

UCLA Technology Development Group INNOVATION MAGAZINE

DEC 2019 | V. 05



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THE ASSOCIATE VICE CHANCELLOR, CEO & PRESIDENT



Dear Readers,

I'm happy to present our results for fiscal year 2018. As you will see, it has been a record year in many of the data points that we measure. We take pride in the number of new invention disclosures received by our office and the record number of exclusive agreements and options signed.

All of the above generates significant economic activity for the region. Last year, UCLA companies raised \$662 million. In addition, according to a recent Biocom report, employment in the Research & Lab Services subsector experienced the most regional growth, with an increase of 11% from 2013 to 2018, likely a result of Los Angeles County receiving more NIH funding each year than any other county in California.

We are proud of the UCLA faculty that were responsible for about half of the NIH funding awarded to our region.

Our efforts in building an ecosystem of innovation and entrepreneurship around UCLA were recognized and featured in the July edition of *In Vivo* magazine under the title <u>"Building a Biotech City"</u>.

Recently, we increased our marketing efforts. Our website https://tdg.ucla.edu/ was redesigned and streamlined to make it more accessible. The TDG site features a one button process to submit inventions and a simpler way to search UCLA technologies available for licensing as well as a concierge service (see page 8). In addition, we've increased our presence on social media and added Instagram to our range of platforms.

Lastly, I'm honored to welcome Dina Lozofsky to our team. Dina serves as the Senior Director of Business Development, Physical Sciences and Engineering. Dina joined UCLA TDG in August 2019, bringing more than 25 years experience working in and around science and technology in Southern California. Most recently, Dina was executive director at Biocom's LA office.

Please register early to one of our Spring 2020 events, last year they sold out quickly.

