The UCI professor utilizes the system to tackle pain management, anxiety, inflammation and much more.

Daniele Piomelli
Has High Hopes for the Body’s Endocannabinoid System

The UCI professor utilizes the system to tackle pain management, anxiety, inflammation and much more.
“DREAM AUDACIOUSLY. HAVE THE COURAGE TO FAIL FORWARD. ACT WITH URGENCY.”

– Phil Knight, Nike co-founder and former CEO
University of California staff who hold roles related to innovation and entrepreneurship (I&E) attend an inaugural meeting at UCI Beall Applied Innovation @ the Cove. The meeting provides an in-person platform for leaders to share experiences and best practices in an effort to advance systemwide I&E endeavors.

SoCal Startup Day / February 2020
Over 1,000 attendees listen to a panel of guest speakers discuss venture capital, angel investing and community building. The inaugural SoCal Startup Day features demos, vendors, exhibitors and panels inside and around Hangar 244 at Orange County’s Great Park in Irvine.

Orange County Celebrates Entrepreneurs / February 2020
Josh Mundell, CEO of Wayfinder startup NeighborING, shares his experiences of becoming an entrepreneur during a panel discussion at the inaugural Orange County Celebrates Entrepreneurs event held at California State University, Fullerton. The annual event brings together startup companies, investors, business leaders and academics across Southern California.

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Rebecca Riley, Ph.D. candidate in theoretical particle physics, stands with Gillian Hayes, Ph.D., vice provost for graduate education, dean of the graduate division and former CEO of AVIAA. Riley won first place as well as $2,000 and a chance to compete in the systemwide finals.

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New Women-Focused Workshop Series Starts at the Cove @ UCI

THE WORKSHOPS AIM TO HELP MORE WOMEN PARTICIPATE IN SBIR AND STTR PROGRAMS.

The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)* programs – funded through federal agencies – offer small businesses to couple research and development on projects that have the potential for commercialization. Since the inception of these programs, tens of billions of dollars have been awarded to over 100,000 small businesses. Unfortunately, women-owned organizations make up only a small fraction of companies that receive SBIR and STTR awards. In an effort to increase participation and success in SBIR and STTR programs, UCI Beall Applied Innovation recently created W.SparkSBIR, a women-focused innovation.eri.edu/programs/sbir-sttr

"Writing a first SBIR proposal can be a daunting task," said Schmid. "These workshops provide the first-time applicant with knowledge of key items that are involved in assembling a competitive SBIR proposal." In addition to Schmid, guest lecturers present on their experiences as applicants and reviewers to help attendees avoid mistakes and increase their chances of receiving awards. Learn more about the W.SparkSBIR program and register for an upcoming workshop series: innovation.eri.edu/programs/w-spar... SBIR/STTR

Resources Mentioned in This Story

New Women-Focused Workshop Series Starts at the Cove @ UCI

SBIR

innovation.eri.edu/programs/sbir-sttr

STTR

innovation.eri.edu/programs/sttr

MBOC @ UCI Beall Applied Innovation

innovation.eri.edu/mboce

"WRITING A FIRST SBIR PROPOSAL CAN BE A DAUNTING TASK. THESE WORKSHOPS PROVIDE THE FIRST-TIME APPLICANT WITH KNOWLEDGE OF KEY ITEMS THAT ARE INVOLVED IN ASSEMBLING A COMPETITIVE SBIR PROPOSAL."

Molly Schmid, Ph.D.

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Molly Schmid, Ph.D. .
GreenTech California
Bubbles Up Water Innovation

The Wayfinder Startup Advances Water Filtration with Nanobubble Technology.

While there are myths about a coveted fountain of youth or hidden treasure on the ocean floor, one thing is certain: water, itself, really is liquid gold.

The current water system, however, is less shiny. Southern California, in particular, transports water over great distances and puts it through a lengthy, expensive purification process. The result is an unsustainable reliance on chemical use, fresh water and energy consumption.

Having built two companies previously without incubators and accelerators, I appreciate the culture of an incubator and an accelerator.”

– Steve Slingsby, Ph.D.

