Innovation Update | Winter 2021

Calling All Innovators! Here’s What’s Happening in Our Community

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Dear UCLA Health Community and Supporters,

Our nation continues to face the challenges and suffering of a double pandemic – one the result of systemic racism; the other the COVID-19 pandemic. It’s clear to see that innovations in science, medicine and technology – and how they relate to equitable care – are now more important than ever. Despite the fatigue, frustration and fear that we and our communities face, there have been more than just glimmers of
hope. Vaccines, improved therapeutics, the development of new ways to provide medical care – these and many other advancements represent a turning point that I believe will carry us into a brighter 2021. The resiliency we’ve all shared – and that of our colleagues, our students and our many associates – have played a pivotal role in bringing ideas to lifesaving reality.

Collectively, we have created innovative solutions and led studies to counter the effects and the spread of COVID-19. And during the crush of the pandemic, the University of California Health System and UCLA Health, led by Dr. Michael Pfeffer, assistant vice chancellor and CIO, were early adopters of technology developed by Olive, a startup specializing in artificial intelligence products for the health care industry.

This edition of our newsletter contains several stories and news items about successes – ways in which innovative concepts have sprung to life through collaboration and multidisciplinary perspectives focused on solving problems. Our feature on the Biodesign Accelerator Track project of Dr. Tamara Grisales and Dr. Leena Nathan is an exemplar of interdisciplinary collaboration to advance under-addressed needs in women’s health. Others follow.

I hope you’ll enjoy this edition of our newsletter and these stories that remind us what we’re all striving for: revolutionizing health care to solve problems and improve the lives of our patients and communities. Contact me at dhorsegrant@mednet.ucla.edu if you have any questions or ideas for future stories.

Wishing you the best this year!

Desert Horse-Grant
Senior Director, UCLA Health Research & Innovation
Co-Executive Director, UCLA Biodesign

2021 UCLA Health Innovation Challenge: Deadline Extended! Entries for Health Equity and Greatest Idea Categories Now Due March 3

Calling all faculty, staff, trainees, patients, caregivers, volunteers and UCLA students!

Life in the pandemic has been hectic for everyone, so the 2021 UCLA Health Innovation Challenge will now accept applications until March 3 in the Health Equity and Greatest Idea categories.

Winners will be awarded prizes of up to $50,000. Here’s what we’re looking for:

- Health Equity – This is a new category that gives applicants a chance to tackle challenges related to Health Equity. Vulnerable populations may include people who are economically disadvantaged, racial and ethnic minorities, the underinsured or uninsured, the elderly, the unsheltered, those with chronic health conditions, those who are
differently abled, those in need of mental health services, those in rural areas with limited access to care and more.

- Greatest Idea (Sustainability and Wellness) – Applicants will address COVID-19 Reduction or Employee Wellness ideas that focus on processes and practices to reduce clinical care provider burnout, improve practice efficiency and/or establish a culture of support and collaboration.

Check out this video for more information. Good luck!

UCLA Biodesign Accelerator Track Spotlight: How Biodesign Collaborations and Resources Are Moving a MedTech Concept Toward Reality

Dr. Tamara Grisales and Dr. Leena Nathan, UCLA Health specialists in obstetrics and gynecology, wished they had a better way to care for some of their patients. Thanks to UCLA Biodesign’s new Accelerator Track, they are now well on the way to bringing a novel idea to life.

“This idea was really born out of conversations Leena and I had about issues that can arise with vaginal estrogen and administration of vaginal medication,” Grisales said. Although they can be used for a variety of purposes – including fertility treatments, therapy for yeast infections and treatment of vaginal atrophy – vaginal meds often present their own set of problems.

“We see women of all ages having issues related to the use of vaginal medication. It can be messy, painful, difficult to insert and hard to remember to use,” said Grisales, assistant clinical professor in the Division of Female Pelvic Medicine and Reconstructive Surgery.

What's needed, the doctors thought, is an easy-to-handle product made from an absorbable material combined with medication.

“For a woman with bacterial vaginosis, we intend to have it last for about a week because that should be plenty of time for treatment, but for chronic conditions like vaginal atrophy or infertility, we want it to work long term, like 80 or 90 days,” said Nathan.

But knowing what was needed was just a start.

“Clinicians have ideas all the time – we see things that don’t work as well as they could. But without a mechanism like the Biodesign program and the kinds of resources for innovation that we have at UCLA Health, these ideas have a tendency to just stall out,” Grisales said.

