

## UCLA Technology Development Group **INNOVATION MAGAZINE**

DEC 2021 | VOL 8





# UCLA Technology Development Group INNOVATION MAGAZINE

#### DEC 2021 | VOL 8

### INNOVATION MAGAZINE DECEMBER 2021 VOL 8

**Editor:** Marivi Valcourt

#### Writers/ Contributors:

Charanjit Arora Tim Grauerholz Jessica McGruder Amir Naiberg Kristen Robertson

**Designer:** Jennifer Cogan

Front Cover: Royce Hall Photo: <u>UCLA Newsroom</u>

#### **CONTENTS**

A message from Amir Naiberg, Associate Vice Chancellor, CEO and President3
TDG by the Numbers
TDG Marketing Wrap up8
UCLA and Amazon join forces to create Science Hub for Humanity and Artificial Intelligence9
UCLA technology for predicting gestational diabetes advanced through new company11
Extrico Health expands its reach
UCLA TDG Student Programs15
UCLA Technology Development Group announces new board member17
UCLA TDG Board of Directors and Executive Staff

tdg.ucla.edu



A message from Amir Naiberg

Associate Vice Chancellor, CEO & President UCLA Technology Development Group

Amir Naiberg

UCLA TDG

Dear Readers,

I am happy to share with you TDG's fiscal year 2021 results. As you will see business was strong, despite the pandemic, we were able to negotiate and sign fifty-three exclusive licenses and options agreements. As part of UCLA's commitment to the community, all our pharmaceutical's licenses include language that will facilitate medicines invented at UCLA becoming more accessible to underserved communities.

Our invention disclosures were impacted by research closure and a staggered reopening. However, in view of record-high extramural grants and awards received by UCLA faculty, we anticipate this number will continue to rise as we move forward. Noteworthy, are the achievements of our Industry-Sponsored Research team: in the last two years research support from industry-sponsored research increased by almost fifty percent and Material Transfer activity is at a record high volume.

In this magazine, you will read about the New Science Hub for Humanity and Artificial Intelligence by Amazon and the road taken by a novel technology for predicting gestational diabetes from research to a startup company. Our flagship events MedTech Partnering Conference Tuesday, March 8, 2022 and LABEST Thursday, May 26, 2022 are scheduled to return to an in-person format, so please mark your calendars as we are looking forward to seeing you there.

Season's Greetings and a Happy Healthy New Year.

91-

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

## **TDG BY THE NUMBERS**

All data provided by UCLA TDG

#### LICENSING METRICS

#### Licensing Income \$240 \$183.85 \$190 Millions (\$) \$140 \$91.74 \$90 \$79.32 \$66.56 \$40.55 \$40 FY2017 FY2018 FY2019\* FY2020 FY2021 -\$10

\*FY2019 includes proceeds from a one-time litigation settlement.



#### **Exclusive Licenses and Options**

#### **CDA & Letters of Intent**



UCLA TECHNOLOGY DEVELOPMENT GROUP UCLA created the Innovation Fund to bridge the gap between early-stage research and translation of life-impacting technology and we ask for your support this holiday season. **GIVE NOW** 

#### **INDUSTRY SPONSORED RESEARCH METRICS**



#### **ISR Award Totals**

#### **Material Transfer Research Agreements**



#### **Invention Disclosures**



#### Top Invention Disclosures by school



David Geffen School of Medicine	158
Pharmacology	16
Med-Hematology	16
Surgery	16
Neurology	14
Psychiatry & Biobehavioral	11
Other Departments	85



Samueli School of Engineering	138
Electrical Engineering	42
Bioengineering	27
Mechanical, Aerospace & Engineering	26
Computer Science	21
Civil & Environmental Engineering	9
Other Departments	13

David Geffen School of Medicine (DGSOM)

## **TDG MARKETING WRAP UP**



LABEST 2021 virtual lobby

UCLA TDG

#### busy year of marketing activity. In 2021, we hosted our annual MedTech and LABEST Conferences as completely virtual experiences with over 1400 people combined logging in to view live panels, invention demonstrations, start-up pitches and breakout rooms. In addition, the

UCLA TECHNOLOGY DEVELOPMENT GROUP had a

New Ventures team hosted a series of webinars including Entrepreneurial Bootcamp – a series of 5 talks/ presentations and the Business of Bioscience Bootcamp – a series of 4 talks/presentations. Content from the MedTech, LABEST and Bootcamp events can be viewed on the UCLA TDG YouTube Channel.