Sincerely,

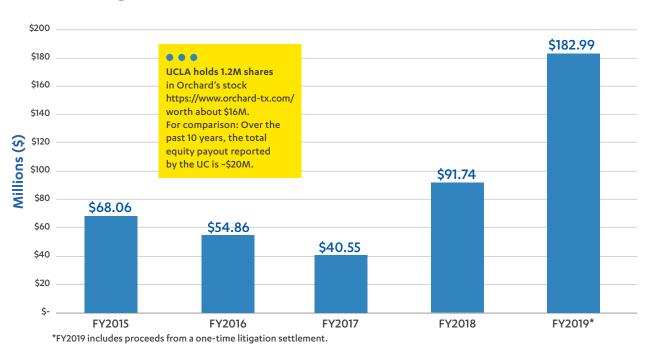
Amir Naibera

Associate Vice Chancellor, CEO and President

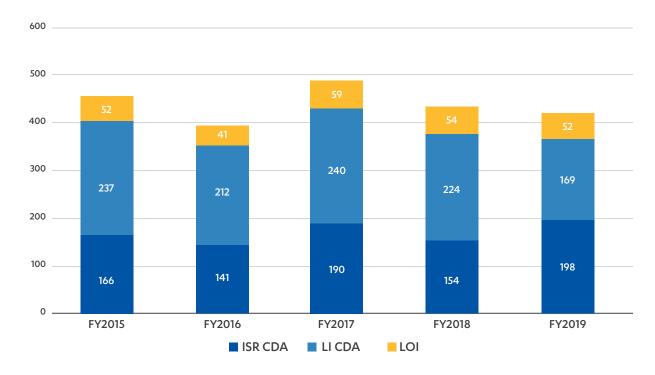


LICENSING METRICS

Licensing Income



NDA & Letters of Intent



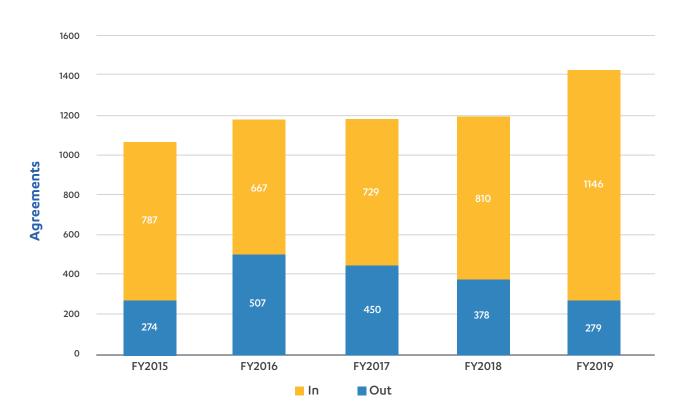
TDG BY THE NUMBERS

INDUSTRY SPONSORED RESEARCH METRICS

ISR Award Totals

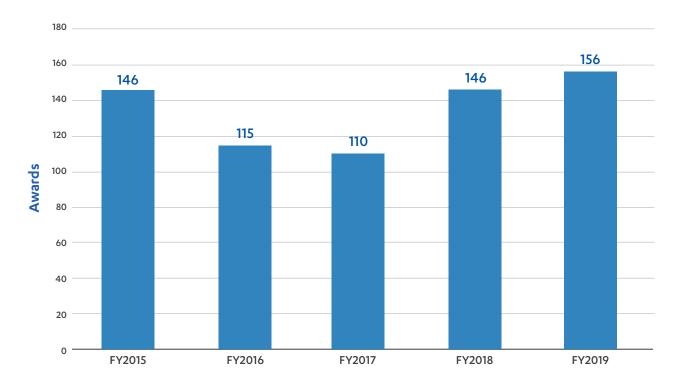


Material Transfer Research Agreements

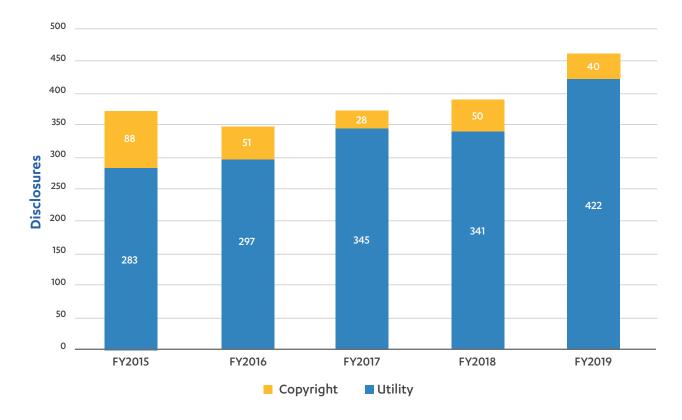


TDG BY THE NUMBERS

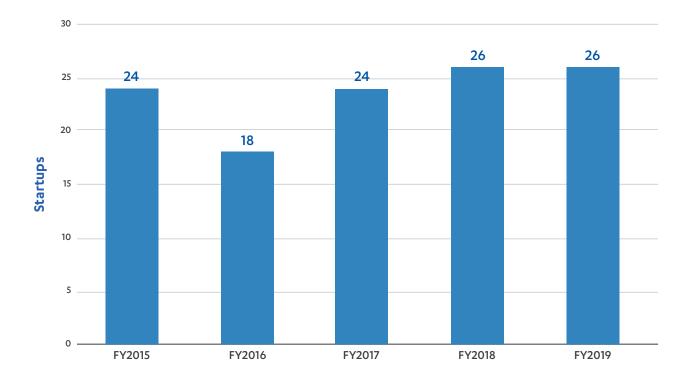
ISR Awards



Invention Disclosures



STARTUPS







80 interactions

with UCLA Companies Emails, Phone Calls, Meetings



4 introductions

to VC's, Entrepreneurs, & Corporates for UCLA Companies



4 pipeline reviews of all UCLA Company Tracking



4 On-Campus



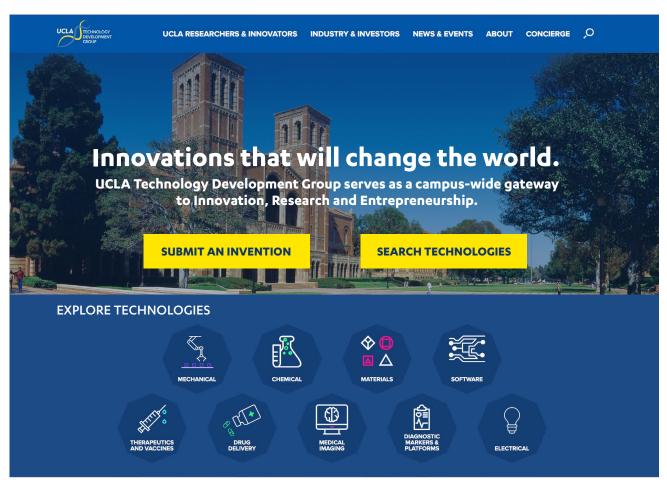
VC Dollars Invested in UCLA Companies (All Time)*



Capital raised by UCLA Licensed Startups in 2018

NEW TDG WEBSITE

THE NEW WEBSITE HTTPS://TDG.UCLA.EDU/ features a streamlined design and provides many resources for UCLA inventors and a handy FAQ section. Companies looking to license UCLA technologies can hover over the category graphics to reveal fun animation or use the one button feature on the home page. Plus, researchers and startups can view educational and funding sources that are available. We invite you to explore our new site.



HIGHLIGHTS OF UCLA TDG AVAILABLE TECHNOLOGIES

DESCRIPTION	UCLA DEPARTMENT	LINK TO MORE DETAILS
Treatment for Melanoma	Molecular and Medical Pharmacology and Medicine	http://ucla.technologypublisher.com/technology/28498
Gene therapy to prevent Dysmyelination	Surgery	http://ucla.technologypublisher.com/technology/36131
Creatine as a "Molecular Battery" powering anti- tumor cells	Microbiology, Immunology and Molecular Genetics	http://ucla.technologypublisher.com/technology/37147
Photo-induced metal printing technique for creating metal patterns and structures under room temperature	Materials Science and Engineering	http://ucla.technologypublisher.com/technology/35841

