

**UCLA TECHNOLOGY DEVELOPMENT GROUP** 

INNOVATION MAGAZINE

SUMMER 2022 VOLUME 9





# INNOVATION MAGAZINE

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SUMMER 2022 | VOLUME 9

TDG.UCLA.EDU

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#### Dear Readers,

This past Spring, UCLA TDG held its two annual conferences in-person and we were happy to see everyone. There are recaps for both the UCLA MedTech Partnering Conference and Los Angeles Bioscience Ecosystem Summit (LABEST) that featured the latest research from UCLA scientists as well as our partners in the LA Region. As recognition to our continued support of the LA ecosystem, UCLA TDG was honored to receive a Certificate of Recognition from Mayor Garcetti's office.

We celebrate many achievements in our UCLA community including the winners of the Pearl Cohen scientific poster awards. In addition, twenty-four scientists received Innovation Fund Awards from UCLA Innovation Fund that will help bridge the gap between their early-stage invention and shape them to a financial opportunity. Just recently, the 2022 Innovation Fellows cohort featuring six projects from UCLA PhDs and faculty graduated from the program managed by our collaborators from Startup UCLA.

In this edition, we highlight technology on concrete manufacturing, microbiome therapies and the use of estriol for brain fog. We are happy to announce new TDC Board Members Gay Crooks and Craig Ehrlich and several new TDG staff. We welcome all to the team.

Finally, earlier this year, we lost our dear friend and colleague, Brian Roe who was the Director of Sponsored Research and Material Transfer. Brian had many achievements on campus and is missed by everyone who knew him. We send condolences to his family and the community that knew him.

Sincerely,

**Amir Naiberg** Associate Vice Chancellor, CEO & President UCLA Technology Development Group

# A message from AMIR NAIBERG

## MEDTECH PARTNERING CONFERENCE

### UCLA's Annual Medtech Partnering Conference Back (in person!) By Dina Lozofsky

**ONE OF MY BIGGEST TAKE-AWAYS** from this year's MedTech partnering conference was the very clear difference it made to meet in person. We've all been saying that we have been fine working remotely and we did make it all work, but there is nothing like the energy and value generated by a meeting that allows us to engage with a large number of our colleagues live and in person.

One lesson we did learn very well from the pandemic is that we can indeed effectively bring in a keynote speaker virtually when needed! Lisa Suennen, Venture Valkyrie LLC, brought us a great overview of the state of the digital health industry, which covered both the good and the bad in the industry. There is significant funding going into these products, but startups must prove clinical AND economic outcomes, which has been hard to do, and true ROI seems to remain elusive. There is a lot more you can learn from the presentation. See the video here.



"Show me the data!" – a core theme from our Sportstech panel, which brought together doctors from BOTH UCLA and USC, a performance scientist from the LA Clippers, and was expertly moderated by Kwame Ulmer, MedTech Impact Partners. It was clear that collecting accurate, actionable data for both performance enhancement and diagnosis is very important to this industry sector and that the democratization of data is empowering for everyone from the elite athlete to the patients everywhere.



Sports Industry Panel

Our investor panel this year included three corporate VCs who are actively investing in medtech. Best advice from the panel:

- "If you don't have competition, maybe you don't have a market." – Arnaud Autret, M Ventures
- "Use of NDAs when pitching is much more acceptable to strategic investors, but don't expect them to sign your template" - Amy Belt Raimundo, Convey Capital
- "I'd rather know about an opportunity too early than too late" – Tamir Meiri, J&J Innovation



Strategic Investor Panel

Meanwhile, in the demo track room, our expert panel of judges enjoyed a series of medical device demonstrations, offered helpful suggestions and gave our audience a glimpse into future trends in our industry. But, I think one of our favorite moments of the day was the Presentation of the Big Check to the demo track winner.



Dina Lozofsky, UCLA TDG and Paul Grand. Medtech Innovator

This was the second year that we partnered with BioscienceLA, MedTech Innovator, and a whole host of other ecosystem partners to support #LAMedTechWeek, which gave our audiences a great overview of the fantastic innovation occurring around the greater LA area, which are poised to help patients for years to come.