Just recently, the ISR-MTA team hosted the Industry Research and Material Transfer webinar that featured in depth topics on material transfer agreements and steps to take when starting industry sponsored research. Over 134 people registered to attend the event. Also, as you read this, closed pitches are wrapping up for UCLA principal investigators who could receive funding from the <u>UCLA Innovation Fund</u> that bridges the gap between academia and industry. Look out for the open call for applications in early 2022.

The <u>tdg.ucla.edu</u> website was enhanced with new navigation, streamlined content, a page dedicated to <u>industry funding opportunities</u> and a customized <u>copyright flowchart</u>. All of the updates were based on user feedback and we thank you for helping us constantly improve.

Looking forward to 2022, the 10th Annual UCLA Med-Tech Partnering Conference will take place in person on campus March 8, 2022. <u>Registration is open now</u>. LABEST (Los Angeles Bioscience Ecosystem Summit Twenty-Twenty-Two) is scheduled for May 26, 2022 and will also take place in person at the Luskin Conference Center. Finally, the TDG marketing team will strive to provide more video and social media content so make sure to subscribe and follow us. **IM** 



At a kickoff event on the anniversary of the birth of the internet, speakers included Pietro Perona and Prem Natarajan of Amazon, and Leonard Kleinrock, Jayathi Murthy, Andrea Ghez, Jens Palsberg and Stefano Soatto of UCLA.

UCLA

## UCLA and Amazon join forces to create Science Hub for Humanity and Artificial Intelligence

Christine Wei-li Lee | October 29, 2021

**AMAZON AND UCLA** have collaborated to establish the <u>Science Hub for Humanity and Artificial Intelligence</u>, marking the technology company's first such alliance with a public university.

Based at the <u>UCLA Samueli School of Engineering</u>, the research hub will aim to leverage the cross-pollination of industry and academic research on artificial intelligence to address society's most pressing challenges and develop solutions that will ultimately benefit humanity. The collaboration will support doctoral fellowships, research projects and community outreach programs.

Amazon will provide \$1 million in funding for the initial year of the relationship and the parties may renew the agreement for up to four additional years. The hub will engage Amazon AI specialists and faculty from across the UCLA campus to jointly identify and solve research problems, with particular attention to issues of bias, fairness, accountability and responsible AI.

"We are delighted to collaborate with Amazon on this effort to examine the future of artificial intelligence and its implications for our world," UCLA Chancellor Gene Block said. "The Science Hub for Humanity and Artificial Intelligence will advance AI-related discoveries and deepen our understanding of a discipline that is revolutionizing the way we use and understand modern technology."

To celebrate the launch of the hub, UCLA Engineering today held "Amazon Science Day at UCLA," an event that coincided with the 52nd anniversary of the birth of the internet. On Oct. 29, 1969, UCLA computer science professor Leonard Kleinrock directed the transmission of the first internet message from his lab in UCLA's Boelter Hall to the Stanford Research Institute. Kleinrock, now a UCLA distinguished professor of computer science, has received numerous prestigious honors for his foundational contributions to the development of the internet.

The daylong program featured speakers from both institutions including Kleinrock; UCLA astrophysicist Andrea Ghez, winner of the 2020 Nobel Prize in physics; Jayathi Murthy, the Ronald and Valerie Sugar Dean of UCLA Engineering; and Stefano Soatto, vice president of applied sciences for Amazon Web Services AI and a UCLA professor of computer science. Soatto, currently on leave from his UCLA faculty position, was instrumental in helping Amazon and UCLA establish the collaboration.

Several other top executives from Amazon attended the event, including Prem Natarajan, Alexa AI vice president of Natural Understanding; Gerard Medioni, vice president and distinguished scientist; and Pietro Perona, Amazon Fellow for AWS Deep Learning.