The two physicians reached out to Desert Horse-Grant, co-executive director of UCLA Biodesign, who connected them with Dr. Song Li, chair of Bioengineering at the UCLA Samueli School of Engineering.
“The momentum picked up from there,” Nathan said. “Historically, women’s health hasn’t gotten the attention it deserves. The need may have been recognized, but there were other needs receiving priority. I think now is a good time to advance women’s health. There’s a real emphasis on funding women’s health and researching women’s health, so we’re fortunate in that sense.”

The doctors’ idea – an absorbable polymer device that can elute drugs over a period of days, weeks or even months – garnered a 2019 UCLA Health Innovation Challenge grant, which is how medical expertise, regulatory insight and bioengineering know-how came together to set the creative process in motion. Development of a prototype is currently in progress through the work of Li and Mahdi Hasani, PhD, a project scientist at UCLA Bioengineering.

“The Accelerator Track put us in touch with the right people at UCLA to understand the process to communicate with the Food and Drug Administration. We’re in the process of preparing our pre-IND (investigational new drug) briefing packet, which is a step toward proceeding with early feasibility studies,” Nathan said, adding that Marlene Berro, director of FDA Affairs at UCLA, has been instrumental in coordinating the process.

“The Biodesign Accelerator Track is one part of a path that provides resources that can be engaged and leveraged to help faculty with interesting ideas bring them forward,” said Horse-Grant. “They can get connections to engineers or professionals in business and industry, they can seek seed funding from UCLA Health, they can mature their projects over the course of a year with UCLA Biodesign in one of two tracks, and then they can compete for the campus-wide UCLA Innovation Fund, as Leena, Tamara and Song did. The fund gives up to $200,000 at or near the time of patent. Then in time we have accelerators and other contacts to propel their technology through additional stages of development.”

Li, who has long promoted collaboration among engineers and clinicians, is one of the faculty directors of a new one-year, on-campus Master of Engineering professional-degree program. He said he thinks this drug-delivery project “is a good model for us to continue having more collaboration in the future.”

Nathan and Grisales agree. “There’s so much that we as clinicians don’t know about the process,” Nathan said. “That’s where it has been very helpful to be a part of the Accelerator Track which teaches us how to bring an idea to life and into the lives of our patients.”

**UCLA Biodesign Accelerator Deadline Is Coming Soon: When to Apply – And Reasons Why (From Two Researchers Who Know)**

The deadline to apply for the UCLA Biodesign Accelerator Track is Feb. 14, 2021 at 5 p.m. PT. The track requires five hours per month (unlike the Biodesign Discovery track, which is a year-long, needs-finding fellowship), and is designed for faculty and staff who have a well-developed idea to speed along. It enables clinical entrepreneurs or technical innovators at UCLA with established concepts to complete their work at an accelerated trajectory with the guidance of industry mentors and Biodesign faculty.
Timothy Deming, a professor in the UCLA College of Chemistry & Biochemistry and previous chair of the Department of Bioengineering, who has a PhD in chemistry and specializes in organic materials, and Dr. Michael DeLong, a UCLA Health plastic surgery resident, have been working on a project to develop novel aesthetic medical technologies. Deming’s laboratory invented the materials they are using and Delong is responsible for identifying promising clinical applications.

"While we had general scientific, clinical and regulatory experience, we felt that we were relatively naïve to the complexity of the device development process. We both were fortunate enough to be selected into the Biodesign Accelerator Track this year and have been learning a tremendous amount, ranging from market analysis, to intellectual property laws and licensing, to venture capital and term sheets," DeLong said.

“The preparation we received from the Accelerator Track we feel helped us win the UCLA Innovation Fund this year, and we are excited to see what’s next on the horizon," he added. “We would strongly recommend anyone interested in medical device development to apply for both of these opportunities!"

UCLA Health Recruiting for 26 COVID-19 Clinical Trials

As a leading academic health system that regularly treats patients with infectious diseases and other complex illnesses, UCLA Health is uniquely positioned to support the fight against COVID-19. Currently, the health system is actively recruiting for 26 open clinical trials. A full listing of these is available, but here are two that we found particularly interesting because of the integral role health technology plays in both.