GreenTech California (GTC), a Wayfinder startup company based on UCI technology, has found solutions in unlikely places: wastewater and nanobubbles. Co-founded and co-invented by Steve Slingsby, Ph.D., CEO, and James Earthman, Ph.D., in 2015, GTC applies nanobubbles to wastewater purification as a novel, environmentally conscious alternative to the current California water system.

The Problem: Drained Resources

Because Southern California is primarily a desert environment, the region relies on water from the Colorado River, which travels across the Southwest, into an aqueduct located in San Bernardino. From there, the water goes through a filtration process known as reverse osmosis, which requires chemicals and energy. According to Slingsby, total costs for a 10-million-gallon-per-day reverse osmosis plant can be up to $500,000 in chemicals and about $100,000 to $200,000 in electricity per year. These costs are then augmented greatly by periodic maintenance and replacement of the reverse osmosis membranes when they become clogged. Additionally, wastewater treatment relies on processes that result in sludge byproducts, which can contain pathogens, micro pollutants and heavy metals.

“A wastewater recycling facility costs a lot of money to operate,” said Eric Li, founder and CEO of BDP EnviroTech, GTC’s partner company and a tenant at the Cove @ UCI*. “So, people tend not to treat and recycle the wastewater unless they’re really under huge pressure on energy consumption.”

The Solution: Bubbles Rise to the Occasion

As a UCI professor of materials science and biomedical engineering, Earthman realized nanobubbles’ purification potential when he studied their usefulness in preventing pipe corrosion in his lab in 2007. Years later, Earthman met Slingsby, a serial entrepreneur, and they pursued nanobubbles as a water purification alternative in the form of a business venture. According to Earthman, nanobubbles naturally occur in bodies of water in small levels. GTC’s water treatment technology, the Nanobubble Generator, attaches to part of a water purification system, like a pipe, and utilizes the movement of water to produce enough nanobubbles for filtration.

“We can produce nanobubbles without any external power other than what you need to make the water move from one place to another, which is generally already occurring in a lot of systems.”

– James Earthman, Ph.D.

Having built two companies previously without incubators and accelerators, I appreciate the culture of an incubator and an accelerator.”

– Steve Slingsby, Ph.D.
that suffered breakdowns and water filtration systems in India tested their invention on three In 2017, Earthman and Slingsby $50,000 per year.

$100,000 and energy to about long-lasting and stable, GTC using nanobubbles, which are as tiny water contaminants. By maintaining positively charged negative charge, attracts and combining with one another. This, in addition to nanobubbles’ patterns, rather than float to the surface as larger bubbles. Unlike larger bubbles, nanobubbles also have an inflexible surface similar to a taut balloon, which prevents them from breaking down or combining with one another. Seeing nanobubbles, then, is impossible – they are about 10 to 100 nm in size. Their small size makes them move in random movements, which prevents them from breaking down or combining with one another. This, in addition to nanobubbles’ negative charge, attracts and maintains positively charged nanoparticles, otherwise known as tiny water contaminants. By using nanobubbles, which are long-lasting and stable, GTC could reduce chemical cost to $100,000 and energy to about $50,000 per year. In 2017, Earthman and Slingsby tested their invention on three water filtration systems in India that suffered breakdowns and limited access to potable water. Over the course of their project, the Nanobubble Generator decreased the system’s shutdowns to maintain or replace the membranes, providing cleaner water without issue.

In 2018, Slingsby asked Li’s company, BDP EnviroTech, which treats wastewater in an environmentally safe way without harmful sludge byproducts, to partner with GTC.

“By linking the two companies and the technologies, we can provide a total solution,” said Li. “The technology will dominate the entire process, enabling the water utility agencies to recycle more water for reuse.” BDP EnviroTech utilizes microorganisms to eat away wastewater contaminants—something the teams refer to as the “probiotic method.” After wastewater has gone through this process, it filters through GTC’s nanobubble treatment as the final purification step. The systems complement each other.

MAKING WAVES

Slingsby and Earthman report that the water industry is generally slow in adopting innovation. Because it handles such a valuable and necessary commodity, it is often cautious about major transitions. “Even with the credibility that comes with research, it’s still slow because there’s so much risk aversion,” said Earthman. “People just don’t like to change in this industry.”