INVESTORS



8TH ANNUAL

MEDTECH

PARTNERING CONFERENCE

INDUSTRY

REGISTRATION NOW OPEN Visit tdg.ucla.edu

INVENTORS

MARCH 3, 2020 UCLA CAMPUS

TAKING THE LEAD ON REPRESENTING THE UNIVERSITY PERSPECTIVE ON AI INVENTION PATENT GUIDELINES



ANGELA KUJAK, J.D.

AT THE END OF AUGUST
2019, the U.S. Patent &
Trademark Office (USPTO)
posed 12 questions seeking
public comment on patenting artificial intelligence
(AI) inventions. The USPTO's
primary goal in pursuing
feedback is to determine
whether and to what extent
those applying for patents
desire additional clarity as

to how to obtain patents on AI-enabled inventions. Our very own Angela Kujak, Senior Director of Contracts of UCLA's Technology Development Group (TDG), is leading the conversation and drafted a response to the USPTO on behalf of academic institutions nationwide through the tech transfer trade association AUTM.

To provide context as to why this effort was important, Angela explained: "AUTM's mission is to support and advance technology transfer worldwide. The goal of AUTM's public policy task force, of which I am a member, is to ensure that university tech transfer offices have a seat at the table when important policy decisions or other guidance is being created that impact tech transfer operations and their success. Academic institutions are a crucial engine for advancing medicine, technology, agriculture and public health – the inventions arising out of university labs have the ability to improve lives and drive economic growth and it is important to protect that ingenuity."

"TDG is receiving a high volume of AI-enabled technology invention disclosures and I think this is in large part due to the collaborative approach of UCLA's researchers."

Kujak said. "Al technologies by their nature are inter-disciplinary. Academic institutions, like UCLA, that are among the world's leaders in multiple technology focus areas will necessarily rise to the top in this tech space. The optimism that our inventors exude is contagious."