## MEDTEC PARTNERING CONFERENCE



Winner of the Demo Track Competition

We're starting planning for next year's UCLA MedTech Partnering conference, save the date February 28, 2022. And we will be partnering again to bring you the third annual LA MedTech Week, Mon 2/27 - Wed 3/1/2023! If you are interested in partnering, sponsoring or participating, please contact me at dina.lozofsky@tdq.ucla.edu.

### **TACKLING A CONCRETE JUNGLE**

#### **APPROXIMATELY 4.2 BT OF CEMENT** is used in the world each year with 110MT being used in the United States. Concrete is made from cement, water, sand and gravel and concrete is everywhere. In fact, it is the number one material used in construction and US concrete production exceeds 600 MT per year.\* But the problem is global concrete production creates close to 10% of worldwide carbon emissions.

Mathieu Bauchy, associate professor and Gaurav Sant, professor at UCLA Samueli School of Engineering, set out to tackle the problem of carbon emissions generated by the concrete industry. The goal is to reduce emissions with less mixing inefficiency and more applied accuracy.

What does it take to make concrete? Some sand, some water and some mixing. It seems simple and low tech but there are other factors to consider such as water/ cement ratio, quality of material, temperature and humidity. The process is actually complex. The industry itself as well as other outside companies have tried to improve the development of concrete but it seems that potential solutions have come up short.

Bauchy comments, "Gaurav is a third-generation civil engineer who has a first-hand, practical knowledge of the concrete industry, whereas, having been trained as a physicist, I tend to look at concrete from a different viewpoint than traditional civil engineers. This made us realize that, as a team, we offer a unique combination of experience and technical skills to develop a disruptive solution that offers a "concrete" and applicable solution to the challenges facing the concrete industry."

The startup company, Concrete AI, licensed Bauchy and Sant's work from UCLA. The SaaS or software as a service company will provide software that uses two key factors to improve efficiency in concrete production. First, with the use of machine learning models, it predicts the performance of concrete based on constituent materials and avoids the "trial and error" approach that can waste time. Second is the use of artificial intelligence (AI) to look at hundreds of thousands of different combinations

## **concrete**.ai

that will provide the optimum mix design that provides the best performance with the lowest cost and carbon footprint. The AI is able to analyze the volume of combinations faster than humans, and this also saves time and increases efficiency.



There are many segments of the concrete market, and with demand rising there are projections for strong growth. For example, the global ready mix concrete industry generated approximately US\$378B in 2020 with the US accounting for 12.3% or \$46B. The expected growth in this segment is 7.2% over the next 5 - 7 years<sup>\*\*</sup>. Bauchy and Sant's decision to create efficiency and sustainability in this area could not have come at a better time for both the market growth and more so the betterment of the planet. The UCLA researchers continue to tackle the problem of carbon emissions in the concrete industry and the construction industry.

\*Source: WCA and NRMCA \*\*Source: Globenewswire

### **FIGHTING BRAIN FOG IN MENOPAUSAL WOMEN**

#### **APPROXIMATELY 60% OF MENOPAUSAL WOMEN**

experience cognitive difficulties known as brain fog. Now the company CleopatraRX has licensed tech from UCLA to tackle this problem.

Estriol is a natural hormone in women that spikes during pregnancy. Dr. Rhonda Voskuhl, Professor of Neurology at the University of California, Los Angeles (UCLA), the Jack H. Skirball Chair, and the Director of the UCLA Multiple Sclerosis (MS) Program, has researched the use of estriol in MS patients. Voskuhl noted that MS patients who became pregnant were significantly protected from MS relapses. In addition, estriol treatment helped prevent cognitive decline.

Voskuhl wanted to apply the use of estriol to address the cognitive issues that happened during menopause for all women not just MS patients. She hypothesized that if the hormone estriol could be given to menopausal women it could help prevent cognitive decline, aka brain fog. Through pre-clinical studies, the results were positive.

<u>CleopatraRX</u> has created a standardized system to use estriol for the prevention of brain fog. Using the specialized "PearlPAK" packaging, patients take a customized form of estriol once in the morning and progesterone once at night. Through the CleopatraRX website, the patient works with a care coordinator and telemedicine consultation to adjust doses if needed and tailor a treatment plan.