Despite this challenge, GTC has still managed to make waves. When they joined UCI Beall Applied Innovation’s Wayfinder program in 2018, the team took advantage of experts such as licensing officers. They especially value Applied Innovation’s collaborative culture as well as its respect for disruptive technologies. “Having built two companies previously without incubators and accelerators, I appreciate the culture of an incubator and an accelerator,” said Slingsby. So far, the company’s local and international reach has been its greatest accomplishment. The California State Water Resources Control Board awarded GTC and BDP EnviroTech $370,000 to demonstrate the benefits of recycled water to local and state governments.

GTC has also been in contact with the global water company SUEZ and BDP EnviroTech works with the major infrastructure firm Vinci globally. The team hopes to work with them to build a global presence. In the future, GTC wants to find more grant and funding opportunities and work on research and development while at the university.

Learn more about GTC: greentechcalifornia.us/about

How Nanobubbles Can Clean

Many Nanoparticles are rapidly attached to each Nanobubble to form a NanoCluster (NC). NCs are formed with sizes of approximately 500 - 1000 nm. NCs are not ‘sticky’ and therefore sluff off of Fine Filters & Reverse Osmosis (RO) Membranes. NANOBUDDLES

Nanobubbles depicted in the illustration are magnified by 10,000.

The Differences Between Nanobubbles and Normal Bubbles

Nanobubble Normal Bubble

<table>
<thead>
<tr>
<th>SIZE</th>
<th>&gt;100,000 nm</th>
<th>&lt;10-100 nm</th>
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<tr>
<td>MOVEMENT</td>
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Source: lsbu.ac.uk/water/nanobubble.html#bubbles

Graphic by: Vivian To

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“Resources Mentioned in this Story

Wayfinder innovation.uci.edu/programs/wayfinder-incubator
Cove @ UCI innovation.uci.edu/the-cove

Licensing Officers

innovation.uci.edu/about/research-translation

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Tech Transfer & Licensing Officers* They especially value Applied Innovation’s collaborative culture as well as its respect for disruptive technologies. “Having built two companies previously without incubators and accelerators, I appreciate the culture of an incubator and an accelerator,” said Slingsby. So far, the company’s local and international reach has been its greatest accomplishment. The California State Water Resources Control Board awarded GTC and BDP EnviroTech $370,000 to demonstrate the benefits of recycled water to local and state governments.

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Graphic by: Julie Kennedy & Rthura Cevallos

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Everyone has one and, despite
the name, it’s far from green and
does not show up on a drug test.
Enter:
the body’s endocannabinoid system.

This signaling system is found in
the brain and throughout the body,
and is responsible for regulating
and balancing many processes,
including neurotransmission,
immune response, hunger and
metabolism, and memory.

Since 1992, Daniele Piomelli, Ph.D.,
UC Irvine (UCI) distinguished
professor of anatomy and
neurobiology and Louise Turner
Arnold Chair in the Neurosciences,
has worked toward unlocking
the full potential of the complex
endocannabinoid system while
simultaneously searching for the
right business partner who will apply
his long list of endocannabinoid-
related technologies and research
to their full potential.

For Piomelli, success involves
solving a biological problem,
advancing health through the
discovery of new medicines and
improving the economy by creating
new jobs. His lab at UCI’s Gillespie
Neuroscience Research Facility
uses the endocannabinoid system
to solve medical problems such as
chronic pain and post-traumatic
stress disorder (PTSD).

“We know that the endocannabinoid
system, both in the central nervous
system and outside the central
nervous system, plays very
important roles in regulating stress
and pain perception,” said Piomelli.

“...IF WE DON’T INVEST MORE IN
PHARMA, WE’RE NOT GOING TO HAVE
MEDICINES TO HELP WITH GIGANTIC
PROBLEMS LIKE PAIN, PTSD, ADDICTION
AND DEPRESSION. DO WE WANT TO BE
THAT SOCIETY? I DON’T THINK SO.”
– Daniele Piomelli, Ph.D.
Enzymes degrade lipids, which then creates molecules that activate all cannabinoid receptors," said Piomelli. "But the endocannabinoid system is much more subtle. You can tweak it, you can block the receptor, you can modulate the receptor using endogenous molecules."

Learning to regulate the body’s endocannabinoid systems for therapeutic potential is what now drives most of his research, and cannabis helps his lab understand how the system works. "There is literally no organ system in the body that does not have it and there are very few organ systems in the body where it’s not important," said Piomelli.

