capital and support
- A peer-learning environment and robust curriculum to help you scale your business

Join this session to learn about the process of applying to Luminate and to get your questions answered. This session is perfect for:

- Entrepreneurs who have an OPI startup at the early-stage to Series A funding phase
- Scientists and engineers who are looking to move their technology from the lab to the market
- Teams that need resources for the design, fabrication, and manufacturing of technologies

There’s a reason why Rochester produces the most patents in OPI related technologies.
THANK YOU
FOR ATTENDING LUMINATE FINALS 2020!

More information at: luminate.org