Dr. Rhonda Voskuhl

Photo: UCLA

Voskuhl said that the data collected from CleopatraRX would take about two years to gather and analyze. After the initial period, she hopes the information can be presented to the FDA.

"The use of estriol is a low-cost solution to address the unmet medical need of brain fog," said Voskuhl. "Currently, various types and doses of estrogens are prescribed to menopausal women, which are not designed to improve cognition and do not have standardized monitoring of results. Once data is collected that validates its use, we can move forward to receive official approval from the FDA."

In 2020, CleopatraRX licensed the estriol-related intellectual property from the UCLA Technology Development Group, which includes packaging design and methods to treat and prevent cognitive decline with estriol in menopausal women. The product hits the market in Summer 2022.

> Specialized "PearlPAK" packaging oto provided by CleopatraX



## LABEST 2022 RECAP

### LABEST 2022 RECAP

IN FOUR YEARS, the Los Angeles Bioscience Ecosystem Summit (LABEST) event has become THE PREMIER SHOW-CASE FOR BIOSCIENCE INNOVATION in Los Angeles County with attendance by key stakeholders in the Los Angeles area, including UCLA, Caltech, Cedars-Sinai, City of Hope, The Lundquist Institute and USC. The event's mission is to promote Los Angeles as a center of excellence for biotech innovation and to foster partnerships between academic institutions, life science incubators, the investment community and the biopharma industry. Leading bioscience translational research programs, faculty entrepreneurs and start-ups are showcased where Los Angeles institutions have expertise, pioneering multi-disciplinary research and significant resource commitments directed towards developing novel therapies. LABEST 2022 was the fourth event that UCLA



Enjoying the reception on the terrace

Technology Development Group (TDG) organized and hosted at the UCLA Meyer and Renee Luskin Conference Center on May 25th and 26th 2022. The event featured the launch of three new programs: UCLA Research Theme Interactive Showcases, the Nucleate | UCLA Postdoc Association Program for Life Science Entrepreneurs, and Los Angeles Incubator Showcase organized by The Lundquist Institute and sponsored by SMBC. LABEST 2022 was a



Emcee Judy Fortin and Chancellor Gene Block (middle) pose with LABEST Attendees

sold-out event with registration of 1,091, which included over 500 from UCLA, close to 200 from the biopharma industry and over 100 start-ups from the Los Angeles region. The LABEST 2022 promotional video received 11,000+ views online, and a total of 112 outlets picked up the LABEST 2022 press release.



Friends from USC

#### VIEW LABEST ONLINE

The LABEST keynote address, opening remarks and panels were recorded and are available for viewing on the <u>UCLA TDG YouTube</u> <u>Channel</u>. All of the UCLA and Partner Institution Professor Spotlights can be viewed on the <u>UCLA TDG</u> <u>website</u>.

#### SOME EVENT HIGHLIGHTS INCLUDED:

- Amir Naiberg and Mark Wisniewski were presented with a Certificate of Recognition for LABEST 2022 by Vishesh Anand on behalf of Los Angeles Mayor Eric Garcetti.
- Andrei Iancu, Former Under Secretary of Commerce for Intellectual Property; Director of the USPTO; Partner, Irell & Manella LLP; and Chairman-Elect, UCLA Technology Development Corporation, delivered an impactful Keynote Address: "From The University To The Market: Why IP Saves Patients' Lives". Excerpts will be included in a future issue of U Magazine (uclahealth.org/u-magazine), the flagship publication of UCLA Health and the David Geffen School of Medicine at UCLA. U Magazine distributes to about 85,000 readers, including alumni of the school of medicine; faculty and UCLA Health leadership; donors; civic leaders; members of the media; local, state and federal legislators; and a host of other "friends" of the institution.
- UCLA's eight Unified Research Themes organized interactive sessions to showcase research programs, translational faculty, successful biopharma collaborations and start-ups. The majority of these showcases were fully attended and at most times were standing room only.
- The Incubator Showcase featured 18 start-up presentations from six Los Angeles life science incubators, and Stephanie Hsieh, Executive Director of the Los Angeles office of Biocom California, moderated the panel "Winning the LA Space Race: Finding the Ideal Place to Grow."



 Nucleate | UCLA PDA Program for Life Science Entrepreneurs a custom educational track designed especially for Post Docs and Graduate Students featured seven student teams who pitched their business plans and participated in workshops for budding life science entrepreneurs.