"You eat it, you smoke it, you ingest it, you can block the receptor, you can modulate the receptor using endogenous molecules." Learning to regulate the body’s endocannabinoid systems for therapeutic potential is what now drives most of his research, and cannabis helps his lab understand how the system works. "There is literally no organ system in the body that does not have it and there are very few organ systems in the body where it’s not important," said Piomelli.

WORKING THE SYSTEM
In the Center for the Study of Cannabis at UCI, the lab is discovering that endocannabinoids are fundamental to energy and metabolism. According to Piomelli’s research, the endocannabinoid system is an extremely important controller of body weight and metabolic health.

"The problem is that when you block the endocannabinoid system in the brain, you become anxious, you become aggressive, you start having pains and aches, and you may even have suicidal ideations and stuff like that, because of the role it plays in mood," said Piomelli. However, the opposite is true if the system is boosted.

"If we find a new anti-anxiety medicine, that would be really important, particularly for conditions like post-traumatic stress disorder, which are currently not treated at all," said Piomelli.

Piomelli received grants from the National Institutes of Health to study the potential of endocannabinoid boosting drugs for pain relief and reduce the use of opiate-based drugs.

Piomelli is currently focused on three specific enzymes that can be reconfigured with the help of molecules to act as inhibitors, fatty acid amide hydrolase (FAAH), N-acylethanolamine-hydrolyzing acid amidease (NAAA), and acid ceramidase. From these three classes of inhibitors, Piomelli has created pharmaceuticals that are tweaked within the endocannabinoid system to help suppress pain, inflammation, appetite, anxiety and depression.

COMMERCIALIZING IT
Piomelli’s FAAH inhibitor technology is utilized through a Canadian startup company he co-founded, Exxel Pharma, where he is also the chief scientific officer, primarily consulting for the company.

Exxel Pharma focuses on the development of small-molecule therapeutics for safe, non-addictive treatment of pain, PTSD and substance use disorders, such as opioid addiction.

"I’ve gotten to work closely with Dr. Piomelli since we co-founded Exxel and have very much enjoyed our partnership,” said Soren Mogelvang, Exxel co-founder and CEO. “Daniele is great scientist, and a passionate and eloquent advocate of our therapeutics. He gets the bigger picture of drug development and has done a terrific job of de-risking the therapeutic, which speeds up the commercialization process.”

Exxel Pharma plans to focus on the clinical development of pain management therapeutics and will begin phase one of human clinical trials in fall 2020.

Piomelli has also licensed another group of inhibitors to a company that focuses on chemotherapy-induced inflammatory pain and has additionally licensed another enzyme company that is interested in treating Parkinson’s disease.

Each of the three inhibitors represent endocannabinoid-boosting drugs for pain relief. They play a vital role in discovering how the endocannabinoid system can be tweaked, and have led to the discovery of other molecules that affect neurological diseases.

"The enzyme inhibitors destroy one of the ancillary endocannabinoid molecules and has profound anti-inflammatory effects, so we made a bunch of molecules that block it," said Piomelli.

These molecules were licensed to a company that was funded and run by a venture capitalist group based in Boston that utilized only a small portion of this technology’s potential.

"It’s like they went into a watermelon and didn’t take the juicy part," said Piomelli. "It is the reddest part," said Piomelli.

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Although he was disappointed in this particular company’s use of his technology, Piomelli has received the patents and is seeking ways to move this technology back into the marketplace.

LOOKING FOR THE GREEN LIGHT
The growing market trends toward utilizing cannabis and cannabidiol (CBD) for profit has left Piomelli frustrated and wary of finding a business partner who is not interested in getting a quick buck from his technology. Piomelli is not interested in being first-to-market within cannabis spaces; instead, he is more focused on finding the right business partner who, like Piomelli, has a more thoughtful approach to creating a business with his technology and understands the importance of research translation and regulations.

"What matters is that you need to learn how to navigate those regulations," said Piomelli. "You need to learn how to translate what you find in the lab into something that can be used in people. That translational component is the hardest to find and is also very hard because you would like to have a business partner who actually is on your side.”