Attorney, David Bailey of KPPB LLP, whose firm specializes in this field said, "Machine learning and AI are accelerating the pace of innovation in all areas of technology. Leading academic institutions, such as UCLA, are being inundated with requests by researchers seeking to protect machine learning enabled breakthroughs in fields as diverse as autonomous vehicles, computer animation, and drug discovery. At the same time, the courts are continuously evolving our understanding of the extent to which software inventions are patentable. Therefore, it is becoming increasingly vital to seek expert advice early on in the invention disclosure process to determine whether a particular innovation is a good candidate for patenting and the best strategy for seeking protection."

To get a sense of whether other university tech transfer offices across the nation were having similar experiences, Angela and her legal extern Aryeh Price had calls with over 15 different AUTM constituents, including Stanford, MIT, UC Berkeley, Caltech, University of Chicago, Duke, university outside counsel, several inventors, and a venture capitalist with experience investing in AI-related startups. "TDG is very fortunate to have a highly talented law student in the office this fall. Aryeh received a master's degree from Caltech and has both academic and industry experience in bioinformatics, cancer genomics and epigenetics, all of which rely on AI-enabled technology. He was instrumental in helping me better understand the technical issues and together we were able to generate very productive conversations with the various tech transfer offices."

EXAMPLES OF UCLA AI TECHNOLOGIES

NAME	SCHOOL	LINK TO MORE DETAILS
VR Tasks for Stroke Rehab	UCLA Engineering	http://ucla.technologypublisher.com/technology/35777
Gastrointestinal Motility Studies	UCLA DGSOM	http://ucla.technologypublisher.com/technology/36726
Discover Hidden Web Content	UCLA Computer Science	http://ucla.technologypublisher.com/technology/35605
LAMBDA-Reservoir Computing	UCLA Engineering	http://ucla.technologypublisher.com/technology/36134

TAKING THE LEAD, CONT.

Aryeh noted — "It was interesting to observe how all of the institutions were having the same challenge — how does a licensing officer assess whether she should, and how to most effectively, pursue patents on the sudden influx of Al-related invention disclosures the tech transfer office is receiving?"

Kujak noticed that, although there were many similarities in the feedback received, some of the issues experienced by an academic institution were influenced by its surrounding ecosystem. For example, "universities having affiliated hospital systems were more likely to raise questions around their future success in patenting and translating AI-enabled techs out of the university in view of data privacy and health record regulations. Institutions with

robust computer science departments, on the other hand, tended to reflect on their experience patenting software-related inventions and questioned whether patenting in the AI space will face similar challenges."

From the conversations with various AUTM members, there is one topic that did rise to the top. "Every university, and industry for that matter, is trying to figure out the data issue. Since universities are continually generating vast amounts of data, the conversations inevitably veered to the importance of properly managing the use, disclosure and licensing of data."

UCLA TDG MedTech Partnering Conference 2020 scheduled for March 3, 2020 will feature a panel on digital health. We invite you to contact us if you are interested in participating.

\bullet

UCLA AND THESEUS AI ANNOUNCE LICENSE AGREEMENT FOR TECHNOLOGY THAT INTERPRETS SPINE MRIS



DR. LUKE MACYSZYN AND BILWAJ GAONKAR

UCLA SIGNED A LICENSE AGREEMENT WITH THESEUS AI

for technology developed at UCLA that uses artificial intelligence to interpret MRI scans of patients' spines.

Developed by a team of UCLA researchers, the software suite is intended to provide health care professionals with data that helps diagnose and treat back pain, and can help identify people who would be candidates for spine surgery. Theseus AI is a Los Angeles-based startup that was formed to commercialize the technology.

Led by Dr. Luke Macyszyn, a neurosurgeon at the UCLA Spine Center, the team created an algorithm trained by machine learning to provide objective measurements of spinal stenosis —the narrowing of spaces within the spine —from MRIs. The algorithm also compares the measurements to those of patients of the same gender and similar age and height to determine the degree of the disease. Theseus will integrate the algorithm into picture

archiving, communication systems and electronic health records to provide radiologists, surgeons and primary care physicians with accurate and consistent identification and measurement of key features of the spine.