"Amazon has long been at the forefront of AI breakthroughs, and we are incredibly excited to be working with them," Murthy said. "We will strive to harness the power of AI for the greater good and to provide myriad opportunities for students and faculty alike."

The hub will support AI research by faculty and students across campus through an advisory group headed by Jens Palsberg, a UCLA professor of computer science. Composed of representatives from both UCLA and Amazon, the group will develop, <u>solicit and select research proposals</u>, and review nominations for fellowship recipients.

Funding for the hub will also include annual fellowships of \$70,000 each for students in the second, third or fourth year of a UCLA Engineering doctoral program. As Amazon Fellows, they will be invited to take part in paid summer internships at the company.

In an effort to expand access to AI research, the hub will support community and outreach activities, such as public symposiums and workshops designed to facilitate networking across the Los Angeles metro area, and collaboration between UCLA and Amazon researchers.

"The hub is designed to foster the educational mission of the university, so it can best educate the diverse talent needed to sustain the AI revolution in the years to come, in a way that benefits all sectors of society," Soatto said. "It will also create opportunities for university researchers, by exposing them to challenging unsolved problems that arise in the diverse array of Amazon businesses.

"These collaborations with Amazon scientists can lead to new avenues of academic investigation that expand their research scope. The hub is also designed to enable faculty who think big to realize their vision, if it is not attainable within the resources of their labs."

The Science Hub for Humanity and Artificial Intelligence represents an extension of Amazon's long-held commitment to connecting with universities to advance research in AI and other fields. The hub also underscores Amazon's and UCLA's shared vision of improving access to AI technologies and diversifying the perspectives and practices involved in AI research and technology development.

"Amazon has long been at the forefront of AI breakthroughs, and we are incredibly excited to be working with them. We will strive to harness the power of AI for the greater good and to provide myriad opportunities for students and faculty alike."

-Jayathi Murthy

The agreement was facilitated by the <u>UCLA Technology</u> <u>Development Group</u>.

The collaboration builds upon Amazon's existing relationships with several UCLA professors, in addition to Soatto. Ying Nian Wu, a professor of statistics, joined Amazon as a scholar in November 2020, and Yizhou Sun, an associate professor of computer science, joined as a scholar in June. Additionally, UCLA computer science assistant professors Cho-Jui Hsieh, Kai-Wei Chang and Violet Peng are Amazon visiting academics. **IM** 

Originally published UCLA Newsroom.



Spencer Kerley

Photo courtesy of Spencer Kerley

### **GESTATIONAL DIABETES** is a complication experienced by far too many expectant mothers.

Arising during pregnancy, the condition interferes with the body's ability to use the hormone insulin to effectively turn food into energy, leading to high blood sugar levels. Estimates indicate one in six births worldwide is affected by gestational diabetes, which brings with it numerous health risks for both mother and child.

Today, testing for gestational diabetes takes place midway through pregnancy. However, research by UCLA Health OB/GYN Dr. Brian Koos and funded by the <u>UCLA Innovation Fund</u> has led to a screening that may be able to predict gestational diabetes much earlier, improving the chances of intervening and halting the disease before it develops. This technology is being developed under license by BruinDx, a company whose campus roots connect <u>UCLA Health</u> with the <u>Anderson School of Management</u>.

According to co-founder and CEO Dr. Spencer Kerley, BruinDx's activities are animated by the mission of making a broad, positive impact.

"We see this as an opportunity to bring greater value to women's health," said Kerley, who has been a gynecologic pathologist serving the Kansas City, Missouri, area for more than 30 years. "The beauty is the simplicity. We aim to unplug a 100-year-old test and plug in a much more accurate, noninvasive test."

## UCLA technology for predicting gestational diabetes advanced through new company

BruinDx driven by worldwide vision for improving the health of women — and their babies

Wayne Lewis

That century-old diagnostic — the glucose tolerance test — is performed around week 24 of pregnancy and requires blood to be drawn multiple times. If BruinDx's screening is clinically proven safe and effective, it could be conducted as early as the 10th week of pregnancy using only a urine sample.

