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The CENTENNIAL Campaign for UCLA

Mr. and Mrs. James L. Bruin
Address

Dear Phyllis and Jim,

Your extraordinary generosity to UCLA continues to be a tremendous source of inspiration for our campus and community. We're very proud of the enduring legacy you have built here.

Your landmark campaign gift, in particular, has enabled advancements whose impact will be felt at UCLA and around the world for years to come. The work being performed at the Bruin Labs for Neurodegeneration and Brain Health, as well as the Mary S. Bruin Center for Alzheimer's Disease Research, holds the potential to transform how we understand and treat neurological diseases. The Bruin Center for Innovation at UCLA Samueli and the Bruin Center for Technology Management at UCLA Anderson are positioning our students and faculty to make meaningful differences in the aerospace and high-tech industries, as well as the NFL. And our magnificent Bruin Stadium—a beloved campus landmark—continues to be home to UCLA's 11-time NCAA champion softball team.

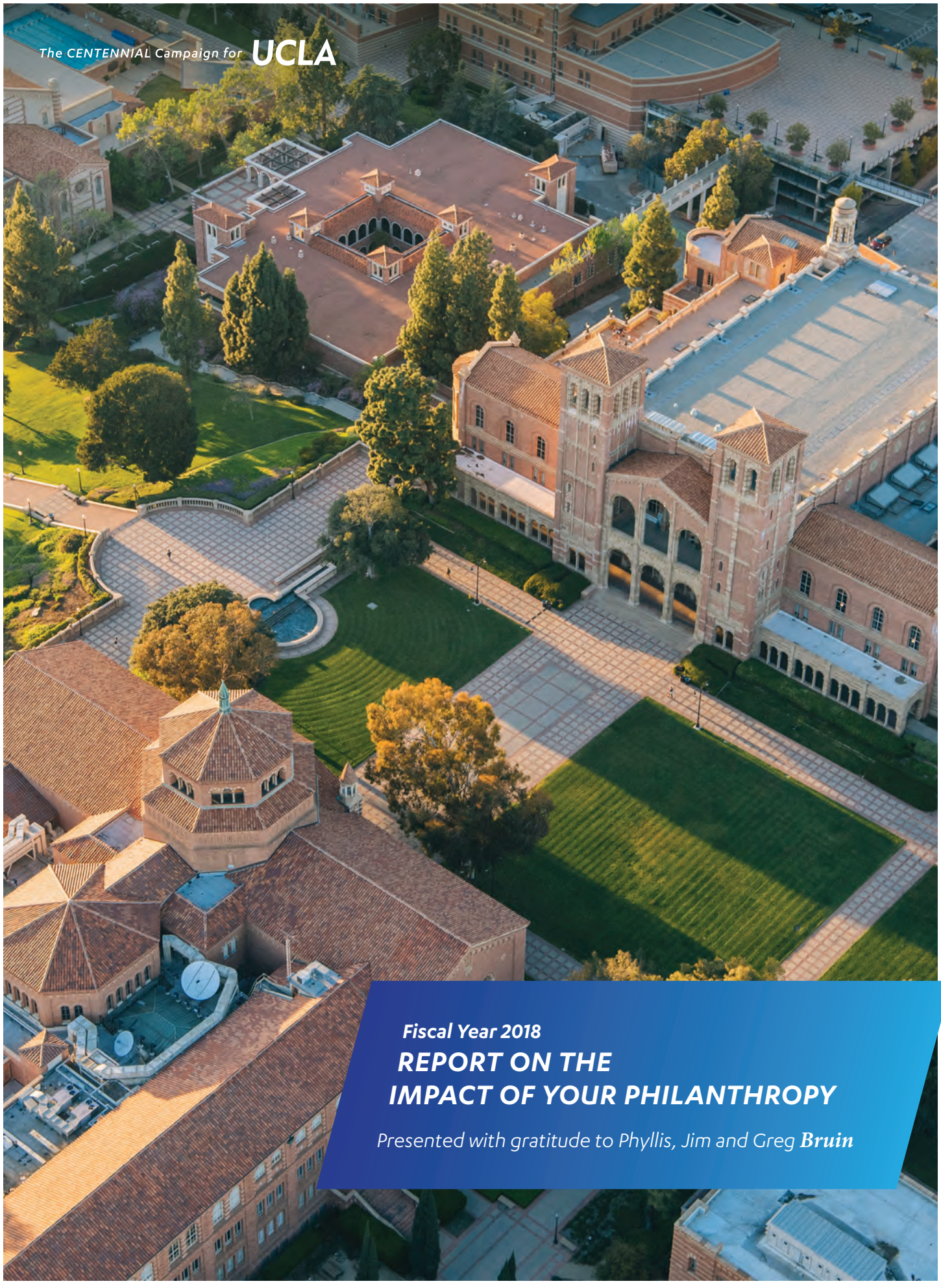
The report that follows showcases some of the many projects and achievements your gift has made possible this year. We hope you'll also enjoy the enclosed DVD from Coach Kelly Inouye-Perez and the incredible Bruins who continue to elevate our softball program to new heights.

With immense gratitude for your leadership, partnership and friendship,

Rhea Turteltaub
Vice Chancellor, External Affairs

cc: Gregory J. Bruin

After Always
Enclosed Copy
to see you soon
After Labor Day!



Fiscal Year 2018

REPORT ON THE IMPACT OF YOUR PHILANTHROPY

Presented with gratitude to Phyllis, Jim and Greg ***Bruin***

TABLE OF CONTENTS

Bruin TECHNOLOGY MANAGEMENT CENTER

The **Bruin** Technology Management Center continues to offer innovative educational opportunities that reflect the incredible diversity of research being conducted across campus. In May, for example, MBA and M.D. students in Professor Jennifer McCaney's Healthcare Technology class were transported out of the classroom and into the operating room, where they were able to perform virtual surgical procedures. David Geffen School of Medicine graduate Justin Barad, CEO and co-founder of Osso VR, and Brennan Spiegel, a UCLA professor of medicine and of public health who organized the inaugural Virtual Medicine Conference at Cedars-Sinai Medical Center, provided students with the opportunity to experience some of the technologies that they believe will meaningfully enhance patient experiences and outcomes.

This was the fifth year in which the **Bruin** Center offered the Healthcare Technology class, which Professor McCaney created to address the convergence between digital and medical technologies in a business-centered context. "Healthcare technology addresses a critical gap in technology education. We bring the case study to the classroom and integrate technology into the student experience," she said. "Students hear directly from the founders and entrepreneurs disrupting medicine and through their experience interacting with digital platforms can become the true conductors of healthcare innovation."

Photo credit: OssoVR

Dr. Barad, who is a practicing pediatric orthopedic surgeon and has raised $2.4 million in funding for his surgical training program, adds, "Innovation begins with great technology, but in order to then successfully bring a solution to patients one must be able to successfully commercialize their technology. Professor McCaney's class uniquely combines these three disciplines—medicine, technology and business—in a stimulating and innovative environment. Her students are what gives me confidence that we will continue to make progress towards solving humanity's most challenging medical problems."

The month before, the **Bruin** Technology Management Center worked with Biotech Connection Los Angeles to organize a panel on digital health and wearable technologies. More than 120 attendees came to UCLA Anderson to learn about issues surrounding the potential and possible challenges related to digital healthcare. The panelists, below, spoke about the new technologies they are pursuing, as well as how to educate investors and seek mentors.

- Mona Sobhani, Ph.D., a senior manager and research lead at the USC Center for Body Computing, summarized a study aiming to understand user engagement in wearable products.
- Jorge Nieva, M.D., an associate professor of clinical medicine at the Keck School of Medicine of USC, launched wearable technology that can measure the physical performance of cancer patients to help physicians make the best decisions for their care.
- Wen Dombrowski, M.D., MBA, the chief convergence officer of CATALAIZE, introduced the company's vision in connecting technology innovators, industry and investors.
- Anthony Gonzales, MBA, M.Sc., co-founder of Force Impact Technologies, developed a mouth guard called FITGuard to offer early detection of concussions.

Attendees also had the opportunity to network with exhibitors Biostar Technology and the UCLA Technology Development Group.

Photo credit: OssoVR

Also during the spring of 2018, UCLA Anderson began a highly anticipated renovation of Gold Hall's Jim **Bruin** Global Connection Classroom. The high-tech teaching facility received upgrades including a retrofitted lectern and a new core and configuration for the audiovisual system that enabled remote management and automation. UCLA Anderson also rolled out a basic version of the new touchscreen user interface and deployed the custom-designed touchscreen user interface. Following the conclusion of the second phase this summer, the school will have installed appropriate room signage, a ceiling microphone system, tabletop power modules and a timer. Other plans include replacing the classroom's projectors, monitors, lecture capture system and remaining A/V components; repositioning projectors, projector screens, front speakers and the lectern for better sight lines; and integration with the event management system that will allow for automated room reservations and lighting control.

With these improvements, the Jim **Bruin** Global Connection Classroom will deliver the rich learning experience that is a hallmark of UCLA Anderson. The facility will truly be a model teaching classroom that will showcase the school's technology resources.

Bruin STADIUM

All of us at UCLA are proud that, thanks to your generosity, our magnificent **Bruin** Stadium is once again a jewel of the campus. The new state-of-the-art scoreboard, in particular, has significantly enhanced the game experience for fans as they cheer on UCLA's 11-time NCAA champion softball team.

In November 2017, Head Coach Kelly Inouye-Perez announced the nation's No. 1 recruiting class. One member of that group, Megan Faraimo, was the Gatorade National Softball Player of the Year as a high school senior, the third time in the past four years that an incoming UCLA freshman has earned that honor. Faraimo will start for UCLA during the 2018–19 season.

UCLA Softball finished the 2018 season with an overall record of 58-7 (20-4 in the Pac-12) and a fourth consecutive appearance in the Women's College World Series. For the third year in a row, **Bruin** Stadium hosted the NCAA regionals, and UCLA advanced by defeating Sacramento State, Texas State and Cal State Fullerton. UCLA went on to win the super regionals, also held on our home field, sweeping the University of Arizona to earn a trip to the College World Series in Oklahoma City. The Bruins' season ended with two losses to the eventual champion, Florida State University.

The 2018 UCLA Softball squad received numerous awards and honors. Rachel Garcia, a redshirt sophomore pitcher, received the prestigious Honda Award, given to "the best of the best in collegiate athletics." Garcia was also named college player of the year by USA Softball, the National Fastpitch Coaches Association (NFCA) and ESPNW, selected as Pac-12 Conference Player of the Year, and named to the Women's College World Series team, NFCA All-America first team, NFCA All-Region first team and All-Pac-12 first team. She earned multiple NFCA National Pitcher of the Week, USA Softball National Player of the Week, NFCA National Player of the Week, Pac-12 Pitcher of the Week and Pac-12 Player of the Week honors.

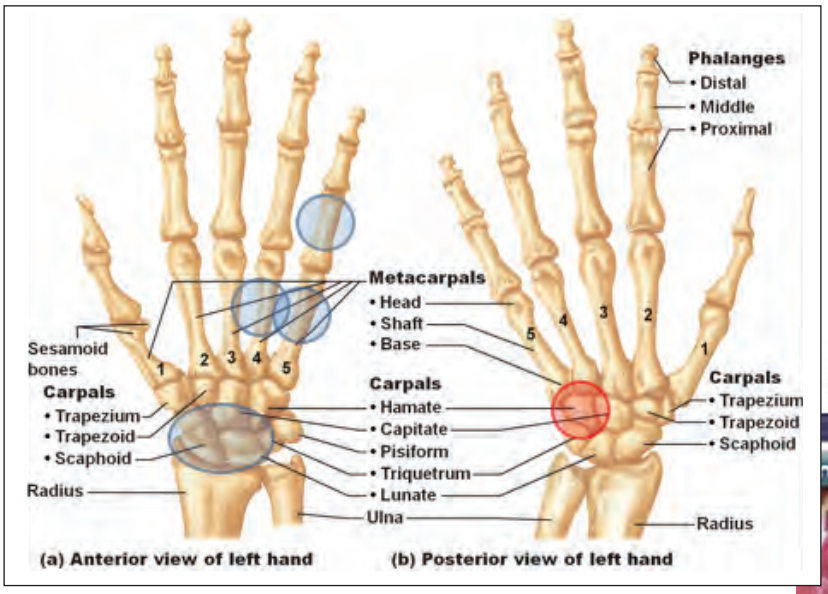
Redshirt freshman outfielder Aaliyah Jordan also was named to the NFCA All-American first team, and senior infielder Kylee Perez was named All-American second team. Junior catcher Taylor Pack and sophomore Bubba Nickles joined Garcia as Women's College World Series All-Tournament Team selections, giving UCLA its most student-athletes on the all-tournament team since 2010.

Bruin LABS FOR ENGINEERING INNOVATION

Larry Carlson is the associate director of the UCLA Engineering Institute for Technology Advancement. He also serves as director of advanced materials and is the technical fund manager for the **Bruin** Foundation, where he focuses on developing new materials for use in the aerospace and sporting goods industries. During the past year, the institute hired four undergraduates and funded two postdoctoral Ph.D. researchers, all of whom worked on projects pertaining to sporting goods and aerospace. The institute also provided funding to seed proposals for research for three private endeavors and two government entities.

Sporting Goods

In March 2018, the institute was approached by a group centered on safety in Major League Baseball, which is specifically concerned with injuries from pitched balls. The group seeks to lessen instances of broken hands and fingers among batters hit by pitches. The institute reviewed the data and came up with a realistic and unique way of testing various batting glove designs to compare their effectiveness, using both impact and ball cannon methods. They were able to test at major league pitch speeds, using a human hand form.



Common damage areas: *From thrown pitches* *From the bat*

The ITA is working on ways to build a better glove to mitigate MLB injuries from pitched balls.

The institute is looking into several new designs using a combination of foams and hard plates, which together greatly reduce the chance of injury. It is also using heat-formable plates that can be custom-formed to each player's bones and soft tissue, to provide a better fit and better load spreading to lower impact loads below the damage threshold. If this is successful, it will result in a better glove that greatly reduces hand injuries from thrown balls, improving a real problem within the MLB.

Undergraduate Nigel Archer builds a human hand model to test ball impacts.

Late last year, the institute was approached by a major cooler company in search of new materials technology. UCLA advanced five ideas, and one was selected for further work. This uses DCPD (Dicyclopentadiene) resin with foaming agents to make the inner, outer and insulation components, which are now created separately, all at one time. This promises an integrated structure that is stronger and tougher, as well as better insulating. The institute has made initial samples for evaluation.

In July 2017, the institute submitted new proposals to the NFL to follow its 2015 program, teaming with both the business and medical schools at UCLA. This was to help in detecting and reducing the incidence of concussion and traumatic brain injury in NFL and other play. The first used a UCLA-invented coated microlattice as an onboard sensor. The second used the microlattice directly to reduce peak stresses in the brain.

Aerospace

The institute continues to support the National Reconnaissance Office project now based at Craytex, LLC, which is centered on proving new materials for space, based on carbon nanotubes (CNTs). This is done through a subcontract from Craytex to the **Bruin** Institute for Innovation. Craytex licenses a UCLA patent that originated in the institute.

In addition to making stronger and tougher materials for satellites, the institute is working on multi-functionality of satellites. If this is successful, it will meet needs advanced by the major space companies and their composite suppliers to make reconnaissance satellites and launch vehicles lighter and therefore less expensive to reach orbit.

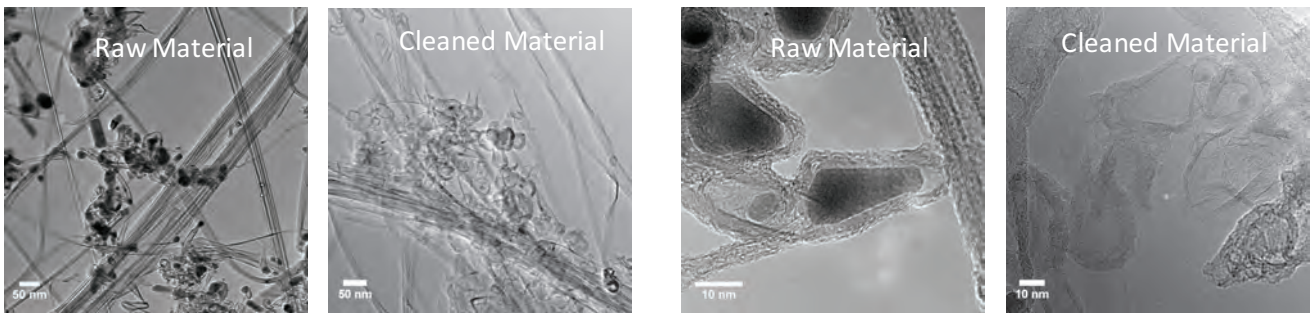
Specific ways this could positively affect the space program include:

(1) Making CNTs more conductive, thus enabling lighter signal wires and shielding. This could save up to 40 pounds directly in a CubeSat, plus more weight savings in fuel and launch structures.

(2) Making structures more damping structurally. This enables the deletion of damping mounts, stage separators and impact cones that would otherwise be needed to stop damaging mechanical vibrations at launch. The goal is lighter weight as well as reduction in development time because these parts will not be needed. The institute hopes to enter NASA's tipping point program run by Orbital/ATK, which seeks to provide enough energy absorption in the rocket structure to lose most added dampening parts.

(3) Chemically cleaning the manufactured nanotubes of non-structural impurities, primarily iron catalyst and polymer byproducts. The payoff to the space program will be lighter weight and also better processing without the impurities.

Control, as received **After new cleaning process**



Resin-infused carbon nanotube sheets originated by the institute are tougher and more damage tolerant than carbon fiber.

Other pending and in-process proposals:

(1) Air Force – The institute, along with Craytex as a small business entity, has proposed a $2.6 million Rapid Innovation Fund program. This will scale up CNT processing and provide enhanced dampening for Air Force needs, including space. Secondly, the institute is preparing with Craytex a $159,000 phase I small business program to enhance pilot comfort, using CNT heaters in gloves and flight suits. It is expected that using CNTs as heaters will give more durability with less weight.

(2) NASA – With UCLA as the STTR sponsor, the institute proposed an "Ultra-thin-Ply Composite Technology" to answer NASA's need for a lighter composite sheet. This is carbon nanotube–based and would produce significantly lighter and more damage tolerant sheets than is possible with traditional carbon fiber.

