

6th Innovators Showcase @ UC Davis

In-person edition 2022 – May 12, 2022

Presenting companies



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AGR Partners provides capital 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.

Over the past eight years, AGR Partners has invested more than \$600 million to cultivate long-term growth in companies and infrastructure projects.



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Holly Ganz
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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.



Aware366

Zhongli Pan
Founder

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Aware366 is a startup company for commercializing the new wireless smart insect detection and control (IDC) technology that was developed at University of California, Davis. The IDC technology enables early detection and control of insects in food and agricultural products and reduces product loss, chemical use, food safety concerns, and management cost. It is capable of detecting insects as soon as insects emerge, which compares to the current human inspection can not catch the insects until the population of insects is large and damages have been done. Then it sends automatic notifications to facility managers for taking appropriate actions. It monitors the insect activities and environmental conditions in the products, providing scientific data for prediction of insect occurrences and better management. The information can be stored locally and in cloud and accessed through mobile apps. The IDC technology replaces the human inspection methods currently used. The IDC devices have been used in warehouses and processing facilities of rice, almonds and walnuts in California. <https://www.youtube.com/watch?v=FTkmiTd91qM>



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Beeflow increases yields for growers by providing science-based pollination programs via proprietary bee nutrition and training technology as well as strategic hive placement and expertise to increase crop yield and revenues with less environmental impact.

BioConsortia

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.

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BOOST BIOMES

Replacing chemicals with biological solutions to address the needs of a growing population is essential for a sustainable future. At Boost Biomes we believe that natural microbes delivered as synergistic consortia are the solution. We have built the world's only microbial ecology platform to identify consortia with consistent performance across diverse environments to create field-validated, game-changing products that food and ag customers truly value.

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California CULTURED

California Cultured was founded in 2020 to tackle the chocolate crisis. Pound for pound, Chocolate is responsible for more deforestation than palm oil and is second only to beef. There are somewhere between 1-1.5M child laborers harvesting Cacao in West Africa. We are developing technology to mass produce chocolate with a unique cell culturing process.

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ClimateAi seeks to build a more sustainable, climate-proof, and profitable global food and ag system by leveraging AI and innovative climate forecasting technologies to deliver actionable insights to agribusinesses and farmers, enabling them to mitigate climate risk and identify opportunities, 1 day - 40 years out. Precise, accurate, data-driven climate resilience.



Jonathan Yuan Cheng
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Digestiva is a company focused on improving the nutritional efficiency of protein utilization. With a proprietary class of enzymes able to increase the absorption of amino acids critical to muscle growth, the potential to improve the health of those with diminished digestive capacity, such as the elderly and infirm, is exciting. As world population grows, more efficient utilization of protein will become ever more important to sustaining life on earth. Digestiva has a solution that is cost effective and unique.



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Dinies is a German-based food safety company specializing in the use of UVC disinfection for a wide range of seed to feed applications. In this forum we will discuss the Naiopur Seed Disinfection series. Naiopur was designed specifically for efficient and cost-efficient surface disinfection of seeds, grains, herbs, spices, etc. A disinfection rate of up to 99.9% was confirmed by third-party German laboratories. Thanks to an innovative transport technology, the bulk goods are exposed continuously to UVC light. The UVC light is a natural component of sunlight, with the important germicidal effect. In this natural process, the DNA of the microorganisms is changed so that reproduction of the bacteria is no longer possible. The gentle and natural process reduces germs by up to 99.9%. Now fully supported in the US by Dinies North America.



Pauline Canteneur
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FarmWise builds innovative systems and processes that allow farmers to streamline operations and increase food production efficiency.



Michael Santiago
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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.



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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.

GreenVenus

Accelerating the Green Revolution™

Accelerating the Green Revolution
With next-generation plant propagation, speed breeding, and technologies for hybridization of crops, GreenVenus is improving the quality of food for consumers while reducing food waste and preserving valuable natural resources.