For now, Piomelli aims to find a trustworthy company who will utilize his technologies to their fullest potential. And all the while, Piomelli continues to cook up more uses from the body’s endocannabinoid system in his lab and supports Exxel Pharma in their steps toward human clinical trials.

"Engineering investments are what they are and the return is a lot more predictable," said Piomelli. "But if we don’t invest more in pharma, we’re not going to have medicines to help with gigantic problems like pain, PTSD, addiction and depression. Do we want to be that society? I don’t think so."

Learn more about UCI’s Center for the Study of Cannabis: cannabis.uci.edu ||
Startup ideas come in all shapes and sizes. And the ANTrepreneur Center is ready and waiting for those innovative ideas from great UCI minds.

Under UCI Beall Applied Innovation and UCI Division of Undergraduate Education (DUE), the ANTrepreneur Center provides UCI students from all disciplines free mentorship, learning opportunities, resources to develop business ideas and connections to the greater Irvine entrepreneurial network.

Jaune Odombrown, ANTrepreneur Center manager, wants to capitalize on the ANTrepreneur Center’s potential as UCI’s on-campus and virtual innovation hub for students – a vision that began with the Center’s partnership with DUE in 2014.

“We’re looking to partner and collaborate,” said Odombrown. “DUE is going to always be there to support undergrad education and finding ways to work with our incoming student body as well.”

The ANTrepreneur Center is a resource available to any UCI student who wants to begin their entrepreneurial journey. The ANTrepreneur Center focuses on the ideation and research and production stages of a business, allowing students to brainstorm and collaborate for the best product possible.

After the ANTrepreneur Center joined forces with Applied Innovation in 2017, there has been a concerted effort for the ANTrepreneur Center to leverage DUE’s network. With this decision,
iPhone or Android. Why?

Would you rather go on a safari or a surf trip?

Have you ever seen any bears?

Jordan Odombrown, an ANTrepreneur Center manager, guides UCI students at the ANTrepreneur Center to push their startup ideas to the next level. The ANTrepreneur Center can utilize DUE’s better network with undergraduates, its target demographic. Along with outreach efforts, this partnership has provided better access to student interns who help run the ANTrepreneur Center.

“Working with Jaune at the ANTrepreneur Center has been instrumental in identifying more opportunities to grow my startup, StartLlart,” said Caitlyn Yang, UCI mechanical engineer major. “Through mentoring sessions, networking with other entrepreneurs and listening to their stories, and discussing potential partnerships, I find that the ANTrepreneur Center is an amazing resource to any student with an idea.”

Currently, students can take the Experiencing Entrepreneurship Program (E2) for the first five weeks of each quarter at the ANTrepreneur Center, a building formerly known as the Phineas Banning Alumni House until April 2020. For two hours a day, Odombrown offers guidance on the various aspects of entrepreneurship, such as growing ideas into a business. Odombrown will also offer Pitch Clarity: Learn to Pitch Anything, a class that educates students on effective business pitch delivery.

“I’m removing barriers for students when it comes down to knowledge and access to entrepreneurship resources,” said Odombrown.

“They have a partner in me and my team at the center until we find them partners.”

The ANTrepreneur Center is also available to UCI student groups. Manifest at UCI, a student club that cultivates an entrepreneurial community, uses the ANTrepreneur Center for their meetings and often introduces Odombrown to their new members. The Biomedical Engineering Society takes advantage of the small Maker’s Lab available in the building. Student startups use the space as well — all with ideas from a variety of business sectors like travel packages, bike technology and social media sites.

UCI startup Recreate Energy, a biofuel company that provides compatible renewable fuels for gas and oil companies, recently celebrated success at the ANTrepreneur Center.

“The ANTrepreneur Center has been pivotal in the success of Recreate Energy,” said Daniel Vega, UCI mechanical engineer major. “Through mentoring, I found the ANTrepreneur Center. It has provided me a workspace and venue to recruit team members to begin development of our system and has also connected me to a vibrant community of entrepreneurs I can seek help from.”

As the ANTrepreneur Center continues to add new resources for curious undergraduate students, Odombrown hopes to make it the starting point for every UCI student entrepreneur.