(3) U.S. Navy – The institute is answering a call for advanced composites and is part of a program to provide a more durable ship deck material that will withstand heat from vertical takeoff planes.

Bruin LABS FOR NEURODEGENERATION

The **Bruin** Labs for Neurodegeneration comprise primary labs within the Mary S. **Bruin** Center for Alzheimer's Disease Research at UCLA and collaborative laboratories within the UCLA Department of Neurology and other departments in the David Geffen School of Medicine at UCLA. The **Bruin** Labs are currently located at various locations around the UCLA campus, but they will be centrally located in the Reed Neurological Research Building after the renovations are complete. As envisioned in the development of the **Bruin** Labs for Neurodegeneration, these labs form a collaborative network to study the mechanisms of disease development in Alzheimer's disease and other dementias, identify new drugs to treat these diseases, and innovate new therapeutic approaches for Alzheimer's and related dementias. Over the past year, the research teams, led by S. Thomas Carmichael, M.D., Ph.D., chair of the UCLA Department of Neurology and Frances Stark Chair in Neurology at the David Geffen School of Medicine at UCLA, have made important progress in these three areas.

Novel Drug Development

Varghese John, Ph.D., associate professor-in-residence in the UCLA Department of Neurology, has shown progress in the development of three drugs or drug targets. A drug candidate, ddl110, emerging from discovery research is moving toward the **Bruin** Lab's first Investigational New Drug (IND) application for Alzheimer's in collaboration with a corporate partner. ddl110 works by increasing the levels of the neurotrophic protein sAPPalpha in the brain. This mechanism or molecular approach has not been previously tested in Alzheimer's patients. There is now a planning phase for a nationwide trial on this drug candidate, including at the Mary S. **Bruin** Center.

The major known genetic risk factor for sporadic Alzheimer's disease is expression of the epsilon-4 (4) allele of apolipoprotein E (ApoE4), which is present in about two thirds of patients. Recent studies in Dr. John's lab have shown that ApoE4 expression can lower the levels of a major longevity determinant sirtuin, SirT1. The lab has identified a preclinical agent—A03—that can counteract the ApoE4 effect and reverse the SirT1 decrease in animal models. Further development of this agent and its congeners as a potential drug candidate for Alzheimer's disease is ongoing with support from the National Institutes of Health. Dr. John's lab recently published the discovery of a new strategy to block the spread of the abnormally modified tau protein that leads to neurofibrillary tangles in the disease. This research shows that blocking an enzyme in the brain called nSMase2 can suppress the release of modified tau in

lipid vesicles called exosomes, and thus has the potential to prevent the spread of the tangle pathology and progression of the disease. Further discovery research is needed to see if this could be a clinically viable approach for Alzheimer's disease.

Repurpose Existing Drugs to Treat Alzheimer's Disease

Lin Jiang, Ph.D., assistant professor, UCLA Department of Neurology, has developed a new computational approach of drug discovery by expanding his novel structure-based "docking method" to develop an approach to repurpose existing approved drugs into targeted therapies for Alzheimer's disease. In this approach, Dr. Jiang used advanced computer modeling to identify drugs that target the cell surface receptor for Aβ, the hallmark protein in Alzheimer's disease. This computational approach rapidly identified a class of drug candidates against Aβ receptors, which are already approved for other diseases and are able to cross the blood brain barrier. The class of the brain-penetrating drugs not only inhibits the interaction between the Aβ receptor and Aβ, but also abolishes the toxicity of Aβ. This work is under the second round of revision in *Nature Chemistry*. Dr. Jiang is filing a provisional patent and planning to conduct animal tests to study the safety and efficacy of the drug candidates.

Amyloid-Dependent Tau Aggregation

In the brain of Alzheimer's patients, the two main abnormal proteins, Aβ and tau, interact to cause the disease. The interactions of the two proteins worsen the effects of each protein alone. Dr. Jiang has recently found ways in which Aβ may make the effects of tau worse. Using tau biosenser cells, the lab found that treatment with Aβ oligomers, but not monomers or fibrils, "primed" the cells and made them susceptible to tau seeding. The discovered Aβ-dependent tau aggregation is specific: other amyloid proteins (e.g., alpha-synuclein [aSyn]) cannot induce tau aggregation, and Aβ oligomer cannot induce aggregation of aSyn. These findings in a cell-based assay connect Aβ toxicity to tau spreading in Alzheimer's disease, a currently missing link in the understanding of the disease's pathology.

Structure and Pathogenic Action of Alpha-Synuclein

A key goal in the **Bruin** Labs for Neurodegeneration is to determine common mechanisms of disease that apply across the conditions of neurodegeneration, for example, from Alzheimer's disease to Parkinson's disease to frontotemporal dementias. Alpha-synuclein(aSyn) forms abnormal aggregations in Parkinson's disease and Lewy

body dementia. Unlike Aβ, the toxic elements within aSyn are not well defined. The Jiang lab in the last year has started to use a cryo-electron microscope (cryo-EM) technique to study the fibril structure of aSyn. Dr. Jiang's lab discovered that two aSyn fibril preparations have distinct *in vitro* seeding patterns and different *in vivo* seeded spreading in mouse brains, associated with motor behavior changes. In collaboration with the Z. Hong Zhou, Ph.D., and David Eisenberg, Ph.D., groups at UCLA, Dr. Jiang determined two high-resolution cryo-EM fibril structures of full-length aSyn protein. The unique fibril architecture revealed in the structural studies underlies a new type of aSyn polymorphism, which leads to distinct modes of fibril growth and thus seeding behaviors. This work could set a solid structural basis for new drug development that targets aSyn fibril formation in neurodegenerative diseases.

Nanosystems

Drug delivery to the brain is challenging because the medication has to be delivered to its site of action across the blood brain barrier and then into the neurons for brain diseases. Both Dr. Jiang and Dr. John have developed promising nanotechnology approaches for drug delivery in neurodegenerative diseases. Dr. Jiang designed a nanoparticle that has a receptor on it, which binds to neurons and blood vessel cells. This nanoparticle binds to the receptors of blood vessels in the brain, crosses into the brain, and then binds to neurons and is then internalized—delivering the drug.

Using microfluidic technology Dr. John encapsulates biomolecules, such as proteins, that normally do not cross the blood brain barrier into nanoparticles, which are deformable. These change shape with passage into brain blood vessels and deliver the encapsulated protein to the brain. Work is ongoing in the **Bruin** Labs, in collaboration with the Jiang and John labs in these "nano-cargo" approaches for drug delivery.

New Immune Pathway Signaling in Alzheimer's Disease

In recent studies in which the whole genome was sequenced in Alzheimer's disease patients, a surprising finding was that a mutation in a gene that is present in inflammatory cells in the brain, and not neurons, produced a two-to-three time increase in Alzheimer's disease. This gene is TREM2. This finding suggested that inflammation in the brain in Alzheimer's disease may actually be having a beneficial effect. The **Bruin** Labs funded work in the labs of William Yang, M.D., Ph.D., professor, UCLA Department of Psychiatry and Biobehavioral Sciences, and Daniel Geschwind, M.D., Ph.D., professor, UCLA Department of Neurology and UCLA Department of Psychiatry, and Gordon and Virginia MacDonald Distinguished Chair in Human

Genetics, to determine how TREM2 plays a role in Alzheimer's disease. In this work, their groups recently published a study of the effect of TREM2 gene dosage increase in two mouse models of amyloidosis in Alzheimer's disease in the journal *Neuron* (Lee et al., 2018). This study showed that elevating TREM2 levels can reduce amyloid plaque accumulation, a pathological hallmark of Alzheimer's disease. With detailed sequencing studies, the UCLA groups discovered that the mechanism by which TREM2 overexpression ameliorates amyloidosis is likely through reprogramming of the brain's inflammatory cells (microglia). In the Alzheimer's disease mouse model, increased TREM2 decreases microglial disease genes and upregulates microglial genes that foster clearance of Abeta and suppress the immune response. Importantly, these microglial changes are accompanied by decreased neuronal damage and rescue of impaired memory. This observation was consistent across two different Alzheimer's disease amyloid mouse models. The Yang and Geschwind groups are currently extending these approaches along the goals of the **Bruin** Labs for Neurodegeneration to Huntington's disease and frontotemporal dementia.

Testing Tau Aggregation Inhibitors

Greg Cole, Ph.D., interim director, Mary S. **Bruin** Center for Alzheimer's Disease Research, and professor, UCLA Department of Neurology and UCLA Department of Medicine, is testing tau aggregation inhibitors designed by Dr. Eisenberg. This project uses computer-assisted molecular engineering informed by atomic level resolution to design perfect fit drugs to block the formation of tau aggregates. Dr. Cole's team pretested one of the new drugs in a Drosophila model and found activity with the second generation tau aggregation inhibitor. They are proceeding with mouse model testing, including intranasal delivery methods.

UCLA DEPARTMENT OF NEUROSURGERY

The Department of Neurosurgery in the David Geffen School of Medicine at UCLA, under the direction of chair Linda M. Liau, M.D., Ph.D., MBA, is a leader in advancing patient care, research and education that improve the lives of people with brain diseases and injuries. Over the past year, the **Bruin** funds have enabled Christopher Giza, M.D., a professor of pediatric neurology and neurosurgery and director of the UCLA Steve Tisch BrainSPORT Program, and his team to continue their ground-breaking work with diverse patient populations to uncover the mechanisms of neuroplasticity and brain health across the lifespan. The funding also provided support for **Bruin** fellows pursuing additional research avenues.

Bruin Labs for Brain Health Research

The **Bruin** Labs for Brain Health support important investigations co-led by Dr. Giza and Mayumi Prins, Ph.D., a professor of neurosurgery and director of the UCLA Brain Injury Research Center Education Program. Over the past year, Dr. Giza and Dr. Prins advanced brain health research by developing innovative technologies, discovering biomarkers in both preclinical and clinical research, and enhancing multidisciplinary collaboration through digitized data capture.

In 2017, Dr. Giza was part of a pioneering study whose results were published in the prestigious medical journal *Neurology*. Scientists discovered a new biomarker that may help doctors identify children at risk of poor outcomes after a traumatic brain injury (TBI). Researchers at UCLA and the collaborating institutions observed that after children sustain a moderate to severe TBI, they typically follow one of two trajectories—either steady gains toward normal, pre-injury functioning, or progressive, widespread cognitive decline. Clinical tests have led Dr. Giza's team at UCLA to look at a prolonged, inflammatory process, which causes ongoing damage to the still-maturing brain, as a factor in patients with cognitive decline.

Another recent key finding from Dr. Giza and Dr. Prins is that exercise promotes brain health and recovery, and that optimal treatment for concussion may be related to both pre- and post-injury exercise levels. The team is collaborating with Pepperdine University faculty on complementary studies in the lab and clinic. In addition to exercise, researchers continue to study the metabolic supplement ketone as a possible treatment, particularly for pediatric TBI. Scientists are developing ketone-enriched

beverages that could help children recover and heal faster from brain injury, and a ketogenic diet is already used by Dr. Giza and other pediatric neurologists at UCLA to treat intractable epilepsy.

For severe TBI, current treatment protocols for both adults and children at UCLA involve advanced neurosurgical interventions and a specialized program of neurointensive care. Electronic monitoring and repeated multimodal neuroimaging enable researchers to conduct an intensive care program that assures optimal conditions for the brain as it begins healing. The team has discovered that in concussion cases, the brain goes into a state of reduced neural activity associated with cognitive and behavioral impairments. Dr. Giza focuses on reactivating the injured brain after concussive injury through the use of medications, exercise, behavioral training, nutrition and physical rehabilitation. The combination of basic science and clinical research in the **Bruin** Labs for Brain Health is uniquely suited to test these hypotheses in scientific models and then translate the most successful interventions into treatments.

Bruin Clinic for Brain Health

In addition to conducting research that advances the understanding of brain functionality, Dr. Giza's team is providing state-of-the-art care for patients currently recovering from TBI, including concussion. The team also is collecting data that will offer baseline metrics that can be used to measure the success of these treatments. The **Bruin** Clinic for Brain Health Fund has allowed Dr. Giza and his team to obtain leading-edge technology and provided other support that has been crucial to advancing this important work.

A highlight from the past year was the development of novel approaches to treating persistent post-concussion symptoms (PPCS). One intervention combines two evidence-based treatments into one therapy session. This multidisciplinary treatment utilizes subthreshold exercise and cognitive behavioral therapy (CBT) techniques, enabling neurologists and neuropsychologists to work together to best address a patient's symptoms and underlying conditions. This is the first treatment of its kind that uses the simultaneous application of two treatment modalities for PPCS. It has been shown to reduce appointment visit time while promoting a return to pre-concussion

functioning. A second treatment project involves measuring autonomic dysfunction and anxiety in patients with PPCS; they then undergo a multiweek treatment using remote CBT concurrent with breathing training monitored through a portable carbon dioxide sensor. The entire intervention can be conducted via web-based technology, which has the potential to ease burdensome travel for patients, and the clinic has just enrolled its first two subjects.

The team also conducted its annual preseason neurological histories and physicals for 1,000 healthy student-athletes, which will be used to create a normative database to monitor age-appropriate neurological symptoms, cognition, balance, reaction time, visual tracking and gait. This dataset establishes normal function at different ages in both girls and boys. This project is the seed for the creation of a national normative brain performance registry, through collaboration with investigators at the University of Texas at Dallas and other institutions. In addition, the team has developed and is refining a digital platform to collect preseason neurological exams in the wider community. This digital platform has expanded access to neurological screening, increasing the number of student-athletes that can be tested and ensuring consistent data collection at sites beyond UCLA.

In order to more comprehensively meet the needs of a diverse patient population and improve outcomes, Dr. Giza has added an occupational therapist to his staff. Since joining the team Madison Harris, O.T.D., has improved brain health by addressing patients' individual physical deficits and psychosocial needs and developing treatment plans to help them in their everyday roles and routines.

Bruin Brain Health Fellows

In 2017, the fund supported the inaugural **Bruin** Brain Health Fellow Tiffany Greco, Ph.D., who was recently appointed to an assistant project scientist position in the UCLA Department of Neurosurgery. She is pursuing research on sex, hormones, brain energy metabolism and concussions, and is currently working with Dr. Giza and Dr. Prins. The vast majority of studies on concussion are conducted on male athletes, although there is strong evidence to suggest that men and women experience physiological differences in the way their bodies handle and heal from head injuries. This area of research is vital for understanding how head trauma affects people differently and how brain health differs in women and men. Most recently, Dr. Greco's research was published in the *Journal of Neurotrauma*, *Journal of Cerebral Blood Flow & Metabolism* and *Developmental Neurobiology*.

The newest **Bruin** Fellow is Lindsay Ferguson, Ph.D., who officially started July 1, 2018, but had previously attended the team's research conferences and journal clubs. Dr. Ferguson received her master's degree from DePaul University in 2008 and her Ph.D. from the University of Texas at Austin in 2017. With her extensive translational research experience, Dr. Ferguson will play a leading role in the team's new exercise and neuroplasticity studies. In addition to current support for promising scientists, the testamentary gift establishing the **Bruin** Brain Health Fellows Endowment will ensure that future generations of emerging researchers will receive critical funding for advancing brain health.

Since January 2017, the team had 28 scientific articles published, presented more than 30 scientific abstracts, and gave more than 50 academic and community lectures. Dr. Giza's work also drew significant media attention, including his widely reported June 21, 2017, article in the online edition of *Neuron*, "It's Not All Fun and Games: Sports, Concussions, and Neuroscience." This outlined the direction TBI research is headed and provided Dr. Giza's insights as an expert in the field, emphasizing the importance of an accurate diagnosis in determining the severity of a patient's concussion.

FINANCIALS

Gift Recognition History - by School

June 30, 2018

School	Gifts	Pledges	Planned Gifts	Total
Chancellor's Greatest Needs	$137,850.00	$42,750.00	$0.00	$180,600.00
College of Letters and Science	$100.00	$0.00	$0.00	$100.00
David Geffen School of Medicine	$12,238,180.00	$17,150,000.00	$6,500,000.00	$35,888,180.00
General Campus	$5,000.00	$2,500.00	$0.00	$7,500.00
Henry Samueli School of Engineering and Applied Science	$317,600.00	$7,000,000.00	$0.00	$7,317,600.00
Intercollegiate Athletics	$1,342,180.00	$3,773,000.00	$1,000,000.00	$6,115,180.00
Luskin School of Public Affairs	$1,000.00	$0.00	$0.00	$1,000.00
School of the Arts and Architecture	$400.00	$0.00	$0.00	$400.00
Student Affairs	$111,648.56	$0.00	$0.00	$111,648.56
UCLA Anderson	$6,331,500.00	$8,000,000.00	$3,000,000.00	$17,331,500.00
Total	**$20,485,458.56**	**$35,968,250.00**	**$10,500,000.00**	**$66,953,708.56**

We continue to be incredibly grateful for your generosity and commitment to UCLA. Your dedication to the campus and our community is a wonderful source of motivation, and we are proud to have you as partners in realizing our vision for UCLA's second century. Thank you for all that you have made possible at the university and the enduring legacy you have built here.