"Providing clinicians with more objective data to support their decision-making will ultimately lead to better identification of candidates for surgical treatments and better outcomes," Macyszyn said.

Macyszyn collaborated on the research with Bilwaj Gaonkar, a UCLA postdoctoral researcher in bioengineering. Their work, which was funded in part by the <u>UCLA Innovation Fund</u> and the National Institutes of Health, has led to papers in several publications, including the RSNA journal Radiology: Artificial Intelligence.

The agreement with Theseus AI was facilitated by the UCLA Technology Development Group, which manages UCLA's intellectual property portfolio and the Innovation Fund. Theseus AI builds software to improve the identification, consistency and accuracy of anatomical measurements, to deliver accurate and consistent data to clinicians.

"The agreement with Theseus AI further validates our model of leveraging internal funding to bridge the gap between academia and external interest," said Thomas Lipkin, the Technology Development Group's director of the Innovation Fund and new ventures. "This was one of several projects from the UCLA Innovation Fund that we believe can be successfully commercialized to advance medical care."

Reprinted from <u>UCLA Newsroom</u>

FACULTY INNOVATION FELLOWS PROGRAM CONTINUES IN 2020

IN 2019, THE OFFICE OF THE VICE CHANCELLOR for

Research and Creative Activities and Startup UCLA launched the Faculty Innovation Fellows program (FIF), they aimed to take UCLA's entrepreneurial excellence and startup culture to the next level.

The FIF program is an accelerator designed to hone innovators' great ideas and put them into action. Each year, 10 faculty-led teams with academic projects that have potential to create real-world impact through new startup companies, centers, or non-profits, are chosen to participate in the 12-week program. Fellows collaborate with mentors and colleagues to increase their competitiveness in the areas of pitch development, business strategy and venture consulting.

The 2020 FIF program expanded to include Postdocs. "We believe that Postdocs are well situated to be part

of a team that will move research from academia into a startup. Moreover, we hope they will become I&E ambassadors on campus. For postdocs that will not pursue an academic career, this program is an opportunity to build their second career," said Amir Naiberg, associate vice chancellor and ceo & president of UCLA Technology Development Group.

UCLA Faculty and Postdocs should mark their calendars for the next call for submissions.

Applications for the 2020 FIF program recently closed. The application process opens in Late Fall and closes in December. Make sure to sign up for the <u>UCLA TDG E-Newsletter</u> if you want to get the latest information on the Faculty Innovation Fellows program and follow us on social media @UCLATDG





FACULTY INNOVATION FELLOWS 2019 ALUMNI

SAVE THE DATE

THURSDAY, MAY 21, 2020 UCLA LUSKIN CONFERENCE

Formerly UCLA Bioscience Innovation Day CENTER





LA BIOSCIENCE OSYSTEM ENTY20TM UCLA



SANOFI AWARDS



UCLA TDG IS ENDEAVORING TO DEVELOP

productive relationships with the biopharma industry to facilitate the licensing of new innovative research to develop new therapies for patients. One efficient approach is to participate in established biopharma sponsored research programs which provide the following benefits:

- Periodic announcements for sponsored research Request-for-Proposals (RFPs), typically on an annual basis
- Standard master sponsored research agreements which streamline the execution timeframe of project contracts
- For approved projects, PI exposure to the drug development process through biopharma joint steering committee meetings

In 2018, UCLA joined the <u>Sanofi iAwards</u> program along with 16 premier academic institutions across North America including: Columbia University, Johns Hopkins University, University of Pennsylvania, Stanford University and New York University. The Sanofi iAwards program is a multi-institutional academic partnership program designed to collaborate with academic investigators to quickly move promising early stage, disease relevant, innovative research towards the clinic. Areas-of-interest include multiple therapeutic areas including: immune-oncology, immunology & inflammation, rare diseases, neurosciences, diabetes and cardiovascular diseases.