Learn more about the ANTrepreneur Center: antrepreneur.uci.edu

Outside of classes and seminars, the ANTrepreneur Center will host guest speakers who will discuss their experiences in the business sector. Odombrown is also available for scheduled meetings to discuss an idea, pitch, business plan or product.

Interested students can visit antrepreneur.uci.edu for more information.

"*Resource Mentioned in This Story
Experiencing Entrepreneurship Program (E2) antrepreneur.uci.edu/programs/experiential-entrepreneurship

With David Thai

David Thai, IT service manager at UCI Beall Applied Innovation, can be found anywhere throughout the Cove @ UCI making sure audio, screens, computers and other tech gadgets run smoothly for staff, teams, Cove Partners and guests. When he isn’t rushing around the Cove, Thai can be found mountain climbing or, even, spotting a bear in the city.

Q: iPhone or Android. Why?

Definitely Android. Apple products are not bad. They’re not as innovative as I’d like them to be. I feel with the Android, you can tinker more. You can install applications that aren’t commonly allowed on the iOS. It’s not as restrictive. It’s not a closed ecosystem.

Q: Would you rather go on a safari or a surf trip?

Safari. I hate the beach. The coastal beach is nice; it’s scenic. I don’t really like stepping into the sand or the ocean. I do not want to swim. I do not want to scuba dive. I’m more of a mountain bike guy. So, I will jump in the lake. I will hike for a while, I will climb. I think it’s more scenic than the beach. That’s just me.

Q: Where are your favorite places to hike or camp?

I do like going along the US 395. There’s Lone Pine, Big Pine, Bishop, Mammoth. Mammoth is a nice place. I usually go there and to Yosemite to ski, camp or backpack.

Q: Have you ever seen any bears?

Yes. Actually, in Mammoth. It was just roaming around the city at night. I’ve seen bears in Yosemite as well. I haven’t had one that’s gone close to me. It’s always been 50 feet away. They typically keep to themselves unless you have food.

Q: Who is your greatest inspiration?

I want to say my mom, but that sounds corny. But it is my mom. I aspire to be just like her. She’s just patient and loves unconditionally. She’s just always there. She’s always patient, always loving. She doesn’t judge. She’s just mom. She’s just amazing."
Money is the lifeblood of entrepreneurial endeavors. Whether a company is just starting out or looking to grow, they will often require money to get to the next step. If founders can't fund the growth internally, they may choose to apply for grants or loans, or look to angel investors or venture capitalists (VCs) to invest money in exchange for equity. What some founders might not realize is that the right investor can offer additional benefits that go beyond investment dollars. This is known as “smart money.”

Read on to learn additional benefits of working with smart money.

**EXPERIENCED INVESTORS BRING MORE TO THE TABLE THAN JUST A CHECK.**

There is no one-size-fits-all solution for startup funding, so it is incumbent upon entrepreneurs to seek guidance before pursuing any sort of funding opportunity. That said, experienced investors who share their knowledge, guidance, networks and resources with their startups can be a great asset.

Learn more about funding opportunities and other resources and services available through UCI Beall Applied Innovation: innovation.uci.edu/resources

**INSIGHTS**

VC firms and experienced angel investors build their portfolios by working with many startups, so it’s no secret that they have seen countless companies succeed and fail. Budding startups can leverage investors’ years of experience to get answers to problems they might be facing and avoid pitfalls.

**RECRUITING**

Smart money investors usually have large networks and portfolios, so they have access to large pools of people. Startups can look to their investors for help recruiting someone with a particular skill set who might be otherwise hard to find.

**MORE FUNDING**

Having the right investor can have lasting positive effects for a startup’s financial future. Smart money can spread the word to get other investors involved, provide startups with investor leads to follow up on, or even continue to invest in later funding rounds.

**PROMOTION**

When smart money invests in a company, they are interested in the long-term success of that company. With that said, a good investor can be a company’s biggest evangelist by promoting and sharing it with new investors, customers and markets.

**ASSISTANCE**

Startups often have to make tough decisions, whether they’re restructuring, pivoting or establishing strategic partnerships. Startups can leverage the business acumen of their investors to best navigate tough decisions and be the driving force behind a necessary action.

**INTRODUCTIONS**

Much in the same way that smart money can help with personnel recruiting, good investors can also use their networks to make connections. When a startup is looking for business or strategic partnerships, an investor’s network might be utilized to the benefit of the startup.