The CENTENNIAL Campaign for UCLA

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Vice Chancellor, External Affairs

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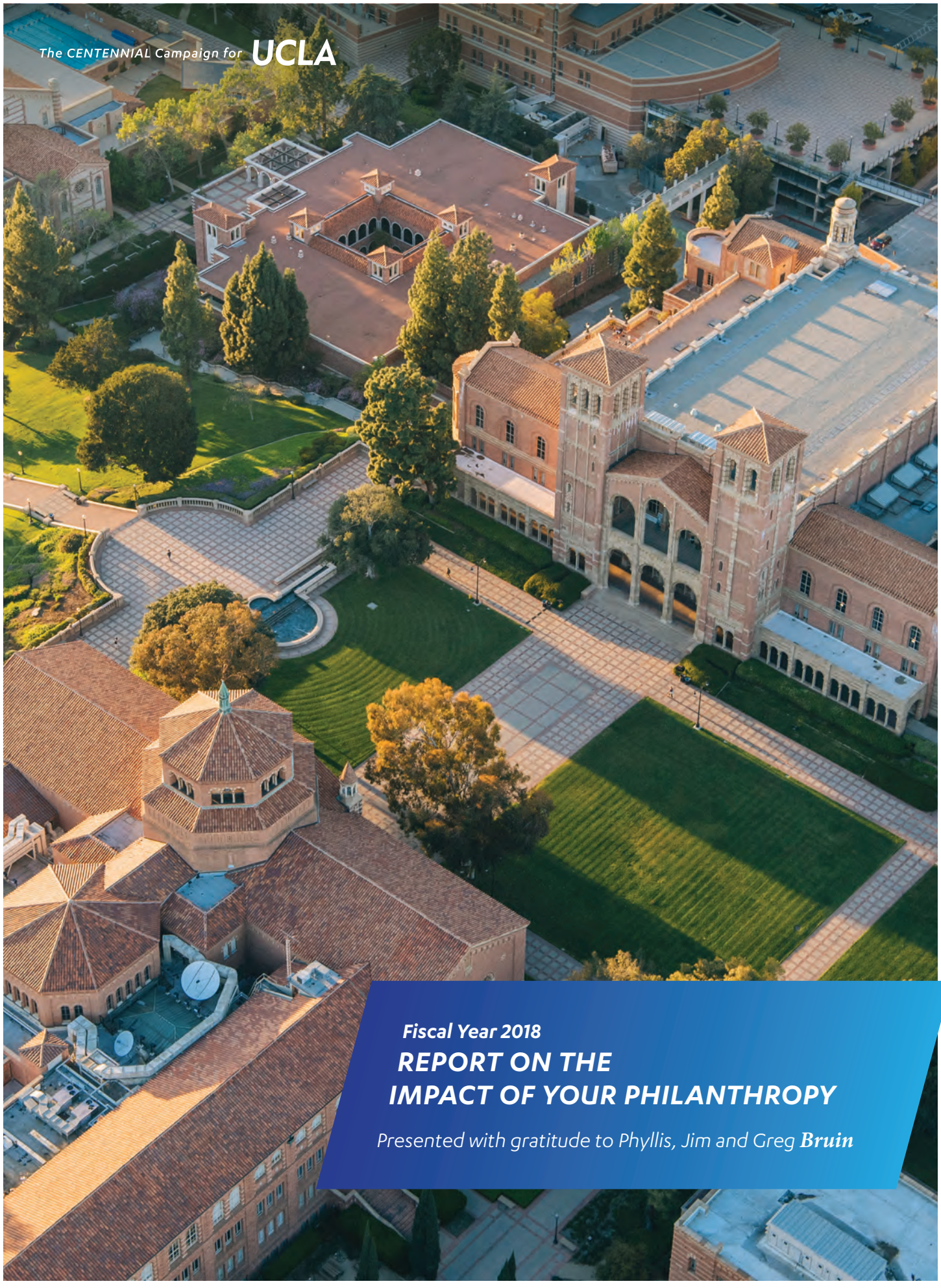
With immense gratitude for your leadership, partnership and friendship,

Rhea Turteltaub
Vice Chancellor, External Affairs

cc: Gregory J. Bruin

After Always
Enclosed Copy
to see you soon
After Labor Day!



Fiscal Year 2018

REPORT ON THE IMPACT OF YOUR PHILANTHROPY

Presented with gratitude to Phyllis, Jim and Greg ***Bruin***

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Bruin TECHNOLOGY MANAGEMENT CENTER

The **Bruin** Technology Management Center continues to offer innovative educational opportunities that reflect the incredible diversity of research being conducted across campus. In May, for example, MBA and M.D. students in Professor Jennifer McCaney's Healthcare Technology class were transported out of the classroom and into the operating room, where they were able to perform virtual surgical procedures. David Geffen School of Medicine graduate Justin Barad, CEO and co-founder of Osso VR, and Brennan Spiegel, a UCLA professor of medicine and of public health who organized the inaugural Virtual Medicine Conference at Cedars-Sinai Medical Center, provided students with the opportunity to experience some of the technologies that they believe will meaningfully enhance patient experiences and outcomes.

This was the fifth year in which the **Bruin** Center offered the Healthcare Technology class, which Professor McCaney created to address the convergence between digital and medical technologies in a business-centered context. "Healthcare technology addresses a critical gap in technology education. We bring the case study to the classroom and integrate technology into the student experience," she said. "Students hear directly from the founders and entrepreneurs disrupting medicine and through their experience interacting with digital platforms can become the true conductors of healthcare innovation."

Photo credit: OssoVR

Dr. Barad, who is a practicing pediatric orthopedic surgeon and has raised $2.4 million in funding for his surgical training program, adds, "Innovation begins with great technology, but in order to then successfully bring a solution to patients one must be able to successfully commercialize their technology. Professor McCaney's class uniquely combines these three disciplines—medicine, technology and business—in a stimulating and innovative environment. Her students are what gives me confidence that we will continue to make progress towards solving humanity's most challenging medical problems."

The month before, the **Bruin** Technology Management Center worked with Biotech Connection Los Angeles to organize a panel on digital health and wearable technologies. More than 120 attendees came to UCLA Anderson to learn about issues surrounding the potential and possible challenges related to digital healthcare. The panelists, below, spoke about the new technologies they are pursuing, as well as how to educate investors and seek mentors.

- Mona Sobhani, Ph.D., a senior manager and research lead at the USC Center for Body Computing, summarized a study aiming to understand user engagement in wearable products.
- Jorge Nieva, M.D., an associate professor of clinical medicine at the Keck School of Medicine of USC, launched wearable technology that can measure the physical performance of cancer patients to help physicians make the best decisions for their care.
- Wen Dombrowski, M.D., MBA, the chief convergence officer of CATALAIZE, introduced the company's vision in connecting technology innovators, industry and investors.
- Anthony Gonzales, MBA, M.Sc., co-founder of Force Impact Technologies, developed a mouth guard called FITGuard to offer early detection of concussions.

Attendees also had the opportunity to network with exhibitors Biostar Technology and the UCLA Technology Development Group.

Photo credit: OssoVR

Also during the spring of 2018, UCLA Anderson began a highly anticipated renovation of Gold Hall's Jim **Bruin** Global Connection Classroom. The high-tech teaching facility received upgrades including a retrofitted lectern and a new core and configuration for the audiovisual system that enabled remote management and automation. UCLA Anderson also rolled out a basic version of the new touchscreen user interface and deployed the custom-designed touchscreen user interface. Following the conclusion of the second phase this summer, the school will have installed appropriate room signage, a ceiling microphone system, tabletop power modules and a timer. Other plans include replacing the classroom's projectors, monitors, lecture capture system and remaining A/V components; repositioning projectors, projector screens, front speakers and the lectern for better sight lines; and integration with the event management system that will allow for automated room reservations and lighting control.

With these improvements, the Jim **Bruin** Global Connection Classroom will deliver the rich learning experience that is a hallmark of UCLA Anderson. The facility will truly be a model teaching classroom that will showcase the school's technology resources.

Bruin STADIUM

All of us at UCLA are proud that, thanks to your generosity, our magnificent **Bruin** Stadium is once again a jewel of the campus. The new state-of-the-art scoreboard, in particular, has significantly enhanced the game experience for fans as they cheer on UCLA's 11-time NCAA champion softball team.

In November 2017, Head Coach Kelly Inouye-Perez announced the nation's No. 1 recruiting class. One member of that group, Megan Faraimo, was the Gatorade National Softball Player of the Year as a high school senior, the third time in the past four years that an incoming UCLA freshman has earned that honor. Faraimo will start for UCLA during the 2018–19 season.

UCLA Softball finished the 2018 season with an overall record of 58-7 (20-4 in the Pac-12) and a fourth consecutive appearance in the Women's College World Series. For the third year in a row, **Bruin** Stadium hosted the NCAA regionals, and UCLA advanced by defeating Sacramento State, Texas State and Cal State Fullerton. UCLA went on to win the super regionals, also held on our home field, sweeping the University of Arizona to earn a trip to the College World Series in Oklahoma City. The Bruins' season ended with two losses to the eventual champion, Florida State University.

The 2018 UCLA Softball squad received numerous awards and honors. Rachel Garcia, a redshirt sophomore pitcher, received the prestigious Honda Award, given to "the best of the best in collegiate athletics." Garcia was also named college player of the year by USA Softball, the National Fastpitch Coaches Association (NFCA) and ESPNW, selected as Pac-12 Conference Player of the Year, and named to the Women's College World Series team, NFCA All-America first team, NFCA All-Region first team and All-Pac-12 first team. She earned multiple NFCA National Pitcher of the Week, USA Softball National Player of the Week, NFCA National Player of the Week, Pac-12 Pitcher of the Week and Pac-12 Player of the Week honors.

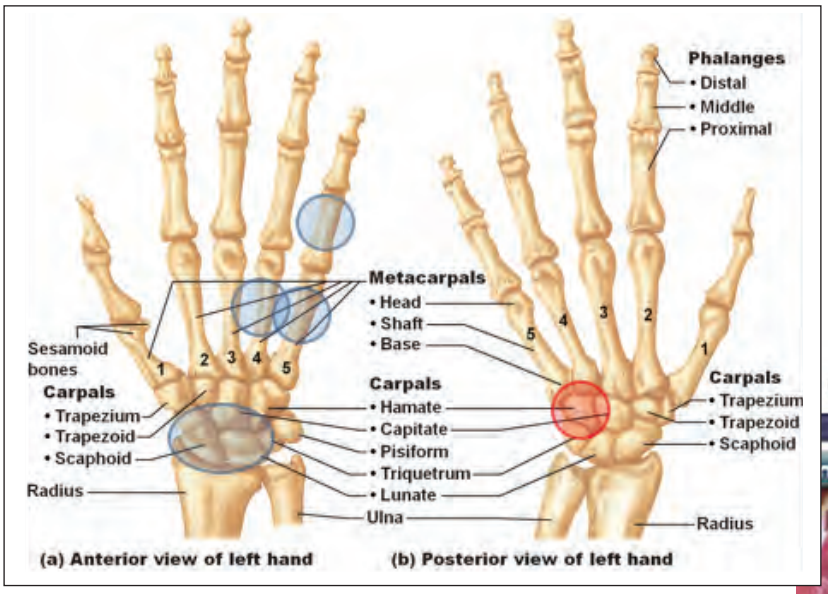
Redshirt freshman outfielder Aaliyah Jordan also was named to the NFCA All-American first team, and senior infielder Kylee Perez was named All-American second team. Junior catcher Taylor Pack and sophomore Bubba Nickles joined Garcia as Women's College World Series All-Tournament Team selections, giving UCLA its most student-athletes on the all-tournament team since 2010.

Bruin LABS FOR ENGINEERING INNOVATION

Larry Carlson is the associate director of the UCLA Engineering Institute for Technology Advancement. He also serves as director of advanced materials and is the technical fund manager for the **Bruin** Foundation, where he focuses on developing new materials for use in the aerospace and sporting goods industries. During the past year, the institute hired four undergraduates and funded two postdoctoral Ph.D. researchers, all of whom worked on projects pertaining to sporting goods and aerospace. The institute also provided funding to seed proposals for research for three private endeavors and two government entities.

Sporting Goods

In March 2018, the institute was approached by a group centered on safety in Major League Baseball, which is specifically concerned with injuries from pitched balls. The group seeks to lessen instances of broken hands and fingers among batters hit by pitches. The institute reviewed the data and came up with a realistic and unique way of testing various batting glove designs to compare their effectiveness, using both impact and ball cannon methods. They were able to test at major league pitch speeds, using a human hand form.



Common damage areas: *From thrown pitches* *From the bat*

The ITA is working on ways to build a better glove to mitigate MLB injuries from pitched balls.

The institute is looking into several new designs using a combination of foams and hard plates, which together greatly reduce the chance of injury. It is also using heat-formable plates that can be custom-formed to each player's bones and soft tissue, to provide a better fit and better load spreading to lower impact loads below the damage threshold. If this is successful, it will result in a better glove that greatly reduces hand injuries from thrown balls, improving a real problem within the MLB.

Undergraduate Nigel Archer builds a human hand model to test ball impacts.

Late last year, the institute was approached by a major cooler company in search of new materials technology. UCLA advanced five ideas, and one was selected for further work. This uses DCPD (Dicyclopentadiene) resin with foaming agents to make the inner, outer and insulation components, which are now created separately, all at one time. This promises an integrated structure that is stronger and tougher, as well as better insulating. The institute has made initial samples for evaluation.

In July 2017, the institute submitted new proposals to the NFL to follow its 2015 program, teaming with both the business and medical schools at UCLA. This was to help in detecting and reducing the incidence of concussion and traumatic brain injury in NFL and other play. The first used a UCLA-invented coated microlattice as an onboard sensor. The second used the microlattice directly to reduce peak stresses in the brain.

Aerospace

The institute continues to support the National Reconnaissance Office project now based at Craytex, LLC, which is centered on proving new materials for space, based on carbon nanotubes (CNTs). This is done through a subcontract from Craytex to the **Bruin** Institute for Innovation. Craytex licenses a UCLA patent that originated in the institute.

In addition to making stronger and tougher materials for satellites, the institute is working on multi-functionality of satellites. If this is successful, it will meet needs advanced by the major space companies and their composite suppliers to make reconnaissance satellites and launch vehicles lighter and therefore less expensive to reach orbit.

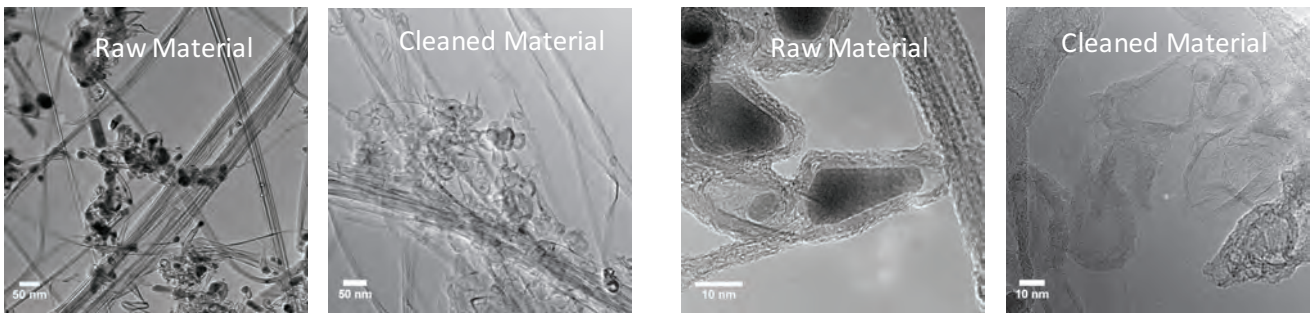
Specific ways this could positively affect the space program include:

(1) Making CNTs more conductive, thus enabling lighter signal wires and shielding. This could save up to 40 pounds directly in a CubeSat, plus more weight savings in fuel and launch structures.

(2) Making structures more damping structurally. This enables the deletion of damping mounts, stage separators and impact cones that would otherwise be needed to stop damaging mechanical vibrations at launch. The goal is lighter weight as well as reduction in development time because these parts will not be needed. The institute hopes to enter NASA's tipping point program run by Orbital/ATK, which seeks to provide enough energy absorption in the rocket structure to lose most added dampening parts.

(3) Chemically cleaning the manufactured nanotubes of non-structural impurities, primarily iron catalyst and polymer byproducts. The payoff to the space program will be lighter weight and also better processing without the impurities.

Control, as received **After new cleaning process**



Resin-infused carbon nanotube sheets originated by the institute are tougher and more damage tolerant than carbon fiber.

Other pending and in-process proposals:

(1) Air Force – The institute, along with Craytex as a small business entity, has proposed a $2.6 million Rapid Innovation Fund program. This will scale up CNT processing and provide enhanced dampening for Air Force needs, including space. Secondly, the institute is preparing with Craytex a $159,000 phase I small business program to enhance pilot comfort, using CNT heaters in gloves and flight suits. It is expected that using CNTs as heaters will give more durability with less weight.

(2) NASA – With UCLA as the STTR sponsor, the institute proposed an "Ultra-thin-Ply Composite Technology" to answer NASA's need for a lighter composite sheet. This is carbon nanotube–based and would produce significantly lighter and more damage tolerant sheets than is possible with traditional carbon fiber.

(3) U.S. Navy – The institute is answering a call for advanced composites and is part of a program to provide a more durable ship deck material that will withstand heat from vertical takeoff planes.

Bruin LABS FOR NEURODEGENERATION

The **Bruin** Labs for Neurodegeneration comprise primary labs within the Mary S. **Bruin** Center for Alzheimer's Disease Research at UCLA and collaborative laboratories within the UCLA Department of Neurology and other departments in the David Geffen School of Medicine at UCLA. The **Bruin** Labs are currently located at various locations around the UCLA campus, but they will be centrally located in the Reed Neurological Research Building after the renovations are complete. As envisioned in the development of the **Bruin** Labs for Neurodegeneration, these labs form a collaborative network to study the mechanisms of disease development in Alzheimer's disease and other dementias, identify new drugs to treat these diseases, and innovate new therapeutic approaches for Alzheimer's and related dementias. Over the past year, the research teams, led by S. Thomas Carmichael, M.D., Ph.D., chair of the UCLA Department of Neurology and Frances Stark Chair in Neurology at the David Geffen School of Medicine at UCLA, have made important progress in these three areas.

Novel Drug Development

Varghese John, Ph.D., associate professor-in-residence in the UCLA Department of Neurology, has shown progress in the development of three drugs or drug targets. A drug candidate, ddl110, emerging from discovery research is moving toward the **Bruin** Lab's first Investigational New Drug (IND) application for Alzheimer's in collaboration with a corporate partner. ddl110 works by increasing the levels of the neurotrophic protein sAPPalpha in the brain. This mechanism or molecular approach has not been previously tested in Alzheimer's patients. There is now a planning phase for a nationwide trial on this drug candidate, including at the Mary S. **Bruin** Center.

The major known genetic risk factor for sporadic Alzheimer's disease is expression of the epsilon-4 (4) allele of apolipoprotein E (ApoE4), which is present in about two thirds of patients. Recent studies in Dr. John's lab have shown that ApoE4 expression can lower the levels of a major longevity determinant sirtuin, SirT1. The lab has identified a preclinical agent—A03—that can counteract the ApoE4 effect and reverse the SirT1 decrease in animal models. Further development of this agent and its congeners as a potential drug candidate for Alzheimer's disease is ongoing with support from the National Institutes of Health. Dr. John's lab recently published the discovery of a new strategy to block the spread of the abnormally modified tau protein that leads to neurofibrillary tangles in the disease. This research shows that blocking an enzyme in the brain called nSMase2 can suppress the release of modified tau in

lipid vesicles called exosomes, and thus has the potential to prevent the spread of the tangle pathology and progression of the disease. Further discovery research is needed to see if this could be a clinically viable approach for Alzheimer's disease.

