Innovators Showcase @ UC Davis

January 9, 2020
2:00 – 7:30
UC Davis
Agilent is a leader in life sciences, diagnostics and applied chemical markets. The company provides laboratories worldwide with instruments, services, consumables, applications and expertise, enabling customers to gain the insights they seek. Agilent’s expertise and trusted collaboration give them the highest confidence in our solutions.

Agilent was created when it spun off from Hewlett-Packard Company in 1999. Since then the company has won hundreds of awards for innovations and has earned even more patents for its inventions. More important is that the number of customers we serve grows each year — another reminder of the power of our partnership.

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AGR Partners provides capital through non-controlling equity and subordinated debt to cultivate long-term growth in leading food and agribusiness companies. AGR seeks to add value by using its knowledge base, relationships and industry experience to support organic growth, acquisitions and ownership transitions. AGR Partners has invested and manages over $500 million.

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Our commitment to sustainability drives us to harness new technologies that capture the power of naturally occurring microorganisms and nutrients that enhance the soil microbiome and promote plant vigor. We develop crop inputs that deliver tangible environmental benefits as well as meaningful financial returns to our customers.

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AgStart is a non-profit incubator that accelerates the growth of innovative ag & food tech companies and strengthens the region’s innovation ecosystem. AgStart’s network-centric model offers mentorship and connections, providing access to resources that new companies need to thrive. AgStart is supported through membership fees and the generous support of our corporate and other sponsors.

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At Amaryllis Nucleics, we have developed the most efficient approach for RNA-SEQ library synthesis – helping solve a global issue in genomics. RNA sequencing is the fastest growing segment in genomics - vital for cutting-edge diagnostics, pharmaceutical development, and food security. Our technology streamlines the workflow and cuts cost and complexity of performing RNA-SEQ experiments.
Andes is building the foundations for the next big revolution that will enhance agriculture productivity globally. By combining Microbial Technology and Artificial Intelligence, Andes develops novel seeds that increase farmers’ yields for feeding a growing population, while reducing their input costs and environmental footprint.

Founded in 2016, AnimalBiome is an early-stage start-up using genomics to create new diagnostics and supplements to restore gut health in cats and dogs. A balanced gut microbiome supports overall pet health and imbalances are associated with numerous health conditions, ranging from gastrointestinal conditions such as inflammatory bowel disease and gastrointestinal lymphoma, skin conditions such as atopic dermatitis, to metabolic conditions, such as obesity and diabetes. AnimalBiome provides direct to consumer gut function test kits for dogs and cats and creates restorative supplements from material sourced directly from healthy pets to identify and correct imbalances in the gut microbiome.

A pioneer in decision agriculture, Arable Labs builds affordable tools that help people collect and synthesize site-specific agricultural data. The company’s mission is to achieve global impact by providing the measurements, insights, and predictions that enable growers to recognize and address risk. Through access to ground-truth knowledge, Arable empowers agricultural stakeholders to more effectively manage natural resources and lower food waste throughout the supply chain.
BCD Bioscience explores and catalogs the untapped world of natural carbohydrates to create selective prebiotics, synbiotics, and immunomodulatory therapies for human, animal and plant health.

BioConsortia, Inc. is developing effective microbial solutions that enhance plant phenotypes and increase crop yields. We are pioneering the use of directed selection in identifying teams of microbes - working like plant breeders and selecting plants based on targeted characteristics, then isolating the associated microbial community. Our proprietary Advanced Microbial Selection (AMS) process enriches the crop microbiome, allowing us to identify organisms that influence the expression of beneficial traits in plants. We are focused on developing products with superior efficacy, higher consistency, and breakthrough technologies in 3 key areas: biopesticides; biostimulants; and fertilizer use efficiency and nitrogen-fixation products. Our products are foliar, drench, seed treatments, liquid in-furrow and granule products for a wide range of crops.

BioLumen is a nutech (nutritional technology) company which has engineered a 100% natural structured functional fiber made from cellulose which primarily captures and prevents significant portions of sugars and starches from food to be absorbed and processed by the body - reducing the caloric intake coming from carbs; and secondarily repairs the entire human digestive system by converting those captured starches into prebiotics for the gut microbiome; resulting in people feeling better inside and out.
At Ceres Imaging, we believe the future of agriculture depends on providing farmers with the right tools—to cover more ground, make the most of their resources, and apply skill and experience where they’re needed most. That’s why we’re building farm management solutions that put farmers in control. Founder Ash Madgavkar launched Ceres Imaging as a graduate student in 2014, inspired by emerging technology in spectral imagery and galvanized by the plight of California growers navigating a severe drought. Today, Ceres Imaging is a venture-backed company delivering solutions for irrigation and nutrient management, pest and disease prevention, and more. From our headquarters in Oakland, California, we serve growers across Australia and the United States.