LABEST 2022 Online Program





Principal Investigators pose with their recognition awards All Photos: Heromade

- 24 Professor Spotlights presentations were featured live on the main stage from UCLA, Caltech, Cedars-Sinai, City of Hope, and USC.
- During the LABEST 2022 closing reception, a Professor Spotlight Recognition Ceremony was held and recognition plaques were presented to the 70+ Professor Spotlights from over the previous four years.
- During the LABEST 2022 closing reception, a Fireside Chat with Drs. Owen Witte and Michael Jung focused on the important roles of basic research programs and the protection of intellectual property for faculty interested in pursuing translational research and entrepreneurial endeavors.

### **SAVE THE DATE**

for LABEST 2023 at the UCLA Meyer and Renee Luskin Conference Center and mark your calendars for May 24th and 25th 2023!

### LABEST 2022 RECEIVES CERTIFICATE FROM MAYOR'S OFFICE

### **UCLA LABEST 2022 PEARL COHEN POSTER AWARDS**





UCLA TDG Vishesh Anand, City of LA presents a Certificate of Recognition to Amir Naiberg CEO and Mark Wisniewski, Senior Director, UCLA TDG

ON THURSDAY, MAY 26 at TDG's LABEST 2022 event, Vishesh Anand, West Area Representative at Mayor Eric Garcetti's Office for the City of Los Angeles, and UCLA Alum '17, presented UCLA TDG with a Certificate of Recognition for putting on an amazing event and for highlighting some of the trailblazing research and amazing startups from the Los Angeles area. "This is

"This is what LA is about. We're going to move our City and our LA County as a whole together with amazing, tremendous people like you. So thank you for hosting this." - Vishesh Anand

what LA is about. We're going to move our City and our LA County as a whole together with amazing, tremendous people like you. So thank you for hosting this."





UCLA LABEST 2022 Pearl Cohen Poster Awards Competition

#### THE UCLA LABEST 2022 PEARL COHEN POSTER AWARDS

**COMPETITION** had an immensely successful run this year. We received 100+ posters from five institutions (UCLA, USC Keck School of Medicine, Caltech, Cedar-Sinai, and City of Hope) categorized into six different therapeutic categories: Cancer, Cardio-metabolism, I3T, Neuroscience, Precision Health, and Regenerative Medicine. Poster winners received \$250 – \$750 cash prizes and complimentary admission to

Photo Credit: Heromade Mark Cohen, Senior Partner & Chair, Life Sciences Practice Group, Pearl Cohen Zedek Latzer Baratz flanked by Winners of the

LABEST 2022. They had a unique opportunity to showcase their bioscience research to pharma and biotech industry leaders' entrepreneurs and investors, and at tend the networking reception. Heartiest Congratulations to all the LABEST 2022 Pearl Cohen Poster Award winners. On behalf of the entire LABEST team at UCLA, we wish all our poster awardees' unlimited success in the future.

### UCLA LABEST 2022 PEARL COHEN **POSTER AWARD WINNERS**

View Posters Here and Scroll Down to "Poster Groups"

### **CONGRATULATIONS!**

#### CANCER

#### **1st Place:**



Brian Orcutt-Jahans Aaron Meyer Lab, UCLA Multivalency enhances the specificity of Fc-cytokine fusions (UCLA – 69)

#### 2nd Place:



Gabriela Escalante Javier Ogembo Lab, USC A multivalent vaccine to elicit potent humoral immune responses to Epstein-Barr virus infection and its associated cancers (UCLA – 30)

Mahsa Pahlavan Reginald Hill Lab, USC Investigating the Effect of ECM Stiffness in a 3D Biomimetic Liver Metastatic Niche Model for Pancreatic Cancer (UCLA – 46)

Yi-Te Lee Hsian-Rong Tseng Lab, UCLA An Extracellular Vesicle Surface Protein Assay for Early Detection of Hepatocellular Carcinoma

(UCLA - 100)

#### **CARDIO-METABOLISM**

#### **1st Place:**



Alexandra Demcsak Miklost Sahin-Toth Lab, UCLA Preclinical mouse model of trypsindependent pancreatitis (UCLA – 16)