BruinDx's test zeroes in on specific products of the metabolic process that indicate oxidative stress, a damaging imbalance that can result in diabetes and is worsened by the challenges seen in pregnancy. Dr. Koos and his colleagues developed technology for identifying these markers and showed that it predicts gestational diabetes with 96% accuracy. The research was boosted by an enabling grant through the UCLA Innovation Fund.

"Much of what's been done so far has really been funded by the UCLA Innovation Fund," Kerley said. "Without that, we wouldn't have a project at this point."

#### Related: <u>18 UCLA researchers and scientists receive</u> <u>awards from UCLA Innovation Fund</u>

Gestational diabetes poses potential danger to both mother and child, resulting in induced labor or Caesarean section pregnancies at a far higher rate. Afterward, mothers are at higher risk for postpartum depression, obesity and type 2 diabetes. In addition, babies born after a pregnancy affected by gestational diabetes have longer stays in intensive care on average and a higher rate of jaundice — as adults, their risk for obesity and type 2 diabetes is also higher.

The ability to screen for gestational diabetes before it develops would open up a host of new possibilities.

"There are all kinds of really exciting questions that follow," Kerley said. "Can we intervene with diet and gentle exercise to bend the curve of gestational diabetes? Can we use this screen for nonpregnant people at risk?"

The kernel for BruinDx first sprouted in 2017 when Kerley's son Daniel '18 was an MBA student at UCLA Anderson. In his younger years, the former investment banker had worked at the diagnostics lab then co-owned by his family, and was curious about entrepreneurial opportunities for commercializing biomedical technology.

The younger Kerley, a co-founder of BruinDx, reviewed a portfolio with hundreds of opportunities put together by the Technology Development Group, before he and his father ultimately decided to pursue a license for Koos' technology. The deal was finalized in spring 2021, and the company's test is currently in middle-stage clinical trials. "The beauty is the simplicity. We aim to unplug a 100-year-old test and plug in a much more accurate, noninvasive test." -Spencer Kerley

The founders' ambitious vision for BruinDx also includes a philanthropic element. With success, they hope to tap into a \$1.5-billion market in the West to establish a nonprofit arm bringing the test to impoverished areas of Africa and the Indian subcontinent.

"It's a vision for where this could go," Spencer Kerley said. "We went into this looking to make the greatest positive impact. It's a higher value for us to see people's health improve." **IM** 



## Extrico Health expands its reach



Ira Hofer M.D.

Photo courtesy of Ira Hofer M.D.



Photo courtesy of Eilon Gabel M.D. Eilon Gabel M.D.



**TONS OF DATA** lives in patients' electronic health records or EHR but data is as good as it is organized, accessed, and analyzed. The healthcare industry has spent billions of dollars on creating databases for their patients, but the process of review was slow and clunky and still being done exclusively by healthcare workers. UCLA's Ira Hofer M.D. and Eilon Gabel M.D. saw this disparity and set out to make improvements. Initially, the duo spent time working on EHRs at UCLA and created a platform that would become the cornerstone of their company Extrico Health.

Hofer and Gabel worked on coding and created dashboards that would serve up meaningful patient data for the healthcare provider. Hofer elaborates, "Creating individualized physician and department variables to measure key performance indicators like surgical case volume and postoperative complication rates is an example of what we can do with Extrico." After conversations with colleagues across the country, both researchers realized that their work could help other hospitals and healthcare systems and moved forward to form the company to serve the broader market.

Working with UCLA Technology Development Group (TDG), Hofer and Gabel took advantage of the Start Up in a Box or SIAB program to kick start their understanding on launching their own company. In addition, they worked with TDG on the licensing of their unique technology. UCLA TDG Senior Director, Dina Lozofsky says, "Hofer and Gabel's invention has the potential to improve patient care by enabling clinical insights. We are pleased to license this technology to Extrico, not just to move this innovation to the market, but to support faculty entrepreneurship."

Over the past few years, Extrico Health concentrated on building the company, bringing in CEO John LaValle, Director of Solutions Architecture Lori Taft and Systems Implementation Manager, Garrett Pieramico. In addition, "Creating individualized physician and department variables to measure key performance indicators like surgical case volume and postoperative complication rates is an example of what we can do with Extrico." *-Ira Hofer*  investor Doug Gold, former Stamps.com co-founder Ari Engelberg and former VP of Cedars Sinai Rekha Murthy joined Extrico's Board of Directors.