Wearables

**TRACE COVID-19 (Tracking Electrocardiographic Changes in COVID-19)**

The TRACE COVID-19 study is investigating whether COVID-19 infection causes any changes in heart electrocardiogram (ECG) tracings that can be detected by wearable devices such as the Apple Watch. The goal is to determine whether the ECG can detect COVID-19 infection before the onset of any symptoms. Study participants will be asked to use their Apple Watch to obtain their ECG and fill out a very short survey daily. All data are de-identified (anonymized). For more details and to enroll in the study, please go to the study website: [http://tracecovid19study.com](http://tracecovid19study.com)

Remote/Home Monitoring

**Early Detection of Health Improvement and Decline through Remote Health Monitoring in COVID-19 Positive Patients and in Those With Known Exposure of COVID-19**

The main goal of this study is to evaluate and help predict decline in at-risk populations with COVID-19 or those exposed to COVID-19-positive individuals who could benefit from having a remote monitoring system in their homes to provide valuable information to their care teams.
FDA Approvals News

UCLA Jonsson Comprehensive Cancer Center at Leading Edge of Game-Changing Treatments

Year after year, the UCLA Jonsson Comprehensive Cancer Center is a powerhouse for Food and Drug Administration approvals that drive better outcomes for patients around the world, said the center’s director, Michael Teitell, MD, PhD.

Below are 2020 FDA approvals for which UCLA Jonsson Comprehensive Cancer Center was the lead institution or played a supporting role:

March: Durvalumab (Imfinzi) to treat extensive stage small-cell lung cancer. Led by Dr. Jonathan Goldman/TRIO US.

April: Sacituzumab govitecan (Trodelvy) to treat triple-negative breast cancer. Led by Dr. Sara Hurvitz.

May: Atezolizumab (Tecentriq) with bevacizumab (Avastin) combination therapy to treat unresectable hepatocellular carcinoma (HCC). Led by Dr. Richard Finn.

May: Capmatinib (Tabrecta) to treat non-small-cell lung cancer by targeting abnormalities in the MET gene. Led by Dr. Edward Garon.

May: Erlotinib (Tarceva) plus ramucirumab (Cyramza) to treat lung cancer. Led by Dr. Edward Garon.

July: Brexucabtagene autoleucel (Tecartus) CAR T-cell therapy for the treatment of adult patients with relapsed or refractory mantle cell lymphoma (MCL). Led by Dr. John Timmerman.

December: Prostate Specific Membrane Antigen PET imaging technique for prostate cancer that locates cancer lesions in the pelvic area and other parts of the body to which the tumors may have migrated. Led by Dr. Johannes Czernin and Dr. Jeremie Calais.

UCLA-spun startup Avenda Health Receives FDA Clearance for Laser Ablation System

As reported in the Los Angeles Business Journal, “Santa Monica-based Avenda Health Inc., a software and medical device company that spun out of UCLA, has received clearance for its laser ablation technology from the Food and Drug Administration.

Using a laser needle and thermal optic sensor, the image-guided system is designed to destroy soft tissue in an outpatient setting. Avenda is focusing commercialization efforts on urology applications. Chief Operating Officer Brittany Berry-Pusey is quoted in the article, saying, “Given the current strain on the health care system due to COVID-19, we believe it is vital for more therapies to move from the hospital setting to an office-based procedure.”
“Avenda Health was started by three UCLA faculty colleagues in June 2017. Two of the co-founders—Berry-Pusey and Chief Executive Shyam Natarajan—were co-founders of the UCLA Business of Science Center launched by the late businessman and innovator Roy Doumani. The third co-founder, Chief Medical Officer Leonard Marks, is a urology professor at the UCLA David Geffen School of Medicine,” the article says.

**Campus Happenings**

**Easton Innovation Challenge Sets Collaborative Processes in Motion**

CranioView, a company founded by Gabe Oland, MD; Gil Herrnstadt, PhD; Neil Parikh, MD, MBA; and Obi Emeruwa, MD, MBA, is developing technology that noninvasively measures intracranial pressure. Their efforts were boosted when they took first place in the 2020 Easton Technology Management Center’s Cross-Campus Innovation Challenge.

Second place went to Sumita Jonak, a UCLA Anderson Executive MBA student and the founder of Nur Labs, who joined forces with Owen Liang, a recent graduate student in professor Ya-Hong Xie’s lab in the Department of Materials Science and Engineering. The collaboration led to development of a new machine learning-driven platform for early detection of cancer.

Jonak and her team have applied for non-dilutive National Cancer Institute Small Business Technology Transfer funding and a National Science Foundation Innovation Corps (I-Corps) grant with Xie’s continued mentorship, and UCLA has filed pending patents for the technology. Jennifer McCaney, co-executive director of UCLA Biodesign, supervises the team’s business creation option (BCO) program.

**The UCLA Cross-Campus Innovation Challenge Team Registration Deadline is Feb. 5**

The UCLA Cross-Campus Innovation Challenge gives UCLA students a chance to solve real-world problems through technology—but the deadline is quickly approaching. Team applications must be submitted by 11:59 p.m. PT on Feb. 5.