#### 2nd Place:



Sean Atamdede Carla Koehler Lab, UCLA A Role for SLC25A46 in Mediating MitochondZrial Dynamics (UCLA – 61)

#### **IMMUNOLOGY, INFLAMMATION, INFECTION, AND TRANSPLANTATION (I3T)**

#### 1st Place:



Yan-Ruide Li Lili Yang Lab, UCLA Development of off-the-shelf hematopoietic stem cell-engineered invariant natural killer T cells for COVID-19 therapeutic intervention

(UCLA – 5)

#### **NEUROSCIENCE**

#### **1st Place:**



Yi Xiao Jiang David Eisenberg Lab, UCLA Amyloid fibrils in disease FTLD-TDP are composed of TMEM106B, rather than TDP-43 (UCLA – 6)

#### **PRECISION HEALTH**

#### **1st Place:**



Lei Peng Michael Bonaguidi Lab, USC

Rejuvenation of neural stem cell function and cognition through single-cell pharmacotranscriptomics with ROOT (UCLA – 53)

#### **REGENERATIVE MEDICINE**

#### **1st Place:**



#### Ekatrina Mokhonova Rachelle Crosbie Lab, UCLA Small molecules stabilizing cell membrane for treatment of Duchenne Muscular

### Dystrophy (UCLA – 74)

#### 2nd Place:



#### Antonina Nazarova Seva Katritch Lab, USC

V-SYNTHES 2.0 – A New Approach for the Screening Giga-Scale Space in Computer-aided Drug Design and Its Usefulness in Finding Novel Therapeutics Against Acute Respiratory Distress Syndrome Caused by COVID-19 (UCLA – 65)

#### 2nd Place:



#### Joselyn Soto Baljit Khakh Lab, UCLA Identifying astrocyte and neuron plasma membrane proteins in vivo (UCLA – 26)

#### 2nd Place:



#### Luda Lin Alice Soragni Lab, UCLA Bioprinting of 3D Organoid Models

Recapitulating Complex Tissue Architectures in Multi-well Plates (UCLA – 62)

#### 2nd Place:



#### Mari Amirbekyan Margarita Gutova Lab, COH

Biodistribution of L-myc Immortalized Human Stem Cells from Olfactory Bulb to TBI sites in a Rat Model of Controlled Cortical Impact Injury (UCLA – 37)

## **UCLA INNOVATION FUND 2021 WINNERS**

### 24 scientists and researchers receive awards from Technology Development Group

TWENTY-FOUR RESEARCHERS at UCLA have been named recipients of awards from the 2021 UCLA Innovation Fund Biomedical Competition.

These awards, up to \$150,000 per project, support early stage research that lead to commercialization activities, which usually aren't supported by basic research grants. As a result, researchers can develop their technologies to a point where the chances of success are greatly increased. All awarded projects receive consultations from an outside industry and investor adviser panel, which provides technical and commercial feedback that is key to technology development.

The UCLA Innovation Fund was established in 2016 by the UCLA Technology Development Group, in conjunction with the David Geffen School of Medicine at UCLA, UCLA College's divisions of physical sciences and life sciences, the UCLA Samueli School of Engineering, the UCLA School of Dentistry and UCLA Health.

The applicants' projects were evaluated on their novelty, significance and potential public benefit, as well as the status of the intellectual property and other factors relating to the projects' technical feasibility and commercial potential.

The two tracks in the 2021 cycle were therapeutics and medical technology.

The award recipients for the therapeutics track:

Peter Clark, assistant professor of molecular and medical pharmacology; Robert Damoiseaux, professor of molecular and medical pharmacology; Dr. Richard Finn, professor of medicine in the division of hematology/ oncology; Harvey Herschman, distinguished research professor, molecular and medical pharmacology; and Varghese John, professor of neurology and the principal investigator at the Drug Discovery Lab at UCLA were recognized for their work developing a metabolic inhibitor to treat hepatocellular carcinoma.