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It’s not uncommon for entrepreneurs to lack executive leadership skills. Because experienced investors regularly work with all types of leaders and leadership styles, they can share best practices with entrepreneurs to help them be the best leader for their company.

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SCHOOL OF EDUCATION
UC Irvine recently launched the Online Learning Research Center (OLRC), directed by Professor Di Xu and Professor Mark Warschauer, some of the field’s top researchers, the OLRC will provide evidence-based resources, materials and guidelines for online learning.

SCHOOL OF LAW
For the first time in UCI history, the University of California, Irvine School of Law Review–a student-run and edited journal–has elected an all-female executive board.

SCHOOL OF MEDICINE
UCI researchers published the first comprehensive overview of the major changes that occur when mammalian skin cells begin wound healing. The study forms an outline for research on conditions with poor wound healing, like diabetes.

DONALD BREN SCHOOL OF INFORMATION & COMPUTER SCIENCES
Computer Science Professor Chen Li’s team has developed CoronavirusTwitterMap, an interactive visualization and analytics tracker of coronavirus-related tweets in real-time. They hope to add case numbers by region and online sentiments as well.

SCHOOL OF PHYSICAL SCIENCES
Associate Professor Steven Davis co-authored a study on ground ozone’s negative effects on plants like almonds, grapes and nectarines. The research uncovered that California’s strict air quality standards reduce ground ozone levels and increase crop yields.

INDUSTRY COLLABORATION
AgeX Therapeutics Sponsors Research and Options UCI Tech

THE BIOTECH COMPANY WORKED WITH INDUSTRY SPONSORED RESEARCH AND RESEARCH TRANSLATION GROUP TO USE THE TECHNOLOGY TO PROGRESS CELLULAR THERAPIES TO TREAT HUNTINGTON’S DISEASE.

UC Irvine (UCI) recently entered into a sponsored research agreement and an option agreement with AgeX Therapeutics, a biotech company that develops therapeutics for aging and regeneration.

Under the sponsored research agreement, Leslie Thompson, Ph.D., UCI Chancellor’s Professor of Psychiatry and Human Behavior, will use AgeX’s PureStem® technology to develop neural stem cells with the goal of developing cellular therapies to treat neurodegenerative disorders and diseases, such as Huntington’s and Alzheimer’s.

“The goal of the technology is to improve and create a higher scale manufacturing process to enable clinical trials of human neural stem cells as a potential treatment for Huntington’s,” said Thompson. “Injection of neural stem cells into the brain has shown significant benefit in Huntington’s disease mouse models.”

UCI Beall Applied Innovation’s Industry Sponsored Research (ISR)* team handles agreements involving research funded by or through for-profit industry sponsors. Chris Abernethy, ISR industry contract officer, worked with Thompson to develop the proposal for the research project developed by AgeX.

After the company had expressed interest in working with Thompson to develop cell therapies for neurological disorders and diseases, Applied Innovation’s Research Translation Group (RTG)* team was looped in to help facilitate. RTG helps university faculty, physicians and researchers understand and navigate the translation of their discoveries.

“The ISR and RTG teams are so incredibly helpful,” said Thompson. “They explained the UC-wide regulations and addressed the faculty and research needs while also coming up with creative ways to address the company’s needs, as well. They have a broad perspective from a UC standpoint and this sponsored research agreement wouldn’t have moved forward without their help.”

Casie Kelly, RTG assistant director of licensing, also facilitated the contracts needed for the collaboration, including the sponsored research agreement and an option agreement with the company.

“How was Beall Applied Innovation involved?”

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Find out more information about licensing opportunities at Applied Innovation:

tech.uci.edu/industry-resources/available-technologies

Resources Mentioned in this Story

Industry Sponsored Research (ISR)
innovation.uci.edu/about/industry-sponsored-research

Research Translation Group (RTG)
innovation.uci.edu/about/research-translation

MAY 2020 / UCI BEALL APPLIED INNOVATION / RISING TIDE
UCI Beall Applied Innovation is a dynamic, innovative central platform for the UCI campus, entrepreneurs, inventors, the business community and investors to collaborate and move UCI research from lab to market.

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