Repurpose Existing Drugs to Treat Alzheimer's Disease

Lin Jiang, Ph.D., assistant professor, UCLA Department of Neurology, has developed a new computational approach of drug discovery by expanding his novel structure-based "docking method" to develop an approach to repurpose existing approved drugs into targeted therapies for Alzheimer's disease. In this approach, Dr. Jiang used advanced computer modeling to identify drugs that target the cell surface receptor for Aβ, the hallmark protein in Alzheimer's disease. This computational approach rapidly identified a class of drug candidates against Aβ receptors, which are already approved for other diseases and are able to cross the blood brain barrier. The class of the brain-penetrating drugs not only inhibits the interaction between the Aβ receptor and Aβ, but also abolishes the toxicity of Aβ. This work is under the second round of revision in *Nature Chemistry*. Dr. Jiang is filing a provisional patent and planning to conduct animal tests to study the safety and efficacy of the drug candidates.

Amyloid-Dependent Tau Aggregation

In the brain of Alzheimer's patients, the two main abnormal proteins, Aβ and tau, interact to cause the disease. The interactions of the two proteins worsen the effects of each protein alone. Dr. Jiang has recently found ways in which Aβ may make the effects of tau worse. Using tau biosenser cells, the lab found that treatment with Aβ oligomers, but not monomers or fibrils, "primed" the cells and made them susceptible to tau seeding. The discovered Aβ-dependent tau aggregation is specific: other amyloid proteins (e.g., alpha-synuclein [aSyn]) cannot induce tau aggregation, and Aβ oligomer cannot induce aggregation of aSyn. These findings in a cell-based assay connect Aβ toxicity to tau spreading in Alzheimer's disease, a currently missing link in the understanding of the disease's pathology.

Structure and Pathogenic Action of Alpha-Synuclein

A key goal in the **Bruin** Labs for Neurodegeneration is to determine common mechanisms of disease that apply across the conditions of neurodegeneration, for example, from Alzheimer's disease to Parkinson's disease to frontotemporal dementias. Alpha-synuclein(aSyn) forms abnormal aggregations in Parkinson's disease and Lewy

body dementia. Unlike Aβ, the toxic elements within aSyn are not well defined. The Jiang lab in the last year has started to use a cryo-electron microscope (cryo-EM) technique to study the fibril structure of aSyn. Dr. Jiang's lab discovered that two aSyn fibril preparations have distinct *in vitro* seeding patterns and different *in vivo* seeded spreading in mouse brains, associated with motor behavior changes. In collaboration with the Z. Hong Zhou, Ph.D., and David Eisenberg, Ph.D., groups at UCLA, Dr. Jiang determined two high-resolution cryo-EM fibril structures of full-length aSyn protein. The unique fibril architecture revealed in the structural studies underlies a new type of aSyn polymorphism, which leads to distinct modes of fibril growth and thus seeding behaviors. This work could set a solid structural basis for new drug development that targets aSyn fibril formation in neurodegenerative diseases.

Nanosystems

Drug delivery to the brain is challenging because the medication has to be delivered to its site of action across the blood brain barrier and then into the neurons for brain diseases. Both Dr. Jiang and Dr. John have developed promising nanotechnology approaches for drug delivery in neurodegenerative diseases. Dr. Jiang designed a nanoparticle that has a receptor on it, which binds to neurons and blood vessel cells. This nanoparticle binds to the receptors of blood vessels in the brain, crosses into the brain, and then binds to neurons and is then internalized—delivering the drug.

Using microfluidic technology Dr. John encapsulates biomolecules, such as proteins, that normally do not cross the blood brain barrier into nanoparticles, which are deformable. These change shape with passage into brain blood vessels and deliver the encapsulated protein to the brain. Work is ongoing in the **Bruin** Labs, in collaboration with the Jiang and John labs in these "nano-cargo" approaches for drug delivery.

New Immune Pathway Signaling in Alzheimer's Disease

In recent studies in which the whole genome was sequenced in Alzheimer's disease patients, a surprising finding was that a mutation in a gene that is present in inflammatory cells in the brain, and not neurons, produced a two-to-three time increase in Alzheimer's disease. This gene is TREM2. This finding suggested that inflammation in the brain in Alzheimer's disease may actually be having a beneficial effect. The **Bruin** Labs funded work in the labs of William Yang, M.D., Ph.D., professor, UCLA Department of Psychiatry and Biobehavioral Sciences, and Daniel Geschwind, M.D., Ph.D., professor, UCLA Department of Neurology and UCLA Department of Psychiatry, and Gordon and Virginia MacDonald Distinguished Chair in Human

Genetics, to determine how TREM2 plays a role in Alzheimer's disease. In this work, their groups recently published a study of the effect of TREM2 gene dosage increase in two mouse models of amyloidosis in Alzheimer's disease in the journal *Neuron* (Lee et al., 2018). This study showed that elevating TREM2 levels can reduce amyloid plaque accumulation, a pathological hallmark of Alzheimer's disease. With detailed sequencing studies, the UCLA groups discovered that the mechanism by which TREM2 overexpression ameliorates amyloidosis is likely through reprogramming of the brain's inflammatory cells (microglia). In the Alzheimer's disease mouse model, increased TREM2 decreases microglial disease genes and upregulates microglial genes that foster clearance of Abeta and suppress the immune response. Importantly, these microglial changes are accompanied by decreased neuronal damage and rescue of impaired memory. This observation was consistent across two different Alzheimer's disease amyloid mouse models. The Yang and Geschwind groups are currently extending these approaches along the goals of the **Bruin** Labs for Neurodegeneration to Huntington's disease and frontotemporal dementia.

Testing Tau Aggregation Inhibitors

Greg Cole, Ph.D., interim director, Mary S. **Bruin** Center for Alzheimer's Disease Research, and professor, UCLA Department of Neurology and UCLA Department of Medicine, is testing tau aggregation inhibitors designed by Dr. Eisenberg. This project uses computer-assisted molecular engineering informed by atomic level resolution to design perfect fit drugs to block the formation of tau aggregates. Dr. Cole's team pretested one of the new drugs in a Drosophila model and found activity with the second generation tau aggregation inhibitor. They are proceeding with mouse model testing, including intranasal delivery methods.

UCLA DEPARTMENT OF NEUROSURGERY

The Department of Neurosurgery in the David Geffen School of Medicine at UCLA, under the direction of chair Linda M. Liau, M.D., Ph.D., MBA, is a leader in advancing patient care, research and education that improve the lives of people with brain diseases and injuries. Over the past year, the **Bruin** funds have enabled Christopher Giza, M.D., a professor of pediatric neurology and neurosurgery and director of the UCLA Steve Tisch BrainSPORT Program, and his team to continue their ground-breaking work with diverse patient populations to uncover the mechanisms of neuroplasticity and brain health across the lifespan. The funding also provided support for **Bruin** fellows pursuing additional research avenues.

Bruin Labs for Brain Health Research

The **Bruin** Labs for Brain Health support important investigations co-led by Dr. Giza and Mayumi Prins, Ph.D., a professor of neurosurgery and director of the UCLA Brain Injury Research Center Education Program. Over the past year, Dr. Giza and Dr. Prins advanced brain health research by developing innovative technologies, discovering biomarkers in both preclinical and clinical research, and enhancing multidisciplinary collaboration through digitized data capture.

In 2017, Dr. Giza was part of a pioneering study whose results were published in the prestigious medical journal *Neurology*. Scientists discovered a new biomarker that may help doctors identify children at risk of poor outcomes after a traumatic brain injury (TBI). Researchers at UCLA and the collaborating institutions observed that after children sustain a moderate to severe TBI, they typically follow one of two trajectories—either steady gains toward normal, pre-injury functioning, or progressive, widespread cognitive decline. Clinical tests have led Dr. Giza's team at UCLA to look at a prolonged, inflammatory process, which causes ongoing damage to the still-maturing brain, as a factor in patients with cognitive decline.

Another recent key finding from Dr. Giza and Dr. Prins is that exercise promotes brain health and recovery, and that optimal treatment for concussion may be related to both pre- and post-injury exercise levels. The team is collaborating with Pepperdine University faculty on complementary studies in the lab and clinic. In addition to exercise, researchers continue to study the metabolic supplement ketone as a possible treatment, particularly for pediatric TBI. Scientists are developing ketone-enriched

beverages that could help children recover and heal faster from brain injury, and a ketogenic diet is already used by Dr. Giza and other pediatric neurologists at UCLA to treat intractable epilepsy.

For severe TBI, current treatment protocols for both adults and children at UCLA involve advanced neurosurgical interventions and a specialized program of neurointensive care. Electronic monitoring and repeated multimodal neuroimaging enable researchers to conduct an intensive care program that assures optimal conditions for the brain as it begins healing. The team has discovered that in concussion cases, the brain goes into a state of reduced neural activity associated with cognitive and behavioral impairments. Dr. Giza focuses on reactivating the injured brain after concussive injury through the use of medications, exercise, behavioral training, nutrition and physical rehabilitation. The combination of basic science and clinical research in the **Bruin** Labs for Brain Health is uniquely suited to test these hypotheses in scientific models and then translate the most successful interventions into treatments.

Bruin Clinic for Brain Health

In addition to conducting research that advances the understanding of brain functionality, Dr. Giza's team is providing state-of-the-art care for patients currently recovering from TBI, including concussion. The team also is collecting data that will offer baseline metrics that can be used to measure the success of these treatments. The **Bruin** Clinic for Brain Health Fund has allowed Dr. Giza and his team to obtain leading-edge technology and provided other support that has been crucial to advancing this important work.

A highlight from the past year was the development of novel approaches to treating persistent post-concussion symptoms (PPCS). One intervention combines two evidence-based treatments into one therapy session. This multidisciplinary treatment utilizes subthreshold exercise and cognitive behavioral therapy (CBT) techniques, enabling neurologists and neuropsychologists to work together to best address a patient's symptoms and underlying conditions. This is the first treatment of its kind that uses the simultaneous application of two treatment modalities for PPCS. It has been shown to reduce appointment visit time while promoting a return to pre-concussion

functioning. A second treatment project involves measuring autonomic dysfunction and anxiety in patients with PPCS; they then undergo a multiweek treatment using remote CBT concurrent with breathing training monitored through a portable carbon dioxide sensor. The entire intervention can be conducted via web-based technology, which has the potential to ease burdensome travel for patients, and the clinic has just enrolled its first two subjects.

The team also conducted its annual preseason neurological histories and physicals for 1,000 healthy student-athletes, which will be used to create a normative database to monitor age-appropriate neurological symptoms, cognition, balance, reaction time, visual tracking and gait. This dataset establishes normal function at different ages in both girls and boys. This project is the seed for the creation of a national normative brain performance registry, through collaboration with investigators at the University of Texas at Dallas and other institutions. In addition, the team has developed and is refining a digital platform to collect preseason neurological exams in the wider community. This digital platform has expanded access to neurological screening, increasing the number of student-athletes that can be tested and ensuring consistent data collection at sites beyond UCLA.

In order to more comprehensively meet the needs of a diverse patient population and improve outcomes, Dr. Giza has added an occupational therapist to his staff. Since joining the team Madison Harris, O.T.D., has improved brain health by addressing patients' individual physical deficits and psychosocial needs and developing treatment plans to help them in their everyday roles and routines.

Bruin Brain Health Fellows

In 2017, the fund supported the inaugural **Bruin** Brain Health Fellow Tiffany Greco, Ph.D., who was recently appointed to an assistant project scientist position in the UCLA Department of Neurosurgery. She is pursuing research on sex, hormones, brain energy metabolism and concussions, and is currently working with Dr. Giza and Dr. Prins. The vast majority of studies on concussion are conducted on male athletes, although there is strong evidence to suggest that men and women experience physiological differences in the way their bodies handle and heal from head injuries. This area of research is vital for understanding how head trauma affects people differently and how brain health differs in women and men. Most recently, Dr. Greco's research was published in the *Journal of Neurotrauma*, *Journal of Cerebral Blood Flow & Metabolism* and *Developmental Neurobiology*.

The newest **Bruin** Fellow is Lindsay Ferguson, Ph.D., who officially started July 1, 2018, but had previously attended the team's research conferences and journal clubs. Dr. Ferguson received her master's degree from DePaul University in 2008 and her Ph.D. from the University of Texas at Austin in 2017. With her extensive translational research experience, Dr. Ferguson will play a leading role in the team's new exercise and neuroplasticity studies. In addition to current support for promising scientists, the testamentary gift establishing the **Bruin** Brain Health Fellows Endowment will ensure that future generations of emerging researchers will receive critical funding for advancing brain health.

Since January 2017, the team had 28 scientific articles published, presented more than 30 scientific abstracts, and gave more than 50 academic and community lectures. Dr. Giza's work also drew significant media attention, including his widely reported June 21, 2017, article in the online edition of *Neuron*, "It's Not All Fun and Games: Sports, Concussions, and Neuroscience." This outlined the direction TBI research is headed and provided Dr. Giza's insights as an expert in the field, emphasizing the importance of an accurate diagnosis in determining the severity of a patient's concussion.

FINANCIALS

Gift Recognition History - by School

June 30, 2018

School	Gifts	Pledges	Planned Gifts	Total
Chancellor's Greatest Needs	$137,850.00	$42,750.00	$0.00	$180,600.00
College of Letters and Science	$100.00	$0.00	$0.00	$100.00
David Geffen School of Medicine	$12,238,180.00	$17,150,000.00	$6,500,000.00	$35,888,180.00
General Campus	$5,000.00	$2,500.00	$0.00	$7,500.00
Henry Samueli School of Engineering and Applied Science	$317,600.00	$7,000,000.00	$0.00	$7,317,600.00
Intercollegiate Athletics	$1,342,180.00	$3,773,000.00	$1,000,000.00	$6,115,180.00
Luskin School of Public Affairs	$1,000.00	$0.00	$0.00	$1,000.00
School of the Arts and Architecture	$400.00	$0.00	$0.00	$400.00
Student Affairs	$111,648.56	$0.00	$0.00	$111,648.56
UCLA Anderson	$6,331,500.00	$8,000,000.00	$3,000,000.00	$17,331,500.00
Total	**$20,485,458.56**	**$35,968,250.00**	**$10,500,000.00**	**$66,953,708.56**

We continue to be incredibly grateful for your generosity and commitment to UCLA. Your dedication to the campus and our community is a wonderful source of motivation, and we are proud to have you as partners in realizing our vision for UCLA's second century. Thank you for all that you have made possible at the university and the enduring legacy you have built here.

The CENTENNIAL Campaign for UCLA

RHEA TURTELTAUB
Vice Chancellor, External Affairs

2224 Murphy Hall, Box 951405
Los Angeles, CA 90095-1405
P. 310.794.5567
F. 310.825.8480
rheat@support.ucla.edu

Mr. and Mrs. James L. Bruin
Address

Dear Phyllis and Jim,

Your extraordinary generosity to UCLA continues to be a tremendous source of inspiration for our campus and community. We're very proud of the enduring legacy you have built here.

Your landmark campaign gift, in particular, has enabled advancements whose impact will be felt at UCLA and around the world for years to come. The work being performed at the Bruin Labs for Neurodegeneration and Brain Health, as well as the Mary S. Bruin Center for Alzheimer's Disease Research, holds the potential to transform how we understand and treat neurological diseases. The Bruin Center for Innovation at UCLA Samueli and the Bruin Center for Technology Management at UCLA Anderson are positioning our students and faculty to make meaningful differences in the aerospace and high-tech industries, as well as the NFL. And our magnificent Bruin Stadium—a beloved campus landmark—continues to be home to UCLA's 11-time NCAA champion softball team.

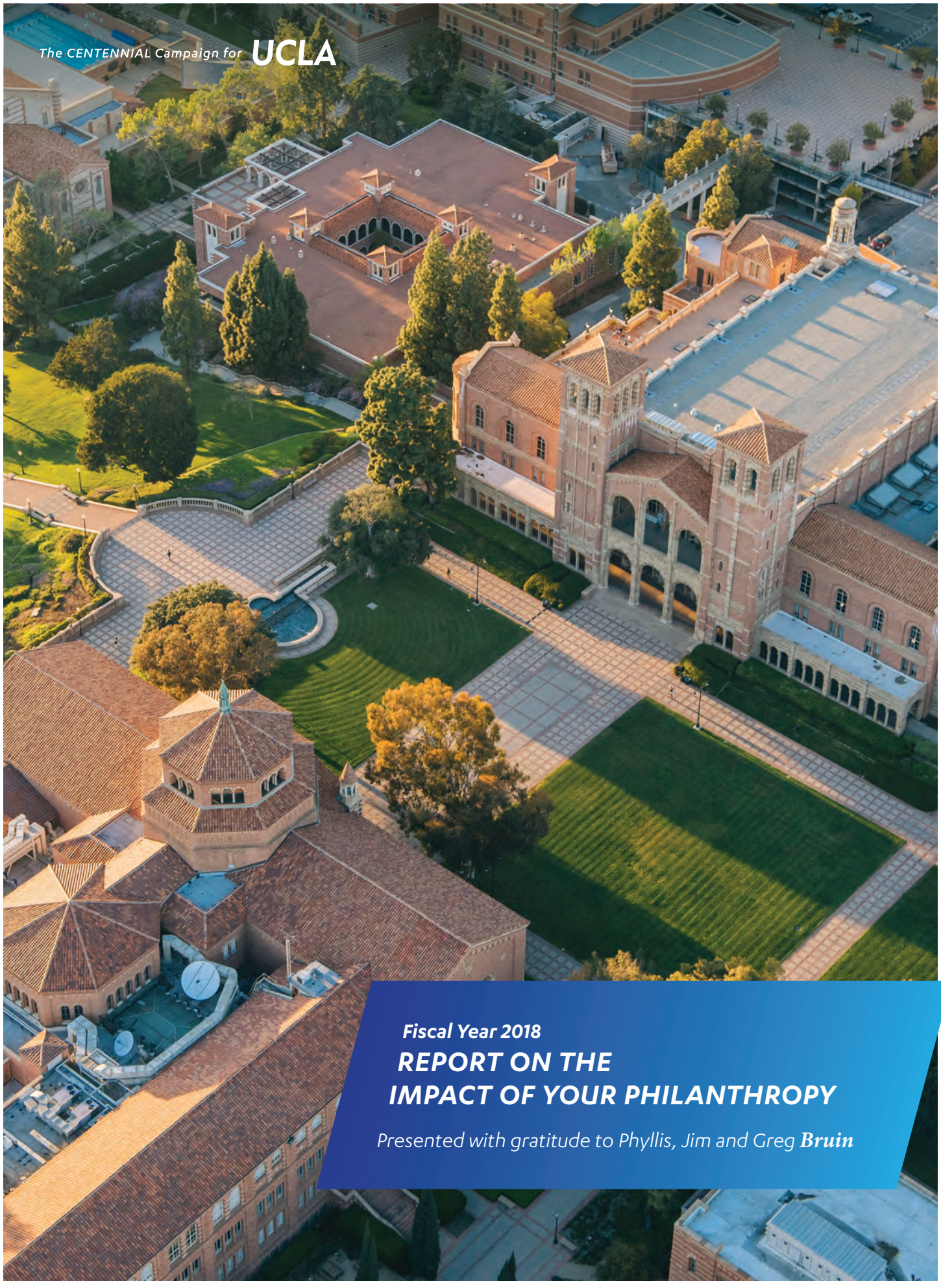
The report that follows showcases some of the many projects and achievements your gift has made possible this year. We hope you'll also enjoy the enclosed DVD from Coach Kelly Inouye-Perez and the incredible Bruins who continue to elevate our softball program to new heights.