- Arpana Gupta, adjunct assistant professor in the division of digestive diseases; Dr. Tien Dong; assistant clinical professor of medicine; Dr. Jonathan Jacobs assistant professor-in-residence in the division of digestive diseases; and Dr. Emeran Mayer, professor of medicine, physiology and psychiatry were awarded funding for their treatment fighting obesity and food addiction by harnessing the brain-gut axis.
- Dr. Dinesh Rao, associate professor, pathology and laboratory medicine; Robert Damoiseaux, professor of molecular and medical pharmacology; and Neil Garg, distinguished professor in chemistry and biochemistry, received funds for their small molecule approach targeting RNA binding proteins in cancer cells.

The award recipients for the medical technology track:

- The team lead by Dr. Renea Sturm, pediatric urologist and assistant professor of urology, joined by George Aninwene II, Peyton Tebon and Ali Khademhosseini, former professor of bioengineering, invented a novel device for urologic tissue repair.
- R. Michael van Dam and his team of Jason Jones and Ksenia Lisova developed a device which allows for on-demand manufacture of radiopharmaceuticals.
- The team of Glen Meyerowitz, Dr. Igor Barjaktarevic, Dr. Obi Emeruwa and Onike Williams invented a novel device which allows customized ventilation of each lung for patients with acute lung injury.
- Jeff Chiang, assistant adjunct professor and leader of the computational medicine technology core worked with Dr. Srinivas Sadda to advance a diagnostic which detects macular degeneration in its early stages while intervention is still possible.

**Read Newsroom Article Here** 

## **UCLA INNOVATION FUND** 2021 WINNERS Continued

### MedTech Track 2021 Winners





IGOR BARJAKTAREVIC

JASON JONES





KSENIA LISOVA **ONIKE WILLIAMS** 

**PEYTON TEBON** 

### **Therapeutics Track 2021 Winners**





HARVEY HERSCHMAN **ARPANA GUPTA** ROBERT DAMOISEAUX







TIEN DONG









JEFF CHIANG



**SRINIVAS SADDA** 



GEORGE **ANINWENE II** 





**OBI EMERUWA** 



**RENEA STURM** 



MICHAEL VAN DAM





**DINESH RAO** 



**NEIL GARG** 



JONATHAN JACOBS



PETER CLARK



**RICHARD FINN** 



ALI KHADEMHOSSEINI

### STARBURST EVENTS

### SCALE

#### SCALE Demo Day

SCALE is an aerospace accelerator for pre-seed and seed stage companies, a 13 week program that serves as a platform for entrepreneurs to launch and scale their businesses. The program is composed of lectures, workshops, pitch practice sessions, networking opportunities, and special events culminating with a Demo Day.

Status: In-person only Date: July 28th, 2022 Register here today!



#### Care in Space Pitch Challenge

Care in Space is the first of its kind program leveraging the extreme conditions of space to not only drive innovation but also to build viable businesses at the intersection of commercial space and biomedical science. A collaborative effort between Boryung, Axiom Space, and Starburst Aerospace, the challenge will provide winning entrepreneurs and their startups an equity investment of \$100,000 and admission into Starburst's 13-week accelerator program to help bring their ideas to fruition.

Status: Hybrid Date: August 4th, 2022 Register here to attend in-person or virtually!



#### NASA Minority Serving Institutions Space Accelerator Demo Day

NASA MSI Space Accelerator is an inaugural NASA innovation program that brings together diverse scholars to advance the agency's goals for improving its future science missions. The program is run in partnership between the Agency's Science Mission Directorate (SMD), its Minority University Research Education Project (MUREP), the Jet Propulsion Laboratory (JPL), and Starburst.

Status: Hybrid Date: August 17th, 2022 <u>Register here to attend in-person</u> or virtually!



## INNOVATION FELLOWS 2022 COHORT

**ABOUT:** UCLA's Innovation Fellows is a campus-wide program aimed at advancing entrepreneurial excellence and starup culture among faculty and postdocs.

#### ABioME

ABioME has developed a clinically validated probiotic to treat food addiction and obesity.

Arpana "Annie" Gupta, Associate Professor, Director, Neuroimaging Core, UCLA Microbiome Center, Vatche and Tamar Manoukian Division of Digestive Diseases

**<u>Tien Dong</u>**, Assistant Professor, Director of Bio Repository Core, UCLA Microbiome Center, Vatche and Tamar Manoukian Division of Digestive Diseases

#### Trusetics

Trusetics is leveraging AI and Synthetic Data to create dynamically updated fraud detection model for the financial services industry.