The application form, contact information and additional information about the challenge, hosted by UCLA Easton Technology Management Center, can be found here. To compete,
each team must have three to five UCLA students, with at least one MBA student and one non-MBA student.

Good luck!

UCLA Technology Development Group Innovation Fund Applications Being Accepted

Deadline for Therapeutics applications is March 1, 2021. Deadline for MedTech applications is April 1, 2021. Details and applications are here.

Innovate Tech Conference Webinar Jan. 28 and 29

Register here for the Innovate Conference 2021, an event that brings successful entrepreneurs and executives together for a glimpse of the latest innovations and their potential impact. Webinars will begin at 5 p.m. on Jan. 28 and 9 a.m. on Jan. 29. You can choose to attend one or both.

Here’s a link to the full agenda.

Registration is Open for MedTech 2021
Tuesday, March 9, 2021, from 10 a.m.-5 p.m.
$25 Early Bird Registration

If you’re looking to build and establish relationships with like-minded innovators, the UCLA Technology Development Group, in partnership with MedTech Innovator, is hosting the 9th Annual UCLA MedTech Partnering Conference, Tuesday, March 9, 2021, from 10 a.m. to 5 p.m. While it will be presented virtually this year, the conference will continue to provide a unique opportunity for inventors, investors and industry executives to establish new relationships for furthering innovation in this field. The conference will feature exciting panels that highlight recent developments and cutting-edge technology, a demo track highlighting local innovations in MedTech, and partnering opportunities that will allow attendees to set up meetings with each other and UCLA faculty via the virtual conference platform.
Copyright-Related FAQs at UC
January 28, 2021, from 3-4 p.m.
Registration is open. The webinar is FREE, but you must register.

As inventors and innovators, do you have questions about how to copyright your work? If so, this webinar is for you. It will cover a number of copyright-related FAQs that arise from several departments on UC’s campuses such as licensing, industry-sponsored research, contracts and grants, purchasing, sales and services.

The speakers will provide insights and effective practices from both the UC system level (UC’s Office of the General Counsel), as well as the in-the-trenches campus level (UCLA’s Technology Development Group). Topics will include:

- Copyright law basics (ownership, derivative works, fair use, etc.)
- Strategies for protecting copyrightable works
- Effective practices when licensing copyrightable works
- Data in view of copyright laws
- Open sourcing copyrightable works

Knapp Venture Competition
Registration starts in March 2021
Students will receive e-mail notification regarding submission dates one month prior to the first deadline.

Have a startup idea? Want to start a business? Come learn about the Knapp Venture Competition, one of the premier academic business plan competitions in Southern California! Enter for a chance to pitch your business to a panel of judges (entrepreneurs, VCs and executives) and to win from a prize pool of $100K!

The Knapp Venture Competition is designed to provide students from UCLA Anderson and other UCLA graduate schools with an intensive learning experience in the venture initiation process. All teams must have at least one active Anderson student. Check out the competition rules here.
New One-Year Engineering Degree in Translational Medicine to Launch in Fall 2021

Dr. Song Li, chair of Bioengineering at the UCLA Samueli School of Engineering, is also one of the faculty directors of the school’s new one-year, on-campus Master of Engineering professional-degree program. MEng will launch this fall and is designed to develop future engineering leaders with both a high-tech skill set and management savvy. The program features six cutting-edge areas of interdisciplinary technological concentration, including translational medicine, which Li will be developing.

A long-time advocate of collaboration among engineers and clinicians, Li sees this as an effective way of bringing together technology and engineering to solve clinical issues.

“Clinical doctors are essentially the end users of instruments and technology, and they sometimes identify a problem and need an engineering partner to help tackle it. Engineers are trained to solve problems, so we can help them find a solution,” he said. “I think this (the UCLA Biodesign Accelerator Track) is a good model for us to continue having more collaboration in the future.”

Li’s one-year degree program is different from a traditional master’s degree. “It’s a professional degree with the goal to speed the translation of technology to clinical applications,” he said, adding that there will be opportunities for students in the program to work with clinicians on projects that have translational potential. The program will have more than 10 technical elective courses covering state-of-the-art technologies in drug delivery, tissue engineering, synthetic biology, medical devices, biomedical imaging, and computational medicine. In addition, the program offers courses on technology management and entrepreneurship.

According to Li, students will work with co-mentors or faculty and clinician-scientists and others. “It’s a very interesting way to bring together technology and engineering to create solutions to clinical problems,” he said.