Computomics was founded in 2012 so our customers can reap the benefits of our machine learning algorithms. By applying AI to genetics, phenotype, microbiome, and environmental datasets, we unlock the diversity of biological life. Computomics is a team of world-leading experts in machine learning, plant research and bioinformatics. In over 130 projects, we enabled our customers to make data-driven decisions and thereby accelerate sustainable agricultural development that can feed the world. Our advanced machine learning methods enable rapid understanding of genomic data for plant breeding, agricultural, biotech, and microbiome researchers. Computomics has its headquarters in Tübingen, Germany.

Dry Chain America is a seed and food technology company based in Longmont, Colorado. Our focus is on reducing postharvest losses, improving seed viability, and creating a safer, healthier food system. We do this through expert consulting as well as the use of improved drying and storage technologies, mainly our patented Drying Beads technology that allows for proper drying, regardless of environment type. Our technologies continue to be implemented into the commercial processes of seed and food companies around the globe, while we are also actively involved in scaling the technology to create energy-efficient drying systems for large-scale commodity handlers as well.
Although agriculture is thousands of years old, growers still struggle with timing irrigation. There is no way to automatically measure the need for water or 'thirst' of a plant—until now. Based on 10+ years of research at Cornell University, FloraPulse has developed an implantable microchip that directly measures how 'thirsty' a plant is and will provide the most accurate, timely information on when/how much to irrigate. FloraPulse uses this information to give the grower scientifically-backed recommendations for managing their field to consistently maximize crop yield, quality and water savings. The irrigation mystery: solved.

At Fortiphyte we identify disease resistance traits and develop disease resistant crop varieties. This reduces the need for chemical controls such as fungicides, thereby improving the productivity, safety, and environmental sustainability of agriculture. Our platform is faster than traditional approaches and provides access to a greater diversity of resistance traits, therefore facilitating the discovery of multiple traits to confer durable disease control. We previously developed a tomato variety that is immune to the bacterial pathogens Xanthomonas, Pseudomonas and Ralstonia. Our platform is applicable to all crop species and most plant pathogens, including fungi and nematodes. We’re seeking collaborations with seed companies who are interested in adding new disease resistance traits to their elite varieties.
Deep insights into microbiome structure and function are the foundation for microbial applications in human health, agriculture, environment, and industry. Antiquated, labor-intensive methodologies currently used to cultivate microbes are a significant barrier to access microbes from microbiome samples for research and product development. The Prospector platform with its highly dense array of > 6000 nanoscale cultivation chambers is integrated with an instrument that automates the workflow enabling researchers to isolate 1000s of microbes in parallel for microbiome analysis at an unprecedented scale. Our high-throughput platform will allow scientists in industrial, academic, and government labs to understand and harness the true diversity of microbial life and open up new opportunities for microbial product development.

Hudson River Biotechnology (HRB) is a highly innovative agricultural biotech company located in Wageningen (Netherlands) focused on improving crop productivity and quality, addressing the world’s increasing demand for food and natural ingredients. We do this by genetically optimizing crops to increase yields, improve disease resistance & nutritional value. To this end, we employ the latest genetics techniques including CRISPR and our proprietary SuRE platform for unique target identification. HRB has an internal R&D pipeline for development of novel platform technologies and varieties with new traits, and actively seeks partnerships for plant breeding projects.
InnovaNutra is revolutionizing the storage and delivery of plant-based antioxidants in food. Our SuperFruit powders are enriched with a high concentration of polyphenolic antioxidants without the sugars and unpleasant taste (bitterness / sourness / astringency) associated with many fruits and vegetables. A gram of InnovaNutra’s SuperFruit powders has 100 times more antioxidants than that in a gram of the fruit itself. Our powders can be directly added to any finished food product such as juice, smoothies, oatmeal, yogurt, nutrition bars and much more. A great upside to the company’s innovations is their application in personal care and healthcare products. Currently funded by the National Science Foundation on small business grants, we are working toward taking the SuperFruit powders to market within the next couple months.

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We develop software applications for rapid food analysis using spectral imaging techniques and machine learning. Our goal is to help food producing companies quickly and confidently deliver great products to customers without a hassle.