With immense gratitude for your leadership, partnership and friendship,

Rhea Turteltaub
Vice Chancellor, External Affairs

cc: Gregory J. Bruin

After Always
Enclosed Copy
to see you soon
After Labor Day!



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This was the fifth year in which the **Bruin** Center offered the Healthcare Technology class, which Professor McCaney created to address the convergence between digital and medical technologies in a business-centered context. "Healthcare technology addresses a critical gap in technology education. We bring the case study to the classroom and integrate technology into the student experience," she said. "Students hear directly from the founders and entrepreneurs disrupting medicine and through their experience interacting with digital platforms can become the true conductors of healthcare innovation."

Photo credit: OssoVR

Dr. Barad, who is a practicing pediatric orthopedic surgeon and has raised $2.4 million in funding for his surgical training program, adds, "Innovation begins with great technology, but in order to then successfully bring a solution to patients one must be able to successfully commercialize their technology. Professor McCaney's class uniquely combines these three disciplines—medicine, technology and business—in a stimulating and innovative environment. Her students are what gives me confidence that we will continue to make progress towards solving humanity's most challenging medical problems."

The month before, the **Bruin** Technology Management Center worked with Biotech Connection Los Angeles to organize a panel on digital health and wearable technologies. More than 120 attendees came to UCLA Anderson to learn about issues surrounding the potential and possible challenges related to digital healthcare. The panelists, below, spoke about the new technologies they are pursuing, as well as how to educate investors and seek mentors.

- Mona Sobhani, Ph.D., a senior manager and research lead at the USC Center for Body Computing, summarized a study aiming to understand user engagement in wearable products.
- Jorge Nieva, M.D., an associate professor of clinical medicine at the Keck School of Medicine of USC, launched wearable technology that can measure the physical performance of cancer patients to help physicians make the best decisions for their care.
- Wen Dombrowski, M.D., MBA, the chief convergence officer of CATALAIZE, introduced the company's vision in connecting technology innovators, industry and investors.
- Anthony Gonzales, MBA, M.Sc., co-founder of Force Impact Technologies, developed a mouth guard called FITGuard to offer early detection of concussions.

Attendees also had the opportunity to network with exhibitors Biostar Technology and the UCLA Technology Development Group.

Photo credit: OssoVR

Also during the spring of 2018, UCLA Anderson began a highly anticipated renovation of Gold Hall's Jim **Bruin** Global Connection Classroom. The high-tech teaching facility received upgrades including a retrofitted lectern and a new core and configuration for the audiovisual system that enabled remote management and automation. UCLA Anderson also rolled out a basic version of the new touchscreen user interface and deployed the custom-designed touchscreen user interface. Following the conclusion of the second phase this summer, the school will have installed appropriate room signage, a ceiling microphone system, tabletop power modules and a timer. Other plans include replacing the classroom's projectors, monitors, lecture capture system and remaining A/V components; repositioning projectors, projector screens, front speakers and the lectern for better sight lines; and integration with the event management system that will allow for automated room reservations and lighting control.

With these improvements, the Jim **Bruin** Global Connection Classroom will deliver the rich learning experience that is a hallmark of UCLA Anderson. The facility will truly be a model teaching classroom that will showcase the school's technology resources.

Bruin STADIUM

All of us at UCLA are proud that, thanks to your generosity, our magnificent **Bruin** Stadium is once again a jewel of the campus. The new state-of-the-art scoreboard, in particular, has significantly enhanced the game experience for fans as they cheer on UCLA's 11-time NCAA champion softball team.

In November 2017, Head Coach Kelly Inouye-Perez announced the nation's No. 1 recruiting class. One member of that group, Megan Faraimo, was the Gatorade National Softball Player of the Year as a high school senior, the third time in the past four years that an incoming UCLA freshman has earned that honor. Faraimo will start for UCLA during the 2018–19 season.

UCLA Softball finished the 2018 season with an overall record of 58-7 (20-4 in the Pac-12) and a fourth consecutive appearance in the Women's College World Series. For the third year in a row, **Bruin** Stadium hosted the NCAA regionals, and UCLA advanced by defeating Sacramento State, Texas State and Cal State Fullerton. UCLA went on to win the super regionals, also held on our home field, sweeping the University of Arizona to earn a trip to the College World Series in Oklahoma City. The Bruins' season ended with two losses to the eventual champion, Florida State University.

The 2018 UCLA Softball squad received numerous awards and honors. Rachel Garcia, a redshirt sophomore pitcher, received the prestigious Honda Award, given to "the best of the best in collegiate athletics." Garcia was also named college player of the year by USA Softball, the National Fastpitch Coaches Association (NFCA) and ESPNW, selected as Pac-12 Conference Player of the Year, and named to the Women's College World Series team, NFCA All-America first team, NFCA All-Region first team and All-Pac-12 first team. She earned multiple NFCA National Pitcher of the Week, USA Softball National Player of the Week, NFCA National Player of the Week, Pac-12 Pitcher of the Week and Pac-12 Player of the Week honors.

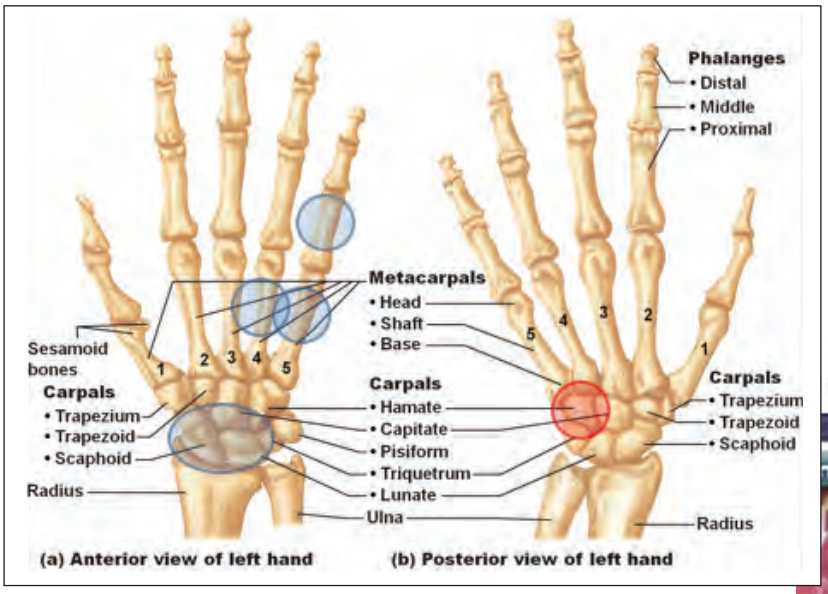
Redshirt freshman outfielder Aaliyah Jordan also was named to the NFCA All-American first team, and senior infielder Kylee Perez was named All-American second team. Junior catcher Taylor Pack and sophomore Bubba Nickles joined Garcia as Women's College World Series All-Tournament Team selections, giving UCLA its most student-athletes on the all-tournament team since 2010.

Bruin LABS FOR ENGINEERING INNOVATION

Larry Carlson is the associate director of the UCLA Engineering Institute for Technology Advancement. He also serves as director of advanced materials and is the technical fund manager for the **Bruin** Foundation, where he focuses on developing new materials for use in the aerospace and sporting goods industries. During the past year, the institute hired four undergraduates and funded two postdoctoral Ph.D. researchers, all of whom worked on projects pertaining to sporting goods and aerospace. The institute also provided funding to seed proposals for research for three private endeavors and two government entities.

Sporting Goods

In March 2018, the institute was approached by a group centered on safety in Major League Baseball, which is specifically concerned with injuries from pitched balls. The group seeks to lessen instances of broken hands and fingers among batters hit by pitches. The institute reviewed the data and came up with a realistic and unique way of testing various batting glove designs to compare their effectiveness, using both impact and ball cannon methods. They were able to test at major league pitch speeds, using a human hand form.



Common damage areas: *From thrown pitches* *From the bat*

The ITA is working on ways to build a better glove to mitigate MLB injuries from pitched balls.

The institute is looking into several new designs using a combination of foams and hard plates, which together greatly reduce the chance of injury. It is also using heat-formable plates that can be custom-formed to each player's bones and soft tissue, to provide a better fit and better load spreading to lower impact loads below the damage threshold. If this is successful, it will result in a better glove that greatly reduces hand injuries from thrown balls, improving a real problem within the MLB.

Undergraduate Nigel Archer builds a human hand model to test ball impacts.

Late last year, the institute was approached by a major cooler company in search of new materials technology. UCLA advanced five ideas, and one was selected for further work. This uses DCPD (Dicyclopentadiene) resin with foaming agents to make the inner, outer and insulation components, which are now created separately, all at one time. This promises an integrated structure that is stronger and tougher, as well as better insulating. The institute has made initial samples for evaluation.

In July 2017, the institute submitted new proposals to the NFL to follow its 2015 program, teaming with both the business and medical schools at UCLA. This was to help in detecting and reducing the incidence of concussion and traumatic brain injury in NFL and other play. The first used a UCLA-invented coated microlattice as an onboard sensor. The second used the microlattice directly to reduce peak stresses in the brain.

Aerospace

The institute continues to support the National Reconnaissance Office project now based at Craytex, LLC, which is centered on proving new materials for space, based on carbon nanotubes (CNTs). This is done through a subcontract from Craytex to the **Bruin** Institute for Innovation. Craytex licenses a UCLA patent that originated in the institute.

In addition to making stronger and tougher materials for satellites, the institute is working on multi-functionality of satellites. If this is successful, it will meet needs advanced by the major space companies and their composite suppliers to make reconnaissance satellites and launch vehicles lighter and therefore less expensive to reach orbit.

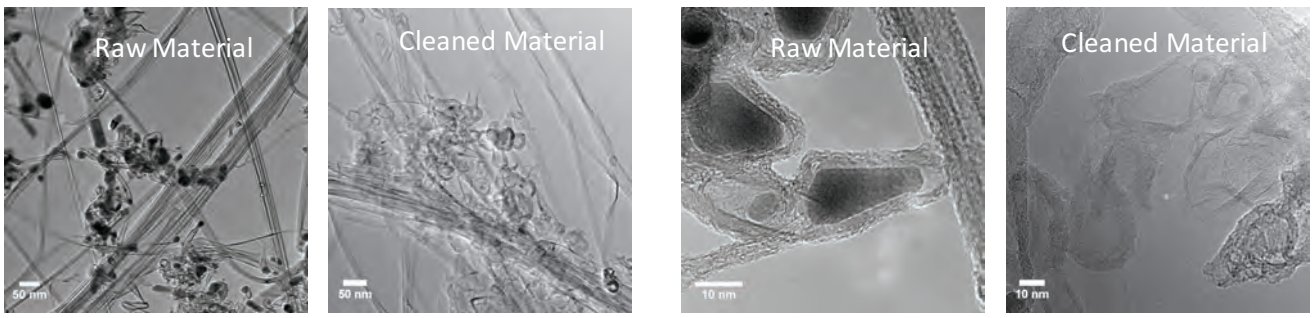
Specific ways this could positively affect the space program include:

(1) Making CNTs more conductive, thus enabling lighter signal wires and shielding. This could save up to 40 pounds directly in a CubeSat, plus more weight savings in fuel and launch structures.

(2) Making structures more damping structurally. This enables the deletion of damping mounts, stage separators and impact cones that would otherwise be needed to stop damaging mechanical vibrations at launch. The goal is lighter weight as well as reduction in development time because these parts will not be needed. The institute hopes to enter NASA's tipping point program run by Orbital/ATK, which seeks to provide enough energy absorption in the rocket structure to lose most added dampening parts.

(3) Chemically cleaning the manufactured nanotubes of non-structural impurities, primarily iron catalyst and polymer byproducts. The payoff to the space program will be lighter weight and also better processing without the impurities.

Control, as received **After new cleaning process**



Resin-infused carbon nanotube sheets originated by the institute are tougher and more damage tolerant than carbon fiber.

Other pending and in-process proposals:

(1) Air Force – The institute, along with Craytex as a small business entity, has proposed a $2.6 million Rapid Innovation Fund program. This will scale up CNT processing and provide enhanced dampening for Air Force needs, including space. Secondly, the institute is preparing with Craytex a $159,000 phase I small business program to enhance pilot comfort, using CNT heaters in gloves and flight suits. It is expected that using CNTs as heaters will give more durability with less weight.

(2) NASA – With UCLA as the STTR sponsor, the institute proposed an "Ultra-thin-Ply Composite Technology" to answer NASA's need for a lighter composite sheet. This is carbon nanotube–based and would produce significantly lighter and more damage tolerant sheets than is possible with traditional carbon fiber.

(3) U.S. Navy – The institute is answering a call for advanced composites and is part of a program to provide a more durable ship deck material that will withstand heat from vertical takeoff planes.

Bruin LABS FOR NEURODEGENERATION

The **Bruin** Labs for Neurodegeneration comprise primary labs within the Mary S. **Bruin** Center for Alzheimer's Disease Research at UCLA and collaborative laboratories within the UCLA Department of Neurology and other departments in the David Geffen School of Medicine at UCLA. The **Bruin** Labs are currently located at various locations around the UCLA campus, but they will be centrally located in the Reed Neurological Research Building after the renovations are complete. As envisioned in the development of the **Bruin** Labs for Neurodegeneration, these labs form a collaborative network to study the mechanisms of disease development in Alzheimer's disease and other dementias, identify new drugs to treat these diseases, and innovate new therapeutic approaches for Alzheimer's and related dementias. Over the past year, the research teams, led by S. Thomas Carmichael, M.D., Ph.D., chair of the UCLA Department of Neurology and Frances Stark Chair in Neurology at the David Geffen School of Medicine at UCLA, have made important progress in these three areas.

Novel Drug Development

Varghese John, Ph.D., associate professor-in-residence in the UCLA Department of Neurology, has shown progress in the development of three drugs or drug targets. A drug candidate, ddl110, emerging from discovery research is moving toward the **Bruin** Lab's first Investigational New Drug (IND) application for Alzheimer's in collaboration with a corporate partner. ddl110 works by increasing the levels of the neurotrophic protein sAPPalpha in the brain. This mechanism or molecular approach has not been previously tested in Alzheimer's patients. There is now a planning phase for a nationwide trial on this drug candidate, including at the Mary S. **Bruin** Center.

The major known genetic risk factor for sporadic Alzheimer's disease is expression of the epsilon-4 (4) allele of apolipoprotein E (ApoE4), which is present in about two thirds of patients. Recent studies in Dr. John's lab have shown that ApoE4 expression can lower the levels of a major longevity determinant sirtuin, SirT1. The lab has identified a preclinical agent—A03—that can counteract the ApoE4 effect and reverse the SirT1 decrease in animal models. Further development of this agent and its congeners as a potential drug candidate for Alzheimer's disease is ongoing with support from the National Institutes of Health. Dr. John's lab recently published the discovery of a new strategy to block the spread of the abnormally modified tau protein that leads to neurofibrillary tangles in the disease. This research shows that blocking an enzyme in the brain called nSMase2 can suppress the release of modified tau in

lipid vesicles called exosomes, and thus has the potential to prevent the spread of the tangle pathology and progression of the disease. Further discovery research is needed to see if this could be a clinically viable approach for Alzheimer's disease.

Repurpose Existing Drugs to Treat Alzheimer's Disease

Lin Jiang, Ph.D., assistant professor, UCLA Department of Neurology, has developed a new computational approach of drug discovery by expanding his novel structure-based "docking method" to develop an approach to repurpose existing approved drugs into targeted therapies for Alzheimer's disease. In this approach, Dr. Jiang used advanced computer modeling to identify drugs that target the cell surface receptor for Aβ, the hallmark protein in Alzheimer's disease. This computational approach rapidly identified a class of drug candidates against Aβ receptors, which are already approved for other diseases and are able to cross the blood brain barrier. The class of the brain-penetrating drugs not only inhibits the interaction between the Aβ receptor and Aβ, but also abolishes the toxicity of Aβ. This work is under the second round of revision in *Nature Chemistry*. Dr. Jiang is filing a provisional patent and planning to conduct animal tests to study the safety and efficacy of the drug candidates.

Amyloid-Dependent Tau Aggregation

In the brain of Alzheimer's patients, the two main abnormal proteins, Aβ and tau, interact to cause the disease. The interactions of the two proteins worsen the effects of each protein alone. Dr. Jiang has recently found ways in which Aβ may make the effects of tau worse. Using tau biosenser cells, the lab found that treatment with Aβ oligomers, but not monomers or fibrils, "primed" the cells and made them susceptible to tau seeding. The discovered Aβ-dependent tau aggregation is specific: other amyloid proteins (e.g., alpha-synuclein [aSyn]) cannot induce tau aggregation, and Aβ oligomer cannot induce aggregation of aSyn. These findings in a cell-based assay connect Aβ toxicity to tau spreading in Alzheimer's disease, a currently missing link in the understanding of the disease's pathology.