Based on the initial success from joining the Sanofi iAwards program, TDG is currently evaluating opportunities to join similar biopharma sponsored research in the near future.

OVER THE PAST TWO YEARS, UCLA HAS SUCCESSFULLY RECEIVED FIVE SANOFI IAWARDS.

2018

Hans David S Ulmert MD PhD: In vivo Immuno-Targeting of an Extracellular Epitope of Preferentially Expressed Antigen in Melanoma (PRAME)

Ke Shuai PhD: A Small Molecule Compound in the Treatment of Autoimmune Disorders

David Nathanson PhD: Evaluation of EGFR inhibitor, JGK068, as a lead drug candidate for glioblastoma treatment

2019

John Chute MD: Anti – PTN antibody mediated eradication of myeloid leukemia

Carla Koehler PhD: Screening small molecule modulators to rescue AGT trafficking in Primary Hyperoxaluria 1

THROUGH THIS PROGRAM, SELECTED PROPOSALS RECEIVE:

- \$125,000 research funding (including institutional indirect costs) over twelve months
- Potential access to in-kind resources such as reagents, tool compounds, etc.
- PI collaboration with a Sanofi development team on a research project to achieve defined translational milestones
- Sanofi scientific expertise and guidance
- Successful projects with the Sanofi iAwards program have the opportunity to advance to sponsored research projects with significant \$500k funding over 2-3 years. (None of the UCLA projects have yet completed the initial iAwards project.)

LATESTUPDATES

FREE SEMINAR DECEMBER 12

TDG's Industry Research and Material Transfer Team will provide an informational seminar and training session to help de-mystify industry sponsored research projects with for-profit companies and the process on how to secure the receipt and transfer of materials for use in research. Register Here.

ISR-MTA

Nuts and Bolts:
Industry Research Contracts
& Material Transfers

2019

DECEMBER 12TH | 9AM - 12PM

MEDTECH 2020 SPEAKERS JUST ANNOUNCED!

REGISTRATION NOW OPEN

Jay Schmelter, Managing Director, RiverVest Ventures Partners

Michael Pfeffer, MD, FACP, Assistant Vice Chancellor and Chief Information Officer, UCLA Health Sciences

Paul Grand, CEO, MedTech Innovator

Casey McGlynn, Partner, Wilson Sonsini

Kwame Ulmer, Venture Partner, Wavemaker Three-Sixty Health

Jay Wang, CEO, Zenomics

Jill Gordon, Partner, Co-chair, Life Sciences Practice, Nixon Peabody

Clara Lajonchere, PhD, Deputy Director, UCLA Institute for Precision Health

Representative, Adi Family Office

Berkeley S K Y) E C K

Berkeley SkyDeck, one of the top global accelerators, just opened applications for their Spring 2020 cohort. The UCLA Community is welcome to apply!

Backed by an impressive list of Silicon Valley investors, Berkeley SkyDeck is open to startups from around the world. As a UC Berkeley program, SkyDeck offers access to university faculty and resources as well as a home base for startups to launch in Silicon Valley. SkyDeck also provides access to a powerful network of exceptional advisors and talent.

Startups selected to the cohort program will receive \$100,000 investment from the Berkeley SkyDeck Fund and pitch over 650 investors at SkyDeck's Demo Day. Watch this video to find out how we help the world's top startups!

Startups with ONE founder from ANY of the 10 University of California campuses are able to apply. **The deadline is Jan 8, 2020.** Learn more and apply today!



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.