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Intrinsyx Bio has spent the last 5 years commercializing over 3 decades of the leading academic research in the plant microbiome. The company has developed products using a groundbreaking collection of naturally occurring microbes living inside the roots, stems, and leaves of plants, fixing atmospheric Nitrogen and enhancing overall mineral nutrient acquisition. These products increase Nutrient Use Efficiency and plant stress tolerance (salt, drought) across crop types, while integrating into existing farming practices for rapid adoption. Intrinsyx Bio will launch its products in California and in the UK markets in 2020.

Inventopia is a member of the UC Davis Venture Catalyst Distributed Research Incubation and Venture Engine (DRIVE™) Program, a network of lean, thematically oriented business incubators.

Marrone Bio Innovations discovers and develops products from microorganisms isolated from samples collected from unique niches and habitats such as flowers, insects, soil and composts. Our proprietary technology enables us to isolate and screen naturally occurring microorganisms and plant extracts to identify those that may have novel, effective and safe pest management or plant health promoting characteristics. MBI has screened over 18,000 microorganisms and 350 plant extracts, leveraging its in-depth knowledge of plant and soil microbiomes enhanced by advanced molecular technologies and natural product chemistry to rapidly develop seven product lines. The focus is around finding new and alternative ways to include biological products to help meet society’s food and textile needs today without compromising future generations.
The mission of the UC Davis Microbiome Special Research Program (SRP) is to promote, grow, and transform microbiome related research and training throughout the UC Davis community. We do this through programs and projects focused on four target areas: interdisciplinary innovation, training and education, infrastructure and resources, and community building.

MyFloraDNA Inc. is an ag-biotech, born in Davis, California, offering state-of-the-art customized DNA-analyses combining molecular breeding, Next Generation Sequencing and Intelligent Computing, to all the players in the ag field. With our easy-to-use technology we can help breeders accelerate and optimize their cultivar developing processes. We also work with farmers and nurseries to help them verify the authenticity of plants purchased, produced and sold, as well as scientists who prefer to outsource routine laboratory procedures. Our innovation is to provide a unique, fast and personalized analysis, based on the latest DNA technologies, that will help our clients develop new and sustainable products.

Novozymes is the world leader in biological solutions. Together with customers, partners and the global community, we improve industrial performance while preserving the planet’s resources and helping to build better lives. We discover and develop enzymes and microbes to unlock across industries opportunities including higher production output, raw material savings, water saving, energy savings, new products, or reduced waste. Some of the industries for which we develop products are household care, food, beverage, biofuels, textiles, paper, animal feed and agriculture. Our BioAg products are currently on over 100M acres globally and expected to reach >250M acres by 2025 with markets in NA, SA, Europe and APAC; our commercial portfolio covers microbial solutions for both plant nutrition and plant protection.
NuCicer is an agricultural biotechnology company reinventing the chickpea with double the protein to enable a plant-based, sustainable future. Our focus on chickpeas comes from a desire to support a balanced diet for a diverse, growing population while also reducing the environmental impact caused by modern-day farming practices. NuCicer has cutting-edge technology to develop super-high content protein that is highly soluble, contains the full complement of essential amino acids, and combines the benefits of improved nitrogen fixation and climate resilience. In parallel, we develop superior chickpea flours that possess improved culinary properties and a range of consumer preferred sensory traits.

Phenospex is a sensor company based in the Netherlands. We develop a unique 3D-multispectral laser scanners, specifically designed to assess crops. Our products provide many plant parameters like plant growth, biomass, plant health in real time and automate many processes in plant science, breeding and agriculture where precise information on plants is required. Our sensors are also used in smart farming/ farming automation robots as the “eye” that detects and analyzes the plants.

Pheronym uses pheromones from nematodes (microscopic roundworms) to control agricultural pests. Our first product, Nemastim, significantly improves the efficacy of beneficial nematodes, which are already in the market for insect control. Nemastim makes beneficial nematodes more effective (up to 5x) by telling them to search for new insects to infect. Beneficial nematodes are treated with Nemastim and then the activated nematodes are sprayed on the field. Since we can control nematodes, our second product in the pipeline targets plant parasitic nematodes, Pherocoat, our second product, is a seed coat product that protects young plants from plant parasitic nematodes.
Managing soil fertility is important, and nitrogen is a critical nutrient in crop production, especially in corn. With synthetic nitrogen fertilizer, unpredictable weather and other environmental factors can prevent up to half of the nitrogen applied from being efficiently used by plants. Pivot Bio addresses the nutrient absorption issue through its naturally-occurring microbes that deliver nitrogen in a timely and efficient manner through biological nitrogen fixation — resulting in more productive and predictable crop yields for farmers without nutrient degradation, leaching, or runoff into waterways.