Structure and Pathogenic Action of Alpha-Synuclein

A key goal in the **Bruin** Labs for Neurodegeneration is to determine common mechanisms of disease that apply across the conditions of neurodegeneration, for example, from Alzheimer's disease to Parkinson's disease to frontotemporal dementias. Alpha-synuclein(aSyn) forms abnormal aggregations in Parkinson's disease and Lewy

body dementia. Unlike Aβ, the toxic elements within aSyn are not well defined. The Jiang lab in the last year has started to use a cryo-electron microscope (cryo-EM) technique to study the fibril structure of aSyn. Dr. Jiang's lab discovered that two aSyn fibril preparations have distinct *in vitro* seeding patterns and different *in vivo* seeded spreading in mouse brains, associated with motor behavior changes. In collaboration with the Z. Hong Zhou, Ph.D., and David Eisenberg, Ph.D., groups at UCLA, Dr. Jiang determined two high-resolution cryo-EM fibril structures of full-length aSyn protein. The unique fibril architecture revealed in the structural studies underlies a new type of aSyn polymorphism, which leads to distinct modes of fibril growth and thus seeding behaviors. This work could set a solid structural basis for new drug development that targets aSyn fibril formation in neurodegenerative diseases.

Nanosystems

Drug delivery to the brain is challenging because the medication has to be delivered to its site of action across the blood brain barrier and then into the neurons for brain diseases. Both Dr. Jiang and Dr. John have developed promising nanotechnology approaches for drug delivery in neurodegenerative diseases. Dr. Jiang designed a nanoparticle that has a receptor on it, which binds to neurons and blood vessel cells. This nanoparticle binds to the receptors of blood vessels in the brain, crosses into the brain, and then binds to neurons and is then internalized—delivering the drug.

Using microfluidic technology Dr. John encapsulates biomolecules, such as proteins, that normally do not cross the blood brain barrier into nanoparticles, which are deformable. These change shape with passage into brain blood vessels and deliver the encapsulated protein to the brain. Work is ongoing in the **Bruin** Labs, in collaboration with the Jiang and John labs in these "nano-cargo" approaches for drug delivery.

New Immune Pathway Signaling in Alzheimer's Disease

In recent studies in which the whole genome was sequenced in Alzheimer's disease patients, a surprising finding was that a mutation in a gene that is present in inflammatory cells in the brain, and not neurons, produced a two-to-three time increase in Alzheimer's disease. This gene is TREM2. This finding suggested that inflammation in the brain in Alzheimer's disease may actually be having a beneficial effect. The **Bruin** Labs funded work in the labs of William Yang, M.D., Ph.D., professor, UCLA Department of Psychiatry and Biobehavioral Sciences, and Daniel Geschwind, M.D., Ph.D., professor, UCLA Department of Neurology and UCLA Department of Psychiatry, and Gordon and Virginia MacDonald Distinguished Chair in Human

Genetics, to determine how TREM2 plays a role in Alzheimer's disease. In this work, their groups recently published a study of the effect of TREM2 gene dosage increase in two mouse models of amyloidosis in Alzheimer's disease in the journal *Neuron* (Lee et al., 2018). This study showed that elevating TREM2 levels can reduce amyloid plaque accumulation, a pathological hallmark of Alzheimer's disease. With detailed sequencing studies, the UCLA groups discovered that the mechanism by which TREM2 overexpression ameliorates amyloidosis is likely through reprogramming of the brain's inflammatory cells (microglia). In the Alzheimer's disease mouse model, increased TREM2 decreases microglial disease genes and upregulates microglial genes that foster clearance of Abeta and suppress the immune response. Importantly, these microglial changes are accompanied by decreased neuronal damage and rescue of impaired memory. This observation was consistent across two different Alzheimer's disease amyloid mouse models. The Yang and Geschwind groups are currently extending these approaches along the goals of the **Bruin** Labs for Neurodegeneration to Huntington's disease and frontotemporal dementia.

Testing Tau Aggregation Inhibitors

Greg Cole, Ph.D., interim director, Mary S. **Bruin** Center for Alzheimer's Disease Research, and professor, UCLA Department of Neurology and UCLA Department of Medicine, is testing tau aggregation inhibitors designed by Dr. Eisenberg. This project uses computer-assisted molecular engineering informed by atomic level resolution to design perfect fit drugs to block the formation of tau aggregates. Dr. Cole's team pretested one of the new drugs in a Drosophila model and found activity with the second generation tau aggregation inhibitor. They are proceeding with mouse model testing, including intranasal delivery methods.

UCLA DEPARTMENT OF NEUROSURGERY

The Department of Neurosurgery in the David Geffen School of Medicine at UCLA, under the direction of chair Linda M. Liau, M.D., Ph.D., MBA, is a leader in advancing patient care, research and education that improve the lives of people with brain diseases and injuries. Over the past year, the **Bruin** funds have enabled Christopher Giza, M.D., a professor of pediatric neurology and neurosurgery and director of the UCLA Steve Tisch BrainSPORT Program, and his team to continue their ground-breaking work with diverse patient populations to uncover the mechanisms of neuroplasticity and brain health across the lifespan. The funding also provided support for **Bruin** fellows pursuing additional research avenues.

Bruin Labs for Brain Health Research

The **Bruin** Labs for Brain Health support important investigations co-led by Dr. Giza and Mayumi Prins, Ph.D., a professor of neurosurgery and director of the UCLA Brain Injury Research Center Education Program. Over the past year, Dr. Giza and Dr. Prins advanced brain health research by developing innovative technologies, discovering biomarkers in both preclinical and clinical research, and enhancing multidisciplinary collaboration through digitized data capture.

In 2017, Dr. Giza was part of a pioneering study whose results were published in the prestigious medical journal *Neurology*. Scientists discovered a new biomarker that may help doctors identify children at risk of poor outcomes after a traumatic brain injury (TBI). Researchers at UCLA and the collaborating institutions observed that after children sustain a moderate to severe TBI, they typically follow one of two trajectories—either steady gains toward normal, pre-injury functioning, or progressive, widespread cognitive decline. Clinical tests have led Dr. Giza's team at UCLA to look at a prolonged, inflammatory process, which causes ongoing damage to the still-maturing brain, as a factor in patients with cognitive decline.

Another recent key finding from Dr. Giza and Dr. Prins is that exercise promotes brain health and recovery, and that optimal treatment for concussion may be related to both pre- and post-injury exercise levels. The team is collaborating with Pepperdine University faculty on complementary studies in the lab and clinic. In addition to exercise, researchers continue to study the metabolic supplement ketone as a possible treatment, particularly for pediatric TBI. Scientists are developing ketone-enriched

beverages that could help children recover and heal faster from brain injury, and a ketogenic diet is already used by Dr. Giza and other pediatric neurologists at UCLA to treat intractable epilepsy.

For severe TBI, current treatment protocols for both adults and children at UCLA involve advanced neurosurgical interventions and a specialized program of neurointensive care. Electronic monitoring and repeated multimodal neuroimaging enable researchers to conduct an intensive care program that assures optimal conditions for the brain as it begins healing. The team has discovered that in concussion cases, the brain goes into a state of reduced neural activity associated with cognitive and behavioral impairments. Dr. Giza focuses on reactivating the injured brain after concussive injury through the use of medications, exercise, behavioral training, nutrition and physical rehabilitation. The combination of basic science and clinical research in the **Bruin** Labs for Brain Health is uniquely suited to test these hypotheses in scientific models and then translate the most successful interventions into treatments.

Bruin Clinic for Brain Health

In addition to conducting research that advances the understanding of brain functionality, Dr. Giza's team is providing state-of-the-art care for patients currently recovering from TBI, including concussion. The team also is collecting data that will offer baseline metrics that can be used to measure the success of these treatments. The **Bruin** Clinic for Brain Health Fund has allowed Dr. Giza and his team to obtain leading-edge technology and provided other support that has been crucial to advancing this important work.

A highlight from the past year was the development of novel approaches to treating persistent post-concussion symptoms (PPCS). One intervention combines two evidence-based treatments into one therapy session. This multidisciplinary treatment utilizes subthreshold exercise and cognitive behavioral therapy (CBT) techniques, enabling neurologists and neuropsychologists to work together to best address a patient's symptoms and underlying conditions. This is the first treatment of its kind that uses the simultaneous application of two treatment modalities for PPCS. It has been shown to reduce appointment visit time while promoting a return to pre-concussion

functioning. A second treatment project involves measuring autonomic dysfunction and anxiety in patients with PPCS; they then undergo a multiweek treatment using remote CBT concurrent with breathing training monitored through a portable carbon dioxide sensor. The entire intervention can be conducted via web-based technology, which has the potential to ease burdensome travel for patients, and the clinic has just enrolled its first two subjects.

The team also conducted its annual preseason neurological histories and physicals for 1,000 healthy student-athletes, which will be used to create a normative database to monitor age-appropriate neurological symptoms, cognition, balance, reaction time, visual tracking and gait. This dataset establishes normal function at different ages in both girls and boys. This project is the seed for the creation of a national normative brain performance registry, through collaboration with investigators at the University of Texas at Dallas and other institutions. In addition, the team has developed and is refining a digital platform to collect preseason neurological exams in the wider community. This digital platform has expanded access to neurological screening, increasing the number of student-athletes that can be tested and ensuring consistent data collection at sites beyond UCLA.

In order to more comprehensively meet the needs of a diverse patient population and improve outcomes, Dr. Giza has added an occupational therapist to his staff. Since joining the team Madison Harris, O.T.D., has improved brain health by addressing patients' individual physical deficits and psychosocial needs and developing treatment plans to help them in their everyday roles and routines.

Bruin Brain Health Fellows

In 2017, the fund supported the inaugural **Bruin** Brain Health Fellow Tiffany Greco, Ph.D., who was recently appointed to an assistant project scientist position in the UCLA Department of Neurosurgery. She is pursuing research on sex, hormones, brain energy metabolism and concussions, and is currently working with Dr. Giza and Dr. Prins. The vast majority of studies on concussion are conducted on male athletes, although there is strong evidence to suggest that men and women experience physiological differences in the way their bodies handle and heal from head injuries. This area of research is vital for understanding how head trauma affects people differently and how brain health differs in women and men. Most recently, Dr. Greco's research was published in the *Journal of Neurotrauma*, *Journal of Cerebral Blood Flow & Metabolism* and *Developmental Neurobiology*.

The newest **Bruin** Fellow is Lindsay Ferguson, Ph.D., who officially started July 1, 2018, but had previously attended the team's research conferences and journal clubs. Dr. Ferguson received her master's degree from DePaul University in 2008 and her Ph.D. from the University of Texas at Austin in 2017. With her extensive translational research experience, Dr. Ferguson will play a leading role in the team's new exercise and neuroplasticity studies. In addition to current support for promising scientists, the testamentary gift establishing the **Bruin** Brain Health Fellows Endowment will ensure that future generations of emerging researchers will receive critical funding for advancing brain health.

Since January 2017, the team had 28 scientific articles published, presented more than 30 scientific abstracts, and gave more than 50 academic and community lectures. Dr. Giza's work also drew significant media attention, including his widely reported June 21, 2017, article in the online edition of *Neuron*, "It's Not All Fun and Games: Sports, Concussions, and Neuroscience." This outlined the direction TBI research is headed and provided Dr. Giza's insights as an expert in the field, emphasizing the importance of an accurate diagnosis in determining the severity of a patient's concussion.

FINANCIALS

Gift Recognition History - by School

June 30, 2018

School	Gifts	Pledges	Planned Gifts	Total
Chancellor's Greatest Needs	$137,850.00	$42,750.00	$0.00	$180,600.00
College of Letters and Science	$100.00	$0.00	$0.00	$100.00
David Geffen School of Medicine	$12,238,180.00	$17,150,000.00	$6,500,000.00	$35,888,180.00
General Campus	$5,000.00	$2,500.00	$0.00	$7,500.00
Henry Samueli School of Engineering and Applied Science	$317,600.00	$7,000,000.00	$0.00	$7,317,600.00
Intercollegiate Athletics	$1,342,180.00	$3,773,000.00	$1,000,000.00	$6,115,180.00
Luskin School of Public Affairs	$1,000.00	$0.00	$0.00	$1,000.00
School of the Arts and Architecture	$400.00	$0.00	$0.00	$400.00
Student Affairs	$111,648.56	$0.00	$0.00	$111,648.56
UCLA Anderson	$6,331,500.00	$8,000,000.00	$3,000,000.00	$17,331,500.00
Total	**$20,485,458.56**	**$35,968,250.00**	**$10,500,000.00**	**$66,953,708.56**

We continue to be incredibly grateful for your generosity and commitment to UCLA. Your dedication to the campus and our community is a wonderful source of motivation, and we are proud to have you as partners in realizing our vision for UCLA's second century. Thank you for all that you have made possible at the university and the enduring legacy you have built here.

REPORT FOR 2018 -2019 ACADEMIC YEAR

C.V. BRUIN FELLOWSHIP FUND

ACTIVITY REPORT

UCLA Anderson
SCHOOL of MANAGEMENT

ADITHI BRUIN, MBA 2019
PERSONAL STATEMENT

Adi Bruin is a second-year Forte Fellow and C.V. Starr Fellow at UCLA Anderson. Born in Manhattan and raised in the Bay Area, she moved to Texas to attend a unique program at Baylor University where she created her own curriculum. She specialized in biology, economics, Spanish, and political science, combining all four in her thesis on Determining the Cost-Effectiveness of Providing Free Prenatal Care to Hispanic Undocumented Immigrants.

Upon graduating, she decided she loved Texas so much she wanted to stay and accepted a role with Oracle in the technology space. There, she ran software contract operations for North America and Latin America, working in English, Spanish, and Portuguese. Beyond work, she also found a true passion for nonprofits volunteering with the Rape Crisis Center of San Antonio, helping them launch the Start by Believing campaign eliminating community stigmas around sexual assault and encouraging survivors to come forward. She spent her summer in New York City as a Business Consulting MBA intern at Adobe helping clients improve their digital strategy.

Adi is a self-proclaimed Pinterest expert and you can find her testing new vegetarian recipes or YouTubeing creative braid tutorials. She loves the warmth and sunshine of LA and is excited to spend her second year back on campus!

KAAVYA BRUIN, MBA 2020
PERSONAL STATEMENT

In Disney's "Fantasia 2000," a wood sprite whose forest has been destroyed rises from volcanic ashes to bring spring back. As a child, that sequence inspired me to plant flowers at school. I would watch movies about Hindu deities along with animated series adapting Christian stories, and I learned that many faiths contain important moral messages. Films and shows informed my beliefs in unity and bettering humanity, beliefs which pushed me to work in social advocacy.

In an interview with Anderson's Center for MEMES, director Steve McQueen said, "Cinema is…there to entertain, first and foremost, but it can educate and challenge." I believe the entire entertainment industry, including television, media, and licensed entertainment brands, can and should educate and challenge.

That's why, at Anderson, I'm focusing on entertainment marketing, specifically in brand and franchise management for franchises that have meaningful and inspiring messages. Before business school, that's what I worked on at The ONE Campaign, a global anti-poverty advocacy organization co-founded by Bono. At ONE, I leveraged entertainment brands and talent relationships to draw public attention to global inequalities and to push for policy change. For example, I pitched entertainment/media companies and talent to sign onto initiatives in support of girls' education and women's economic empowerment worldwide and brought the campaign to events including a Disney/Marvel "Black Panther" event during New York Fashion Week, Paramount Pictures' Corporate Day of Service, and the VIP room at U2's Washington, DC concert. I'm now looking to use my creative and analytical skills to market entertainment brands and franchises that can spark people's imaginations the way films have sparked mine over the course of my life. Like the Disney wood sprite who inspires me, I want to amplify good through culture—beginning at Anderson.

[Student Resumes and fund financials redacted]

UCLAAnderson
SCHOOL of MANAGEMENT

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Each year deserving students, who are facing the ever-rising cost of tuition, count on the generosity of donors like you. With your support, we are able to compete for the very best students. Thank you for the impact you have made on the lives of your fellowship recipients, our top priority at UCLA Anderson.

VIEW YOUR PERSONAL FELLOWSHIP REPORT

"Thank you for your continued financial support making it possible for me to attend UCLA. The last year has been one of the best in my life: from expanding my career prospects to making lifelong friends, my time here has been incredible."

Adithi Bruin
MBA Class of 2019

WATCH A SPECIAL THANK YOU FROM ADITHI

"It is because of your generosity that I'm now able to pursue my long-time dream of working in entertainment, marketing film brands and franchises that I love."

Kaavya Bruin
MBA Class of 2020

WATCH A SPECIAL THANK YOU FROM KAAVYA

Would you like to meet your students?
Please contact Sandy Levin, Director of Stewardship at
sandy.levin@anderson.ucla.edu

We are always striving to improve how we communicate.
Please let us know what you think of our new format by clicking **here**.

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UCLAAnderson
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110 Westwood Plaza, Los Angeles, CA 90095-1481

THANK YOU
A Message from the Director

30 national championships in team sports.

138 individual national champions.

Moving to Division I endorsed by both the Academic Senate and Undergraduate Students, the entire department will begin reclassification to DI in 2020 with completion in 2024.

Dear Members of the UC San Diego Athletics Board,

What a successful year 2017 has been!

With your continued support and constant championing, the level of the UC San Diego Triton Athletics Program continues to rise. Last year, eight Triton teams won conference championships, 125 student-athletes were named to all-conference teams, 33 student-athletes earned All-American honors, five coaches were named Coaches of the Year, and the list goes on.

Over the past 15 years, as members of the UC San Diego Athletics Board, you have fostered the growth and performance of all UC San Diego student-athletes and you have enriched the experience of our campus community. It is directly due to this hard work that our Triton Athletics program continues to gain momentum. As our teams perform at the top of their divisions, I am proud of the fact that our student-athletes keep pace with (or exceed) their peers across campus by all academic measures.

I want to take this moment to commend you for your continued, tremendous efforts for this department. Your work helps secure funding for our student-athlete scholarships, athletic facilities improvements, and other related programming. You engage with our department faculty and staff, mentor our student-athletes, and make yourself available for our events at unparalleled levels.

You are, and continue to be, the base of our pyramid of success.

With many thanks,

Earl W. Edwards
Director of Athletics
UC San Diego

SCHOLARSHIPS & FACILITIES
Moving To Division I

TRITON ATHLETICS SCHOLARSHIPS
grow in number and impact.