Now Extrico Health is moving to the next growth phase by concentrating on outbound sales and expanding their client base domestically and internationally. The company already works with Vanderbilt University in Tennessee and Mt Sinai in New York. Richard Epstein M.D. from University of Miami was an early adopter. "Extrico has both the IT knowledge and the subject expertise that has proven helpful for us. We can explain what is needed and the company has been able to provide. It's resulted in a well-organized data warehouse that works efficiently."

Extrico is raising Series A funding that will help expand the company and continue its market growth. **IM** 



## **UCLA TDG STUDENT PROGRAMS**

THE TDG STUDENT PROGRAMS offer graduate and undergraduate students paid internships that offer in-depth, hands-on experience in the business of technology transfer and intellectual property management. Along with real-world job skills, the program exposes fellows to new, meaningful career opportunities related to transferring inventions from the lab to the marketplace and, ultimately, to changing the lives of people worldwide through science. Among the skills the fellows acquire are technology evaluation, marketing and business development and tech commercialization. During this unique experience, fellows actively contribute to the commercialization of UCLA technologies.



HARDIK CHAWLA Anderson School of Management



**CLINCY CHEUNG** Materials Sciences and Engineering



**REEMA KUMARI** Engineering, Samueli School



**NEW VENTURES FELLOWS** 

JON-DAVID HORNE Anderson School of Management



ABRIL MORALES Molecular Biology Interdepartmental Doctoral Program



SALENA GALLARDO Molecular Biology Interdepartmental Doctoral Program



**KATHERINE POHL** Molecular Biology Interdepartmental Doctoral Program



**RAUL HERNANDEZ** Anderson School of Management





ADRIAN GOMEZ Chemistry and Biochemistry



ZIRUI (RAY) LIU Materials Science and Engineering



**ROSHAN PLAMTHOTTAM** Materials Sciences and Engineering



**ALEJANDRA RIOS** Molecular and Medical Pharmacology



CHRISTOPHER SUE Chemistry and Biochemistry

#### **PHYSICAL SCIENCE FELLOWS**

#### LIFE SCIENCE FELLOWS



PAUL AYOUB Molecular and Medical Pharmacology



**CLARA CANO** Biological Chemistry



**KATHLEEN CHEN** Chemistry and Biochemistry



ALFREDO GONZALEZ Molecular & Medical Pharmacology

#### SR. LIFE SCIENCE FELLOW



**TRAVIS HOLLOWAY** Molecular and Medical Pharmacology



JUSTIN MILLER Molecular Biology Interdepartmental Doctoral Program



PAIGE ZHANG Ecology and Evolutionary Biology





UCLA Technology Development Group announces new board member

Anne W. Rimoin

UCLA

DR. ANNE W. RIMOIN is an internationally recognized expert on emerging infections, global health, surveillance systems, and vaccination, and has been engaged in pandemic preparedness and response for more than two decades. She is a Professor of Epidemiology at the UCLA Jonathan and Karin Fielding School of Public Health (FSPH) and Infectious Disease Division of the David Geffen School of Medicine. She is the UCLA FSPH Director of the Center for Global and Immigrant Health and the founding Director of the UCLA-DRC Health Research and Training Program. Recently, Dr. Rimoin was named the Gordon–Levin Endowed Chair in Infectious Diseases and Public Health at UCLA FSPH. Dr. Rimoin has been a strong advocate for capacity building in low resource settings and conducting disease surveillance in complex emergencies.