Pivot Bio offers farmers the first in-field microbial product to sustainably feed nitrogen daily to corn crops. After five years of testing in the lab, greenhouse and small plots, Pivot Bio launched its field-scale beta testing program with farmers across the Corn Belt in 2018. In 2019, Pivot Bio PROVEN™ became the first microbial nitrogen product commercially available and was planted by growers across 10 states.

PowerGut Inc was founded in September 2019 by a team of seasoned entrepreneurs in the green technology and microbiome digestive health sectors. PowerGut holds the patented technology to transform the food and beverage ingredient industry.

PowerGut technology was developed over the past 7 years by a team of researchers from several universities and at a cost of over 2 million dollars on R&D.

PowerGut technology created a polyphenol-based gut anti-inflammatory compound with unique commercialization opportunities in many consumer verticals such as food and beverage, pets and supplements industries. Clinical studies confirmed PowerGut compound outperformed commercialized over the counter drugs for digestive health without negative side effects. Recent studies also showed a strong anti-inflammatory effect for the gut.

Its plant-based highly concentrated composition makes it a unique solution for corporations looking to expand and improve product lines for health benefits.

PowerGut product is aligned with the United Nation SDG 3 due to its unique health and ecological benefits.
Rijk Zwaan is a plant breeding company. We develop new vegetable varieties and sell the seeds produced from them all over the world. We tap into the rich diversity nature offers us, and combine it with our extensive market knowledge and state-of-the-art techniques. Around 3,000 highly motivated employees in 30 different countries find it both fun and rewarding to work on creating value-added products and services for our partners every day. Three families own approximately 90% of Rijk Zwaan. The remaining 10% of the company is owned by a large group of employees through the employee share scheme. Every year, each colleague has the chance to buy share certificates and hence to participate financially in Rijk Zwaan.

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SensIT Ventures utilizes proprietary technology to develop, build and sell custom chemical sensors that provide solutions of great value to multiple industries. Because the sensors are miniaturized, inexpensive and require minimal power, they can be widely distributed and embedded in complex systems. SensIT is a member of the UC Davis Venture Catalyst DRIVE program and Inventopia with separate production and prototyping facilities headquartered in Davis, California.

UC Davis

Who We Are
We are a team of entrepreneurs and engineers dedicated to making the world a better place, one startup at a time. We partner with industry giants like Intel and LinkedIn to bring ideas to life through hackathons and seed funding. Learn more about our sponsors, faculty, and staff.

What We Do
We make, build, ideate, and network with fellow entrepreneurs at the UC Davis Student Startup Center.

Our Philosophy
We believe undergraduate students have a role in making the world a better place through innovative startups. The UC Davis Student Startup Center provides resources, programs, coursework, and networking to support students in their entrepreneurial journey.
Terragen Biotech Pty Ltd (Terragen) is an Australian agricultural biotech company. It is a developer of ag bio solutions whose core technology platform addresses soil health and productivity and animal health and nutrition without relying on chemical-based fertilisers, pesticides and antibiotics.

https://foodaghealth.solutions

The Innovation Institute for Food and Health (IIFH) at UC Davis develops systemic solutions to address global food and health challenges by connecting faculty and student researchers with investors and industry experts.

https://research.ucdavis.edu/offices/vc/

UC Davis’ Venture Catalyst facilitates the translation of University research and technology by driving the development of new ventures.
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Vibe helps seed companies to collect, analyze, visualize and report on high throughput, high resolution seed phenotype data. We provide great product and service and let our customers speak for us.

“Feel free to use myself and the Rice Experiment Station as a reference for the quality and accuracy of the Vibe. Out of the three grain analysis instruments I have experience using, the Vibe surpassed all my expectations.”

Christopher Putz
Assistant Plant Breeder, California Cooperative Rice Research Station
September 26, 2019

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Northern California’s agricultural innovation is anchored by the cutting-edge research and development at UC Davis – the nation’s premier agricultural research institution. Woodland Research Park, a proposed 350-acre project located just seven miles from UC Davis, offers the opportunity for established companies and startups focusing on agriculture innovation to expand or put down roots in Northern California’s agriculture and food science epicenter.

Planned as a thriving work/live campus with over 2 million square feet of research park office and lab space, 1,600 single and multi-family homes, parks and open space, Woodland Research Park will foster collaboration and build capacity for innovative tenants and partners seeking to be part of one of the world’s leading ag and food tech hubs.

With City approval anticipated in early 2020 and construction expected to start in 2021, companies and institutions can build Woodland Research Park into their plans for expansion now.

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