The scoreboard only tells half the story. UC San Diego Athletics is committed to the physical, intellectual, and personal development of students as we bolster campus spirit and pride. Across our 23 men's and women's teams, student-athletes are on par academically with the general student body with a similar distribution of majors. Now, our Tritons are ready to level up, transitioning into an NCAA Division I program that could pit the Big West Conference against our best — and brightest.

$479,753 Triton Scholar-Athlete Awards sum total
194 Individual Scholar-Athletes
$2,235 Average Scholar-Athlete Award Amount

Triton Athletics Scholarships are a critical part of this success.

"The David R. Schink Scholarship has been able to help alleviate the financial burdens associated with academics and even athletics," said senior Justin Zhang who plays on the men's tennis team and is currently applying to medical schools. "Having additional funds has allowed me to pay for textbooks, racquet string jobs, tutoring sessions, and more."

Outstanding scholar-athletes make up all Triton Athletic teams.

FACILITIES FOR THE FUTURE
hold many investment opportunities for partnership.

Plans for RIMAC Arena will transform the existing space (above) into a showcase for Triton Athletics and the university as a whole.

An artistic rendering showing some of the proposed facilities upgrades at RIMAC.

Gifts raised by the UC San Diego Athletics Board have helped create and maintain a number of athletic facilities at UC San Diego—which includes the Alex G. Spanos Athletic Performance Center, the Triton Ballpark, the Triton Softball Field, and renovations to Triton Track and Field stadium with a new video board and pole vault terraces. As the university aligns with the elite group of institutions and athletics programs that is NCAA Division I, facilities improvements are top of mind. These upgrades will reflect our student-athletes' level of excellence, allow for greater training and conditioning opportunities, and exceed the competition and spectator standards held by visiting teams, fans, and recruits.

New gifts will help transform and remodel RIMAC Arena into a showcase for Triton Athletics and will offer a place for UC San Diego to unite the campus and community as a whole. Additionally, new bleachers and a redesigned, see-through barrier between the concourse and seating areas will create a more comfortable and enjoyable viewing experience, while an additional skybox will offer the opportunity to host an increased number of guests. A cutting-edge 50 x 15 foot video board at the north end, a 300 square foot production studio, and new portable basketball hoops allow RIMAC flexibility to be a true multi-purpose environment.

These modernizations not only enhance the experience for Triton student-athletes and spectators, but they put us on par with other Division I schools as well as offer increased opportunities to integrate corporate and named sponsorships. Your support in these endeavors is crucial and helps us enhance the experience for Triton student-athletes and spectators alike.

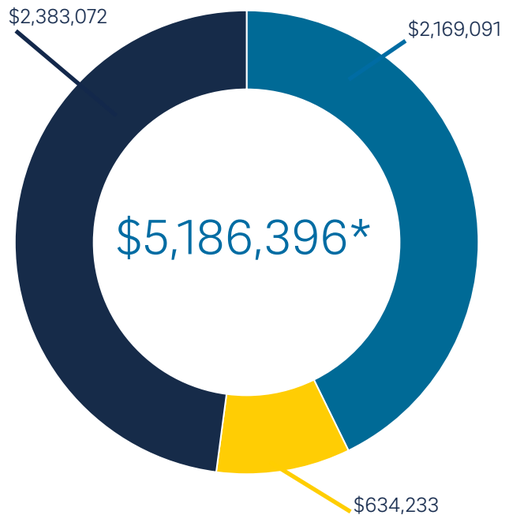
FINANCIAL SUMMARY
Your Gifts Make a Difference

At the University of California San Diego, challenging convention is our most cherished tradition. The Campaign for UC San Diego is a university-wide comprehensive fundraising effort to transform the student experience, our campus, and ultimately the way humanity approaches problems and develops solutions. Launched in March of 2017, the Campaign aims to raise $2 billion in philanthropic support by 2022. At present, 75% of the goal has been met with $1,516,853,497 raised though gifts from 109,697 donors.

Triton Athletics has its own stake in the campaign, and its own goals to continue to increase gifts for student scholarships, facilities, and programs support. All gifts since July 1, 2012 are included in the Campaign totals, and we are proud that donations from the UC San Diego Athletics Board have contributed to the overall momentum and success of the Campaign. As we pass the halfway point in the 10-year effort, gifts to Triton Athletics are gaining speed in a large part due to the efforts of our past and present athletics board members who together have a lifetime recognized giving to athletics in excess of five million dollars.

Our outstanding progress is the direct result of the tremendous support of people like you. Your gifts, as well as those from generous donors at every level contribute to The Campaign for UC San Diego. Your efforts on the athletics board are essential to this process. You not only elevate the entire Triton athletics program, you help shape our student-athletes into true Triton leaders.

CUMULATIVE ATHLETICS BOARD SUPPORT
TOTAL RECOGNIZED GIVING



- Athletics Programs Support
- Student Support and Scholarships
- Capital Projects and Equipment

*total includes all giving with no recognition date constraint and every actual dollar from members of current, and former, athletics board to intercollegiate athletics.

Continue the nontradition.

With your help, UC San Diego will be ready for the challenges and excitement of Division I competition. While our Tritons are already one of the country's top NCAA Division II programs, your philanthropic support of the Campaign for UC San Diego moves us into an elite tier of collegiate competition, attracting top student-athletes to test themselves among the best in the Big West and in the academic arena.

Learn more at campaign.ucsd.edu

The Campaign For
UC San Diego

UC San Diego ATHLETICS

IMPACT 2018

Moving Forward

What the Future Holds for the Head and Neck Cancer Center

The past year has been exciting and exceptionally productive, and we look to our next steps with optimism and an entrepreneurial spirit. It is because of your support that we have been able to make such great strides in such a short timeframe.

As we continue to evolve, program priorities include establishing a head and neck surgical oncology fellowship, which will provide up-and-coming cancer care leaders with the opportunity to work side-by-side with our experts; contribute to novel discoveries, treatments and technologies; and hone their skills in an innovative, science-driven clinical setting. We also aim to create startup funds and pilot funds for research faculty and younger faculty members. These will fuel investigative endeavors not typically supported through grant and government funding and create a powerful foundation for the game-changers of tomorrow to begin forward-thinking work *today*.

Learn more.

Pilar Gose | Director of Development
UC San Diego Health Advancement
T: 858-246-1328 | E: pgose@ucsd.edu

9500 Gilman Drive #0937
La Jolla, CA 92093-0937
health.ucsd.edu

At the University of California San Diego, challenging convention is our most cherished tradition. The Campaign for UC San Diego is a university-wide comprehensive fundraising effort to empower the next generation of innovators to blaze a new path toward revolutionary ideas, unexpected answers, lifesaving discoveries, and planet-changing impact. All gifts since July 1, 2012, have already contributed to the momentum and success of the Campaign.

UC San Diego respects your privacy. If you would like to be removed from future UC San Diego Health fundraising communications, please contact us at optout-hsdev@ucsd.edu or 800-588-2734.

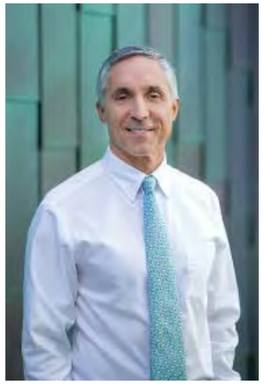
The Campaign For
UC San Diego

YEAR IN REVIEW

Head and Neck Cancer Center
Moores Cancer Center at UC San Diego Health

UC San Diego Health

Thank you.



A Heath Care Leader

UC San Diego Health is ranked seventh in California for 2017 – 2018 in *U.S. News & World Report's "Best Hospitals"* report, and is among the best in the nation in eight specialty areas.

Top Cancer Innovator

As the only National Cancer Institute-designated Comprehensive Cancer Center in the San Diego region, Moores Cancer Center at UC San Diego Health is prominent among the leading institutions in the nation dedicated to scientific innovation and clinical excellence.

One of 100

UC San Diego Health System as ranked by "Great Hospitals in America" (*Becker's Hospital Review*).

Dear Friends,

It is a pleasure to share the 2016 – 2017 annual report for the Head and Neck Cancer Center within Moores Cancer Center at UC San Diego Health with you. In the pages ahead, you will see highlights on the innovative physician-scientists, incredible exploration and forward-thinking philanthropic partners contributing to our ability to improve care and redefine how we understand and treat head and neck cancer.

I am particularly proud to share how much our team has grown in the past year. Our focus is not just on hiring outstanding physicians, but on building a comprehensive, interdisciplinary team that facilitates the very best patient experience and outcomes. With an exemplary group of doctors, patient navigators, speech therapists, nutritionists, and basic and translational science researchers, we address every care aspect critical to supporting our patients and their loved ones.

The center has also had an outstanding year translating research ideas into novel and viable treatment options for our patients, resulting in more than $26 million in committed funding to head and neck cancer research. For example, Tina Sacco, MD, is leading the first-ever multi-center clinical trial combining immunotherapy and targeted molecular therapy for recurrent and metastatic head and neck cancers using pembolizumab with cetuximab. This is just one of the more than 20 active trials we have in operation. Also in the research realm, I want to take a moment to recognize Mark and Susan Mulzet, who are dear friends of our team and visionary philanthropic partners to our exploratory efforts. Through a generous contribution to launch the Mulzet Cure for the Cure Initiative, Mark and Susan have empowered us to pursue collaborative, groundbreaking research that will help deepen our understanding of the potentially unpleasant side effects of head and neck cancer therapy, and improve quality of life for the many patients we are helping to fight this disease.

We — our faculty, our staff and friends like you — are truly a united front in the fight against cancer. In just two short years, we have experienced exponential growth, and are only continuing our upward trajectory. I am excited to share a year of wins and discoveries with you, and look forward to many more.
Thank you.

Sincerely,

Joseph A. Califano III, MD
Director, Head and Neck Cancer Center
Professor and Vice Chief,
Division of Otolaryngology-Head and Neck Surgery

Rocking Toward a Cure with Clinical Trials

Inside Rikki Rockett's Triumph Over Cancer

Two years ago, Rikki Rockett, drummer for the legendary rock band Poison, was struggling to overcome what he thought was a long-term sinus infection. However, when he sought medical care, Rockett received devastating news. He had squamous cell carcinoma of the tongue. His doctors in Los Angeles placed him on a chemotherapy-radiation regimen, and Rockett strove to lead a normal life and stay strong for his two young children, Jude and Lucy. But a PET CT scan in February 2016 revealed that despite treatment, his cancer was spreading.

In the midst of discussing surgical removal of the tongue as a potential next step, one of Rockett's doctors suggested an alternative. Moores Cancer Center physician-scientists Ezra Cohen, MD, and Sandip Patel, MD, were conducting a clinical trial for an experimental combination immunotherapy treatment, only available at a few institutions in the country. Although the mix of Keytruda and epacadostat was an uncertain option, Rockett sprang into action and underwent testing to determine his viability as a candidate, and was soon accepted into the trial. Even after his first treatment, results were promising, and in July 2016, Dr. Cohen told Rockett the best possible news — his cancer was gone.

Rikki Rockett and Dr. Ezra Cohen

While immunotherapeutics are showing great potential across a growing array of cancer forms, it may take years before they can truly replace existing standards of care. But for Rockett and the many other patients who have immunotherapy as a part of their treatment plan, that potential is pointing toward a vibrant and cancer-free future.

As Rockett continues his treatment through the end of the two-year trial, he serves as a passionate and valued advocate for investigative efforts into emerging immunotherapy possibilities — many of which are happening right here at the Head and Neck Cancer Center. "My hope going forward is that by talking to other cancer patients, I might be able to lessen their pain and suffering," he comments. "If I can help anyone else, it would help give reason to what I went through."

Helping Guide The Way

Our Hands-on Approach to Patient Navigation

We are proud to be one of three Moores Cancer Center programs piloting The Lynn and Richard Gordon Family Patient Navigation Program. The Head and Neck Cancer Center program, guided by Patient Navigator Montserrat Noboa, offers dedicated advocacy, information and solutions services to help patients and their loved ones more easily cope with the many complexities of a cancer diagnosis.

The pilot program emphasizes tailored support from before the first appointment and along the continuum of care, and creates a patient experience that drives proactive, rather than reactive, care. Services include education and research related to diagnosis or treatment options; translating medical terminology; serving as a communications liaison with patients' care teams; obtaining referrals to community and support services; arranging palliative care, hospice and home care; and providing emotional and psychological support.

We are thrilled to bring this comprehensive solution to our patients, and are thankful to Lynn and Richard Gordon and their family for their dedication to redefining personalized cancer care.

Finding a "Cure for the Cure"

How Mark and Susan Mulzet Used Philanthropy to Inspire a Revolution

Although saving lives is the chief goal for us at the Head and Neck Cancer Center, improving our patients' quality of life is also critical. There is a clear need to mitigate side effects and improve the day-to-day for patients with long-term head and neck cancer treatment toxicity.

Mark and Susan Mulzet recognized this need for a solution — a "cure for the cure," as they called it — and expressed their vision to create a dedicated research fund to Dr. Califano and the center team. After collective strategizing, brainstorming and assembling an interdisciplinary team of experts, the Mulzets' forward-thinking generosity accelerated the new Mulzet Cure for the Cure Initiative, which will find progressive therapies that drive greater survival and healing and deliver the highest caliber of patient-centered care.

A commitment of $3.15 million is fueling three initial projects over four years. Led by Dr. Califano; Dr. Gutkind; Liza Blumenfeld, MA, CCC-SLP, BCS-S; and Catriona Jamieson, PhD, MD, the projects function independently but contribute to collaborative goals. Each will culminate in a clinical trial phase that centers on better analyzing patients' perceived quality of life, developing novel precision therapies or exploring options for stem cell treatments. This initiative will help ensure that when the ultimate solution for head and neck cancer is discovered, it will fully eradicate the disease and the unpleasant side effects current treatments can present.

The Mulzet Cure for the Cure Initiative is a prime example of how philanthropic partnerships can shape, innovate and redefine the future of cancer care, and we are incredibly grateful to Mark and Susan for their integral role in bringing concept to reality.

Introducing Ryan K. Orosco, MD

Continuing Excellence in Innovation and Patient-Centered Care

The Head and Neck Cancer Center is pleased to welcome Ryan K. Orosco, MD, as the newest member of our faculty. Dr. Orosco brings with him a blend of research talent and ingenuity and a passionate dedication to comprehensive, individualized care that will serve our patients in the immediate and long terms.

Dr. Orosco completed fellowship training in head and neck cancer and microvascular reconstruction at Stanford University School of Medicine, following residency training in otolaryngology at UC San Diego School of Medicine. He received his medical degree from Johns Hopkins School of Medicine. Dr. Orosco is a board-certified head and neck surgeon who specializes in the surgical treatment of benign and malignant tumors and complex reconstruction of the head and neck using advanced and minimally invasive reconstruction techniques.

Presently, Dr. Orosco is co-leading a translational research laboratory devoted to advancing the field of robotic surgery. In addition, his work at the UC San Diego Contextual Robotics Institute within UC San Diego Jacobs School of Engineering focuses on melding engineering and medicine. Dr. Orosco's research has been featured in numerous peer-reviewed publications.

Our Faculty

Medical Oncology
Anjali Bharne, MD
Ezra Cohen, MD*
Gregory Daniels, MD, PhD
Kate Gold, MD
Scott Lippman, MD
Assuntina Sacco, MD
Fareeha Siddiqui, MD

Radiation Oncology
Loren Mell, MD*
Doug Rahn, MD
Parag Sanghvi, MD, MSPH
Andrew Sharabi, MD, PhD
James Urbanic, MD

Surgical Oncology
Kevin Brumund, MD
Joseph A. Califano III, MD
Charles Coffey, MD
Ryan Orosco, MD

Research Director
J. Silvio Gutkind, PhD*

Clinical Informatics Specialist
Celia Ramsey

Pathology
Grace Lin, MD
Alfredo Molinolo, MD, PhD

The Lynn and Richard Gordon Family Patient Navigator
Montserrat Noboa

Program Administrator
Jayna Athas

Social Worker
Yuko Abbott, DSW, LCSW, OSW-C

Speech Language Pathology
Liza Blumenfeld, CCC-SLP, BCS-S*
Kristen Linnemeyer, CCC-SLP

Nutrition
Patricia Rubio, RD, CNSC

Survivorship Nurse
Katrina Clynch, NP

*denotes center co-directors

Building our Legacy

Two Years of Innovation and Growth

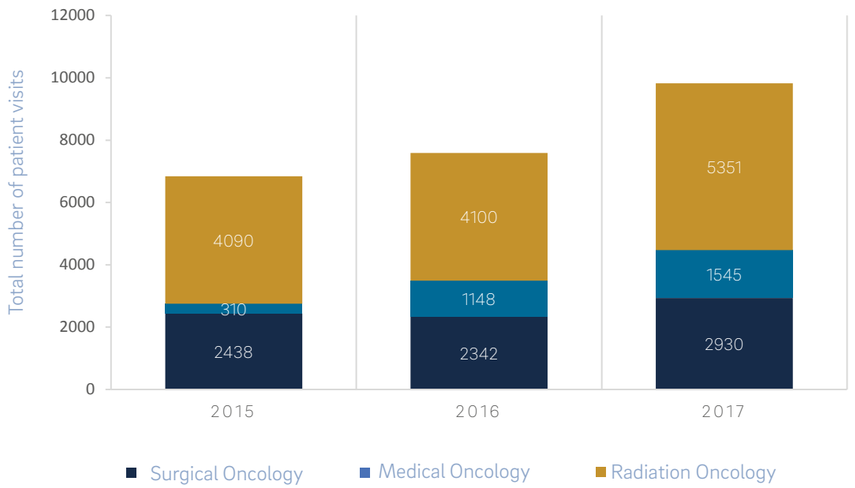
At the Head and Neck Cancer Center, ensuring patient quality of life is paramount, and every member of our team passionately contributes to care. We are a living lab and a hub for advanced research, and are uniquely positioned to recruit exceptional students, residents and fellows to bring fresh ideas and novel solutions into our research and patient care initiatives.

Despite being founded just two years ago, we have already developed a strong foundation of excellence and experienced a high degree of growth — most importantly, in our ability to provide an ever-increasing number of patients with access to leading-edge care. In 2015, we saw 2,991 patients. In 2016, that number rose to 3,699 and increased further in 2017, serving 4,684 patients. That is a 57 percent increase in patient visits since our beginning, with a leap of 27 percent from 2016 to 2017 alone.