Dr. Rimoin's pioneering research in emerging diseases includes the identification of new pathogens in humans and epidemiologic studies of Ebolavirus, human Monkeypox and other emerging infections. She is currently leading a series of research studies on COVID-19 locally and globally, including the COVID-19 asymptomatic infection and immunity study in Los Angeles health workers and first responders and a study of vaccine hesitancy in essential and frontline workers. Dr. Rimoin has published more than 80 research articles and book chapters. Her expertise has been featured in *The New York Times, The Atlantic, The Economist, The Los Angeles Times, The Wall Street Journal, The Washington Post, WIRED, Discover, Scientific American, Popular Science, Forbes, National Geographic, Nature and Science.* She also appears frequently on television and radio discussing major issues surrounding disease emergence and has recently been a leading voice on the COVID-19 pandemic in local, national, and international news media outlets including regular appearances on ABC, BBC, CBS, CNN, CNN International, Fox News, Fox Business News, KCBS, KNBC, KTLA, KTTV, MSNBC, NBC and Spectrum News.

Dr. Rimoin earned her BA at Middlebury College, MPH at UCLA and PhD at Johns Hopkins University. She started her career in global public health in as a Peace Corps Volunteer in Benin, West Africa. She has been recently recognized for her achievements in the fields of Epidemiology and Global Health as a Fellow of the American Society of Tropical Medicine and Hygiene, the Alumni Achievement Award from Middlebury College and the Global Achievement Award from the Johns Hopkins University.

## **UCLA TDG Board of Directors**

WILLIAM MITCHELL, CHAIRMAN Founding Partner, Sequel Ventures Partners, LLC

TOM UNTERMAN, CHAIRMAN EMERITUS Founding Partner, Rustic Canyon Partners

FABRIZIO BONANNI Executive Vice President, Amgen (Ret.)

MICHAEL J. CLEARE Associate Vice Provost for Research, University of Pennsylvania

MICHAEL DAL BELLO Investment Partner of Healthcare, Pritzker Private Capital

**SYLVIO DROUIN** Senior Vice President Research Labs, Unity Technologies

DAVID GILMAN Partner, ClearView Healthcare Partners

**CARL E. GULBRANDSEN** Former Managing Director/CEO, Wisconsin Alumni Research Foundation (WARF)

THOMAS HERGET Head, Silicon Valley Innovation Hub

**EVA HO** Partner, Fika Ventures

ANDREI IANCU Partner of Irell & Manella LLP **AYA JAKOBOVITS** Founder, President, CEO and Director, Adicet Bio, Inc.

**RAJIT MALHOTRA** Executive Chairman, AmperSand Biopharmaceuticals

JOHN T. MAPES Managing Partner, Aurora Capital Partners

JENNIFER MNOOKIN Dean, Ralph and Shirley Shapiro Professor of Law, Faculty Co-Director, PULSE@UCLA Law

AL OSBORNE Professor and Faculty Director, Price Center for Entrepreneurship & Innovation

**ROBERT PACIFICI** Chief Scientific Officer, CHDI Foundation

MATTHEW PENDO Managing Director, Head of Corporate Development and Capital Markets, Oaktree

JESSICA RICHTER Chief Operating Officer, Experien Group

ANNE W. RIMOIN Professor of Epidemiology, UCLA Fielding School of Public Health

**BARBARA K. SOSNOWSKI** Vice President and Global Head, Emerging Science & Innovation Leads, WWRDM

## **UCLA TDG Executive Staff**

AMIR NAIBERG Associate Vice Chancellor – CEO and President

TIM GRAUERHOLZ Chief Financial Officer and Chief Operations Officer

**DINA LOZOFSKY** Senior Director of Physical Sciences and Engineering

MARK WISNIEWSKI Senior Director of Biopharmaceuticals ANGELA KUJAK Senior Director of Contracts

THOMAS LIPKIN Director of UCLA Innovation Fund and New Ventures

BRIAN ROE Director of Industry Research and Material Transfer

LAURA VAN NOSTRAND Director of Human Resources



UCLA Technology Development Group (TDG) promotes UCLA innovation, research, education and entrepreneurship to benefit society. Working with UCLA TDG helps facilitate the translation of UCLA discoveries into new products and services that create economic value to support UCLA's scholarly and educational missions. The UCLA TDG office manages a large portfolio of technologies and license agreements and has a rich history of startup company formation.

For more information, please visit: tdg.ucla.edu

10889 Wilshire Blvd., Suite 920, Los Angeles, CA 90095 310.794.0558 | marketing@tdg.ucla.edu | www.tdg.ucla.edu



Connect with us @ UCLATDG