SENIOR TECH FELLOWS



ELLIOT HORLICK Law



SHUIN (SUE) PARKMolecular, Cellular &
Integrative Physiology

LEGAL EXTERN



ARYEH PRICE

JD Candidate

UC Berkeley (Class of 2021)

TECH FELLOWS



MICHELLE BRADLEY Chemistry & Biochemistry



RUXI DAIInorganic Chemistry



NEBULA HAN Molecular and Medical Pharmacology



TRAVIS HOLLOWAYPharmacology

UCLA TDG STUDENT PROGRAMS

TECH FELLOWS CONTINUED



ANNA KATAKI-ANASTASAKOU Chemistry & Biochemistry



ARIELLA MACHNESS Materials Science & Engineering



MAEVE NAGLEBiochemistry



BAU NGOC (NATHAN)
PHAM JR.
Bioengineering



ELAINE QIANBioengineering



CHRISTOPHER SUE
Biochemistry



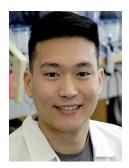
MARY WADDINGTON

Materials Chemistry



YILIAN (ELAINE) WANG
Bioengineering

NEW VENTURES FELLOWS



PATRICK CHANG Molecular Biology Interdepartmental Program (MBIDP)



TIAN DENGChemistry and
Biochemistry



GRACE HANCOCKBiosciences



SOLAH LEEBioengineering

NEW VENTURES INTERN



BINSEN LI Chemistry & Biochemistry



CAMERON MCELFRESHPhD program in Materials
Science and Engineering



JOSEPH TSUNG
Bioengineering



DONOVAN WILLIAMSPolitical Science

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AL OSBORNE

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Director UCLA Innovation Fund and New Ventures

BRIAN ROE

Director of Industry Research and Material Transfer

LAURA VAN NOSTRAND

Director of Human Resources



CONGRATULATIONS TO OUR 2019 UCLA INNOVATION FUND AWARDEES

TRACK 1 THERAPEUTICS

KHK Inhibitors for Targeted Cancer Therapy

HEATHER CHRISTOFK, PHD; MICHAEL JUNG, PHD

Small Molecule NPas2 Suppressors for Surgical Scar Prevention

ICHIRO NISHIMURA, DDS, PHD; AKISHIGE HOKUGO, DDS, PHD; HIROKO OKAWA, DDS, PHD

Inhibitors of the N-terminal Domain of the Androgen Receptor

MATTHEW RETTIG, MD; ROBERT REITER, MD; MICHAEL JUNG, PHD; ELSHAN RALALAGE, PHD

Development of Broad Spectrum Antiviral Medications to Treat Enteroviruses

PAUL KROGSTAD, MD; MICHAEL JUNG, PHD

Synthetic Exosomes for CNS Drug Delivery

VARGHESE JOHN, PHD; JESUS CAMPAGNA, MS; PATRICIA SPILMAN, MS

TRACK 2 MEDTECH

Dopamer: Bioactive Dental Filling with Remineralization Power

ALIREZA MOSHAVERINIA , DDS, MS, PHD, FACP; M. MAHDI HASANI-SADRABADI, PHD

Multi-component System for Manipulation of Bone and Soft Tissues

NELSON SOOHOO, MD

A Wearable Platform Detecting Cortisol Levels for Stress Management

SAM EMAMINEJAD, PHD; A. JANET TOMIYAMA, PHD

Point-of-care Detection Device for Cerebrospinal Fluid Leaks

ASHLEY KITA, MD; MAIE ST. JOHN, MD; DANIEL KAMEI, PHD; ZACHARY TAYLOR, PHD; DANIEL BRADBURY

Intraocular Robotic Interventional Surgical System for Cataract Removal

TSU-CHIN TSAO, PHD; JEAN-PIERRE HUBSCHMAN, MD; JACOB ROSEN, PHD

APPLY NOW FOR FUNDING

TDG.UCLA.EDU/UCLA-INNOVATION-FUND

Up to \$200K per project awarded in 2021

March 1, 2020 Letter of Intent Due:

THERAPEUTICS TRACK

April 1, 2020 Letter of Intent Due: MEDTECH TRACK

MISSION

The UCLA Innovation Fund's goal is to more quickly move technologies from idea to the market, bridging the gap between adademia and industry/investor interest.

The UCLA Innovation Fund focuses on commercialization activities not supported by basic research grants, solicits feedback from external industry/investors and provides dedicated project management.



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

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