Guang Cheng, Professor, Statistics

#### **Connected Hearts**

Connected Hearts provides dementia care training centered on communication and the emotional connection between the care giver and patient.

Lené Levy-Storms, Associate Professor & Hartford Faculty Scholar, Departments of Social Welfare and Medicine/Geriatrics

Susan Kohler, Speech-Language Pathologist

#### ConnectDrive

ConnectDrive is a next generation autonomous driving platform which provides "vehicle-to-everything connectivity. Autonomous vehicles will send and receive information to other vehicles, infrastructure (e.g. traffic lights), and pedestrians.

<u>Jiaqi Ma</u>, Associate Professor, Civil & Environmental Engineering



#### Nudge

Nudge is a behavior compliance solution which helps patients with medication adherence and almost anyone trying to stick with a healthy habit.

**Akihiro Nishil**, Assistant Professor, Epidemiology, School of Public Health

### DropletPharm: Revolutionizing radiopharmaceutical production

Radiopharmaceuticals are used in medical diagnosis and therapy. High manufacturing cost prohibit the use of niche Radiopharmaceuticals. DropletPharm is creating a desktop factory for the inexpensive, just-in-time production of radiopharmaceuticals.

**R. Michael van Dam,** Professor, Molecular & Medical Pharmacology

**<u>Clincy Cheung</u>**, Graduate Student, Materials Science and Engineering

<u>Jason Jones</u>, Postdoctoral Scholar, Molecular & Medical Pharmacology

**Travis S. Laferriere-Holloway**, Graduate Student, Molecular & Medical Pharmacology

Joanne Lu, Graduate Student, Physics & Biology in Medicine

### **DEVELOPING MICROBIAL THERAPIES** FOR METABOLIC DISEASES

UCLA RESEARCHER DR. ELAINE HSIAO has spent many years studying the gut microbiome and its connection to the brain, nervous system, and other parts of the body. The microbiome is a vast community of microorganisms including bacteria, viruses, fungi, protozoa, algae and archae, that normally reside in and on the body. The human body is comprised of many more microbial cells than human eukaryotic cells which contribute several hundred times more genes than our own human genomes.



In studying microbial interactions with the neurotransmitter serotonin, Hsiao's team identified a key bacterial species that is prevalent in the mammalian microbiome and modifies fat metabolism. In work led by microbiologist Dr. Jonathan Lynch, the team of researchers went on to identify how the bacteria are able to chemically transform bile to control levels of different lipids. In pre-clinical studies, models colonized with the bacteria or key genes from the bacteria had altered lipid levels, smaller fat cells, and decreased circulating triglycerides.

Purpose Bio has licensed the intellectual property from UCLA to develop a drug that is comprised of microbes to fight metabolic conditions, such as hyperlipidemia and non-alcoholic fatty liver disease (NAFLD), a liver disease that afflicts an estimated one-quarter of the US population. NAFLD does not have an approved drug today, a clear unmet need in the market.

Although drugs like statins already exist, the efficacy of drug treatments varies widely among individuals and many cause severe and detrimental side effects. Additional and alternative solutions are needed, and microbiome-based treatments are increasingly being developed to combat chronic metabolic diseases.



Elaine Hsiao, Assistant Professor in the Department of Integrative Biology & Physiology, UCLA

"Our initial experiments provide a strong mechanistic insight for how a prevalent symbiotic bacterium of the gut microbiome influences lipid biology" says Hsiao. Lynch further notes the potential to apply his discoveries to benefit humans: "The two main challenges are 1) how do we take bacteria that naturally does a good job at one thing and give it to a person who doesn't have that microbe and 2) how can we engineer bacteria to do a job better and more efficiently?"

As development progresses with Purpose Bio, Hsiao, Lynch, and their labs will continue their research of microbes and its application for various uses, especially fighting neurological and metabolic diseases.

Other start ups fueled by Dr. Hsiao's technology include Bloom Science (co-founder), Holobiome (scientific advisor) and Axial Therapeutics (former co-founder). Visit the Hsiao Lab



UCLA

WENTY23



### **ANNOUNCEMENTS** New Technology Development Corporation **Board Members**

### Welcome Gay Crooks and Craig Ehrlich to the TDC Board



**GAY M. CROOKS** is the Rebecca Smith Professor in the Department of Pathology & Laboratory Medicine and Professor of Pediatrics in the David Geffen School of Medicine, UCLA. She is Co-director of the Broad Stem Cell Research Center and Director of the Cancer and Stem Cell Biology Program, Jonsson Comprehensive Cancer Center at UCLA.