Arianne Tremblay
Senior Scientist

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INTRINSYX BIO

Intrinsyx Bio is commercializing 3 decades of the leading academic research in the plant microbiome. Our endophytic microbes live throughout the roots and shoots of plants, allowing a broad range of crops to fix atmospheric nitrogen into ammonia and enhancing overall nutrient use efficiency. We are first commercializing these naturally occurring microbes as seed treatments in cereals and oilseed, with a pipeline targeting other crops (broad acre, specialty, turf, forestry) and other product formulations (including foliar, in furrow, granular).

Ahsan Ali
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MATRUBIALS

Matrubials Inc. is developing milk-derived therapeutics to address infectious diseases, starting with women's health. Recurrent bacterial vaginosis and subsequent repeat urinary tract and yeast infections and reproductive issues remain unresolved for ~1 bn women globally because existing antibiotics are either resistant to or are non-selective and alter the healthy microbiome. Milk-inspired antimicrobial peptides in Matrubials' portfolio can be scaled in a lab and developed into topical applications to reduce this burden, and additional infections using an AI-enabled platform for candidate expansion. A recent winner of [an innovation award](#), Matrubials is a spin-out from the UC Davis Foods for Health Institute and is currently raising a seed round of \$1.5M (backed by Y Combinator) for milestone-driven preclinical and in vivo efficacy and safety enabling studies.

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Angel Fernandez
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MyFloraDNA Inc. is an ag-biotech company, 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.

Norfolk Healthy Produce

Nathan Pumplin
President
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We are passionate about meeting consumer demands for fresh, healthy food, starting with a nutritious, great tasting, convenient, and beautiful purple tomato. Our founders at Norfolk Plant Sciences were inspired to share their world-class understanding of tomato genetics with the world. The first outcome is a superfood purple-fleshed tomato, with similar levels of purple antioxidants as blueberries. These tomatoes also have 2x longer shelf life, helping to reduce food waste and improve sustainability. Norfolk Healthy Produce is developing purple tomato varieties and marketing premium tomato products to consumers.



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Pairwise is a pioneering food start-up committed to helping people live healthier, fuller lives. We're leading the way to wellness by combining gene-editing capabilities, deep crop science expertise and cutting-edge data techniques to cultivate fruits and vegetables that are naturally irresistible and easier to enjoy. We believe in the power of produce to change our world. Because when tough leafy greens are easier to eat, more people get calcium and magnesium and Vitamin K. When raspberries and blackberries lose their seeds, they become more appealing and more likely to end up in a lunch box or smoothie. And when cherries come without the pits, well, everybody wins. Pairwise is taking fruits and vegetables to the top of the food pyramid by bringing out the best in nature—and nurturing the world we live in.

PHENOSPEx
Smart Plant Analysis

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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.





Fatma Kaplan
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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.



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Plant-DiTech's PlantArray is a novel high-throughput, fully automated, plant physiology-based phenotyping platform which measures constantly, simultaneously and in real-time a plant's dynamic response in its environment. The PlantArray system was designed to overcome the challenges of performing a comparative, multilevel, multifactorial physiological experiment such as a plant's response to abiotic and biotic stress treatments and in particular the response to water availability limitations in the soil-plant-atmosphere continuum. The PlantArray platform accelerates phenotyping processes for biologists, plant, tree, and crop scientists, and shortens agricultural product research, breeding and Ag R&D development by 2-3 years and increases the quality of selection. PlantArray's unique technology performs direct physiological, quantitative, yield-related traits measurements for plant genetic varieties and chemicals and biologicals screening on plants under abiotic and biotic stresses. Transpiration, daily biomass gain, canopy stomatal conductance, root water uptake and water-use efficiency are among the parameters measured by our platform. In addition, PlantArray allows for precise and repeatable experimental setup, including for abiotic stresses like drought and flood, and has an unmatched capacity for the number of treatments that can be executed in one single experiment. Our platform is highly modular in the number of units as well as add-on capabilities for sensors and additional measurements. Data are provided statistically analyzed in real time.