Dr. Crooks graduated from medical school at the University of Western Australia and completed her FRACP (pediatrics) at Princess Margaret Hospital for Children prior to her fellowship training in Pediatric Hematology-Oncology at Children's Hospital Los Angeles (CHLA). In 1993, she joined the University of Southern California faculty and established her laboratory and clinical programs in the Division of Research Immunology and Bone Marrow Transplantation at CHLA. In 2009 her research program moved to UCLA, where in addition to running her research program, Dr. Crooks is a pediatric bone marrow transplant physician in the Division of Pediatric Hematology-Oncology at Mattel Children's Hospital, UCLA.

#### **UPDATES**

UCLA TDG WOULD LIKE TO THANK Jennifer Mnookin for her service as a board member. Ms. Mnookin has been named Chancellor of University of Wisconsin -



**CRAIG EHRLICH** is the former chairman of the GSMA. the world's largest trade association for the mobile industry, a position that he held for seven years. He is also former chairman of Carmel Ventures Asia, now known as Viola Ventures, a leading Israeli venture capital Company. Craig currently serves as the lead independent director of Bharti Airtel, the world's fourth largest telecom company

He is also a member of the UCLA/Peking University Joint Research Institute Advisory Committee and former board chair, as well as a founding member of the Center for Global Management at the UCLA Anderson School of Management. In 2015, Craig became a member of the UCLA Foundation Board and, subsequently, its Executive Committee. He established the Norma Ehrlich Scholarship Fund, which to date has helped 78 women attend UCLA, all from California public schools. He is also a former student body president at UCLA.

Craig holds a B.A. degree from the University of California, Los Angeles, a master's degree from Occidental College and a postgraduate fellowship with the Coro Foundation. He resided in Hong Kong for 29 years and now splits his time between Los Angeles and Hong Kong.

Madison. And congratulations to Andrei Iancu who was recently named Chairman Elect of the TDC Board

### **ANNOUNCEMENTS** New UCLA TDG Team Members

#### We are moving and shaking at TDG





**Nick Traitler** Business Development Officer March 2022

**Harry Morall** ISR-MTA Associate May 2022

## **UPDATES**







Noreen Weinberg Contracts Manager, Post-Execution May 2022



Carol Lopez LABEST Strategic Alliances & Programs Officer June 2022



**Stefan Schweizer** Business Development Officer August 2022

## NE Nanotech Energy

Nanotech Energy's new 517-acre campus near Reno called 'most significant since Tesla'



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# In Memoriam **BRIAN ROE**



Brian Roe, director of the industry research and material transfer team at the UCLA Technology Development Group, died March 23. He was 41.

A member of the the group since 2008, Roe was dedicated to his work as an industry contracts officer and by 2012, he was promoted to director. In this role, Roe oversaw the operations of Industry Sponsored Research and Material Transfer, a team of 12. He helped navigate the potential risks and complex transactions that come with the industry partnerships that support UCLA's research ecosystem.

Some of Roe's major achievements included leading the collaborations between Apple and the <u>UCLA Depression Grand Challenge</u> and the UCLA and <u>Amazon Science Hub for Humanity</u> <u>and Artificial Intelligence</u>.

"Brian will be sorely missed by peers and faculty alike," said Amir Naiberg, associate vice chancellor, CEO and president of the UCLA Technology Development Group. "In recent years, his leadership brought significant achievements and new highs to UCLA's collaborative work with Industry. He will be missed, but the results of his work will be with us for many years to come."

Roe was an avid sports fan who played high school football and was a triathlete. He earned his bachelor's degree in political science from UC San Diego and his law degree from Loyola Law School.

He is survived by his mother, Irini Pappas, his stepfather James Pappas and his younger brother, Nick Pappas.

In lieu of flowers, the family requests that <u>donations</u> be made in his name to the Los Angelesbased <u>AIDS Healthcare Foundation</u>.



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