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QualySense AG is a world pioneer in advanced robotics and sensing solutions to reduce seed waste and automatize quality inspection of seeds, grains and beans.



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Seed-X enables sustainable food security through accurate real-time classification of a wide range of attributes at the single seed and grain level using a powerful combination of AI, deep learning, machine vision and innovative morphological analysis.



Max Vo

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Plant Sciences Researcher at UC Davis

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AggieCulture represents UC Davis in the world semifinals of Wageningen University's [Urban Greenhouse Challenge #3](#): Social Impact Edition to address food apartheid in Ward 7, Washington DC and propose a global solution protocol. Our food system Living Gardens embodies a plant growing in symbiotic harmony with its ecosystem, stretching its roots and reaching its branches to meet the community's needs. Designed for versatility - this triple bottom line growth model enables people, process, and technology to unite and express their own phenotype that meets specific pain points in a way that is sustainable, inclusive, and actionable. Living Gardens promotes leaders to aim beyond food security and cultivate health sovereignty.



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Unfold is accelerating the “seed to table” capabilities of vertical farming with an integrated offering of superior seeds, digital services, and agronomic insight. Based in Davis, California, Unfold’s mission is to create a world where the freshest, most nutritious, and most delicious produce is available to every person on the planet. For additional information about Unfold or to hear about potential career opportunities, please visit our website at <https://unfold.ag/>.



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UniBaio develops nano-vehicles based on natural compounds and circular economy to improve agro-inputs performance. Our particles encapsulate the active principles of pesticides to release them over time. This allows to increase their effectiveness and reduce their application doses, therefore, it decrease the toxicity levels of soil & the food we consume.

Next page: Incubators in the greater Davis area

Incubators in the greater Davis area



The Lab@AgStart



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AgStart is a program of AgTech Innovation Alliance, a registered 501(c)(3) non-profit public benefit corporation based in Woodland, California, focused on advancing innovation in Ag | Food | Health. The AgStart program has been active in the Sacramento region since 2012, when it was launched through a collaboration that included the University of California Davis, supporting hundreds of ag- and food-tech startup companies through a combination of mentorship, education, and co-working services in its downtown Woodland incubator. In 2021, AgStart launched The Lab@AgStart, our region's largest shared-use wet-lab facility for startup companies, featuring a fully-equipped shared wet-chemistry laboratory as well as a certified kitchen space for food innovators. In 2022, AgStart will launch an expansion of its Lab@AgStart facility, nearly doubling its capacity and adding dedicated fermentation and tissue culture facilities. Innovators interested in The Lab@AgStart facilities can learn more and contact AgStart through their website at www.agstart.org.



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LifeSpace Labs is a life science organization whose goal is to provide a community of lab spaces and resources for innovators at the start-up phase of their business. Spaces will comprise of incubation, wet lab, private lab pods, and suites for members. LifeSpace Labs will be a first of its kind facility in the

Sacramento Region to offer incubation and startup life science space together in community format. The members can advance their programs from day one of incubation through the startup stage, all within LifeSpace Labs. The co-working wet lab space will be fully equipped with communal lab equipment, fume hoods, Biosafety cabinets (BSC) and cold storage space. The private lab space will range from 500 to 1,000 square feet with access to communal cold storage and lab equipment. Aside from co-working lab space, LifeSpace Labs will offer an office co-working environment to further bring diversification into the space. LifeSpace Labs members and non-members will benefit from resources such as lab equipment training, mentorship, networking, fund raising opportunities with local investors, research partnership with local companies, financial modeling, operations cost savings and many more. Entrepreneurs and innovators interested in the LifeSpace Labs memberships can reach out to dlad@lifesplabs.com.



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The UC Davis-HM.CLAUSE Life Science Innovation Center is a business incubator designed to support innovation driven entrepreneurship. We are proud of our collaboration with UC Davis in providing this resource supporting startups working to transition technologies out of the lab and generating early-stage, commercialization milestones. We look forward to fostering disruptive ideas, inspiring synergies, and strengthening the region's innovation ecosystem.