With exciting research, education and clinical efforts underway and in development, we eagerly anticipate continued progress in this area, and we project offering comprehensive care to even more patients from San Diego, across the United States and around the world in the coming year.

Head and Neck Cancer Center Visits

by year and sub-specialty



Promising Initiatives at the Head and Neck Cancer Center

Moores Cancer Center and the Head and Neck Cancer Center are the nucleus of many exciting developments and programs shaping the future of cancer care. Key discoveries and advances happening right now include the following:

Combining Radiation Therapy and Immunotherapy

Andrew Sharabi, MD, PhD, is a physician-scientist and board-certified radiation oncologist at Moores Cancer Center and a member of the radiation oncology team at the Head and Neck Cancer Center. He was recently recruited from Johns Hopkins University, where he published one of the first studies combining focused radiation therapy with a new Food and Drug Administration-approved immunotherapy. This work led to a new method of treating cancer, which he terms "immuno-radiation," and he has successfully translated his findings into the clinical setting. He is currently the principal investigator for two clinical trials focusing on immuno-radiation, and is also developing novel immunotherapies and combination strategies to apply across the Head and Neck Cancer Center and beyond.

Shorter Radiation Treatment Times

Along with Dr. Sharabi, Loren Mell, MD, and Parag Sanghvi, MD, are some of the first UC San Diego Health physicians to use a next-generation radiation therapy technology that reduces treatment time by approximately 20 percent and significantly improves accuracy. The Halcyon™ system is only available at two health institutions in the world, and its multiple forms of therapy empower physicians to personalize patients' care and choose the most efficient approach for their exact needs. Because of its unique equipment, the system's radiation beams sync with the exact size, shape and position of the targeted tumor, offering more precise treatment and reducing effects on healthy tissues.

Targeting Neoantigens with Precision Immunotherapy

Ezra Cohen, MD, is leading a bench-to-bedside effort in collaboration with La Jolla Institute colleagues Bjoern Peters, PhD, and Stephen Schoenberger, PhD, that has resulted in the development of a unique technology platform based on genomic sequencing, bioinformatic analysis and functional immunology. The platform is able to identify neoantigens, mutations only expressed in a patient's tumor and not in normal tissues, to boost the power of individual patients' T cells to combat cancer cells, and will be targeted in clinical trials focused on advancing novel immunotherapeutics.

Leading the Way in Oral Cancer Prevention and Detection

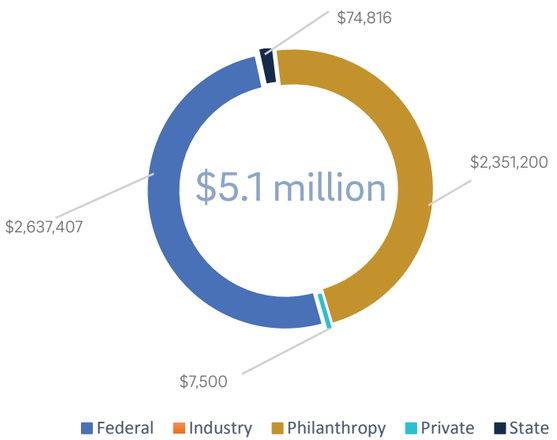
There is an urgent need to develop a way to prevent oral premalignant lesions from progressing into oral squamous cell carcinoma, a disease that results in more than 250,000 deaths each year worldwide. J. Silvio Gutkind, PhD, made a fundamental discovery that the activation of the mTOR signaling network is the most frequently dysregulated molecular mechanism in oral cancer and oral premalignancy. His team also found that by repurposing metformin, which is safely used by millions of patients with type 2 diabetes, we could inhibit mTOR signaling, and that metformin displays potent chemopreventive activity in oral cancer models. Based on these findings, Scott Lippman, MD, director of Moores Cancer Center, recently launched a National Institutes of Health (NIH)-supported Phase 2a clinical trial to explore the potential use of metformin for oral cancer prevention.

In addition, a team of experts led by Dr. Gutkind received an NIH R01 grant to elucidate the molecular mechanisms by which metformin acts on oral premalignancy and cancer. This effort is expected to help identify biomarkers for predicting and monitoring clinical response, provide a rationale for new precision chemoprevention strategies, and find methods to prevent or overcome drug resistance.

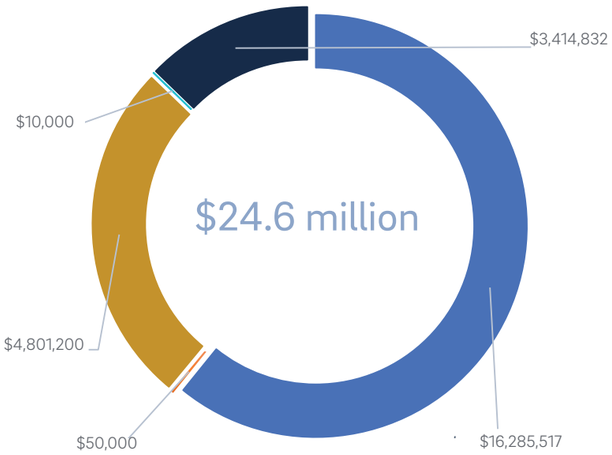
Dr. Califano is also leading a multi-center NIH-sponsored trial to evaluate a spit test for oral and throat cancer in collaboration with Vigiliant Biosciences. The test requires only a small amount of saliva, can give results within ten minutes, and is designed for early diagnosis and detection. This is a promising and viable option for a simple test for head and neck cancer. If proven effective, it will be applicable for use in the U.S. as well as in developing countries without the resources to conduct early diagnostic testing.

x21 Active clinical trials currently underway in Head and Neck Cancer

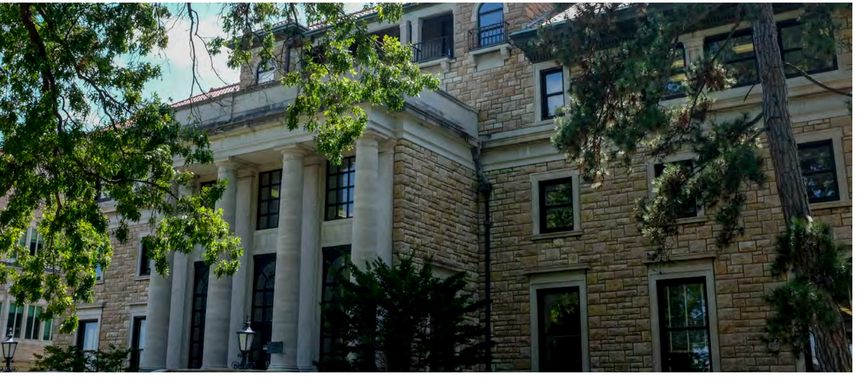
TOTAL AWARDED FUNDS
in Fiscal Year 2018



TOTAL COMMITTED FUNDING
for the Next Five Years



UMKC FOUNDATION



LETTER FROM THE **INTERIM PRESIDENT**

Thank you for your enduring support of students, priority programs and a culturally diverse environment that makes UMKC a place for innovative thinking and groundbreaking discoveries.

We are pleased to provide this annual summary of your endowed fund and deeply appreciate your ongoing investment. Together, we are changing the face of our university and creating a premier experience for those we serve.

Please take a look at how your generous gifts have been spent this past academic year and the ways you have directly helped students accomplish their goals with less financial burden.

- Endowment pool overview
- Investment performance
- Use of funds statement
- Annual financial report

If you have any questions about this report, please call the UMKC Foundation at 816-235-5778.

With more than $40 million in funds raised this past year, the impact of your gifts can be felt every day throughout our campus and communities. We are truly grateful for your continued commitment to UMKC.

With sincere thanks,

Jay M. Wilson
Interim President
UMKC Foundation

ENDOWMENT IMPACT REPORT

THANK YOU

FOR YOUR DEDICATION TO UMKC

The University of Missouri-Kansas City Foundation, acting as a separate organization, works collaboratively with all entities to encourage philanthropic support for the University of Missouri-Kansas City while carrying out the donor's wishes in perpetuity.

UMKC | UNIVERSITY OF MISSOURI-KANSAS CITY FOUNDATION

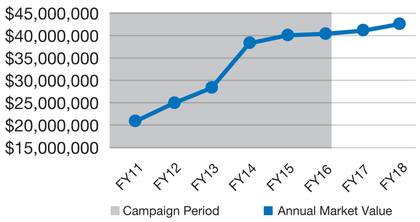
UMKC | UNIVERSITY OF MISSOURI-KANSAS CITY FOUNDATION

UMKC FOUNDATION

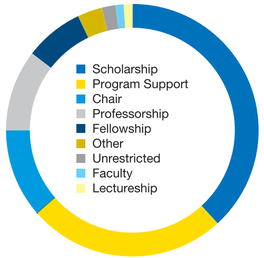
ENDOWMENT POOL **OVERVIEW**

Of all forms of private giving, endowments are some of the most influential investments for higher education by providing both an immediate and continuous impact on the university. Endowed funds allow for permanent financial foundations that create living legacies that span generations. The UMKC Foundation's endowment pool produces earnings to support scholarships, professorships, program support, research and other learning opportunities. This is an essential perpetual funding component in the midst of budget fluctuations and the economy as a whole. The primary investment objective is to exercise fiduciary responsibility while maintaining the purchasing power of the UMKC Foundation's endowment pool to meet current and future spending requirements. The endowment pool must be managed properly in order to provide ongoing support of endowed programs in perpetuity.

Endowment Market Value Growth



Endowments by Purpose



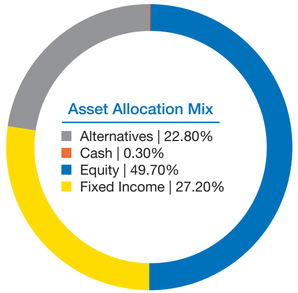
ENDOWMENT IMPACT REPORT

UMKC FOUNDATION

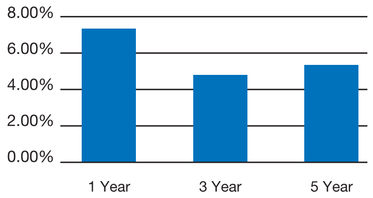
INVESTMENT PERFORMANCE

With a 7.7% return during this fiscal year, the UMKC Foundation's endowment pool outperformed its blended benchmark of 60% global equities (as measured by the MSCI ACWI) and 40% fixed income (as measured by the Barclays Aggregate Bond Index). The equity portion of the endowment pool generated a fiscal year return of 12.1%, as equity markets continued to exhibit positive performance supported by corporate earnings growth (driven partially by U.S. tax reform), solid macroeconomic data, and generally favorable monetary policies from global central banks. The income portfolio of the endowment pool returned 1.3% during the fiscal year, as fixed income sectors continue to face headwinds from higher policy rates due to concerns of inflation. The endowment pool's alternative mix, designed to provide additional portfolio diversification with investment strategies not directly correlated to public equity and fixed income markets, returned 5.5% during the fiscal year. The alternative pool benefited from positive security selection and portfolio level hedges designed to provide downside protection during periods of volatility. The UMKC Foundation's endowment pool continues to be managed in a diversified manner covering global equities across all market capitalizations, and fixed income strategies biased towards shorter-duration, floating-rate high yield, and flexible investment mandates to limit exposure to higher interest rates. We are pleased with the fiscal year return and remain committed to seeking attractive risk-adjusted returns over full market cycles.

Asset Allocation Mix



Annualized Endowment Pool Returns



ENDOWMENT IMPACT REPORT

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Mission, Vision and Promise

Our Mission
To foster a culture that inspires philanthropy to achieve university priorities.

Our Vision
To be the valued and trusted partner that inspires, enlists and unites philanthropic support for Kansas City's premier urban university.

Our Promise
- *Unite donors and dreams*
- *Operate with integrity*
- *Value our team*
- *Deliver excellence*

Contact Us

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202 Administrative Center
5115 Oak Street
Kansas City, MO 64112
816-235-5778
contact@umkcfoundation.org
umkcfoundation.org

ALWAYS **GRATEFUL**

UMKC Foundation
Appreciation Report 2017-18

UMKC | UNIVERSITY OF MISSOURI-KANSAS CITY FOUNDATION

"Gratitude bestows reverence, allowing us to experience everyday epiphanies, those transcendent moments of awe that change forever how we experience life and the world."

JOHN MILTON

If gratitude inspires happiness, then the UMKC Foundation is overflowing with joy! Thanks to your support of so many areas of UMKC, our students and faculty are experiencing new paths, greater ambition and more impactful results than ever before.

This past year brought 646 scholarships, 51 filled endowed chairs and professorships, numerous renovated spaces for learning and plans for new facilities that will allow necessary growth for future generations. Recently, we broke ground for the School of Computing and Engineering's new Robert W. Plaster Free Enterprise and Research Center — the result of $32 million in donor and state contributions. The newly established UMKC Health Sciences District brings together health-care partners in the Hospital Hill area. Working as one, they will create new potential for collaboration on research, grants, community outreach and shared wellness for employees, faculty, students and surrounding neighborhoods. And with our theatre department recently joining the Conservatory of Music and Dance, we are optimistic about the reality of a new campus building that will house the university's renowned arts programs and performances.

None of our progress would be possible without our loyal donors. The budgetary challenges we face will be even greater, and philanthropic support will become even more critical to meet the needs of the university and community.

For your ongoing generosity, for the life-changing impact of your gifts, for your steadfast belief in the future success of UMKC and its students — we will be always grateful.

Growth Through Change

When I look back on the 2017-2018 academic year at the University of Missouri-Kansas City, change is the word that first comes to mind.

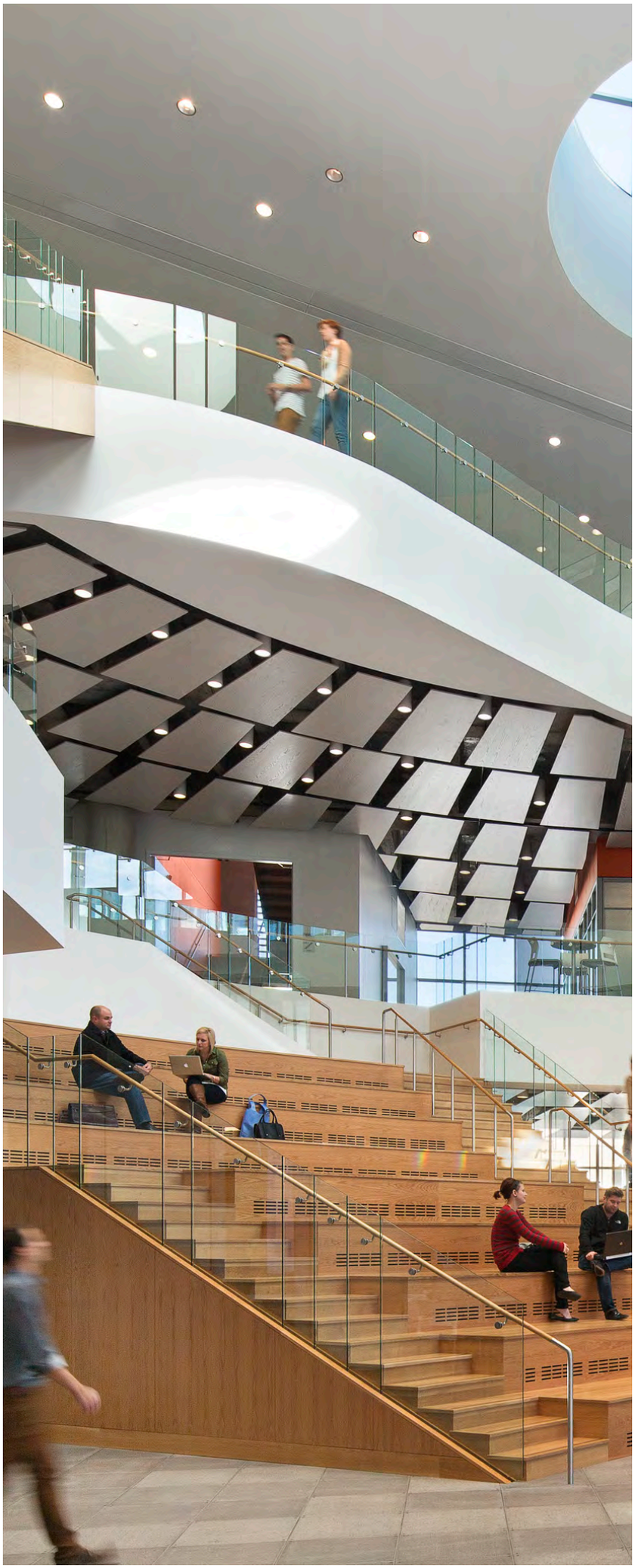
Change is good and, in many cases, change presents new and exciting opportunities.

We have witnessed the selection of a new leader for our university, C. Mauli Agrawal. We have also welcomed two new deans: Diane Petrella at the Conservatory of Music and Dance and Barbara Glesner Fines at the School of Law. We celebrated and thanked our former UMKC Foundation President Steven Norris for his stellar fundraising efforts on behalf of this great university. Finally, we are grateful for the outstanding work of Provost Barbara Bichelmeyer, who served as interim chancellor during this evolution. Her leadership and guidance allow us to carry on our mission of serving the thousands of alumni and donors who continue to ensure UMKC is Kansas City's University.

As we have said goodbye to friends of this institution and hello to new faces, we have you — our donors — to thank for remaining the core element of our operation. Your generosity has led to more than $41 million in new gifts and pledges this past year, and we look forward to preparing for the next great chapter in UMKC history.

Sincerely,

JAY WILSON
Interim President, UMKC Foundation



"Gratitude is thankfulness expressed in action."

WILLIAM GEORGE JORDAN

"As a student who emigrated here from Africa, I always dreamed of going to college to become a human resource manager. I was not sure if a college education would be possible because I grew up in a single-parent household. Due to donors like you, I was able to graduate summa cum laude with a bachelor's degree in business administration. As the first person to attend college in my family, it is my lifelong dream to keep moving forward by pursuing an MBA degree and working to resolve employee concerns regarding hiring, payroll and benefits.

I have developed skills to adapt to any professional demand. These positions have afforded me the opportunity to be a flexible and confident critical thinker who is able to handle stressful situations.

In addition to my educational and professional experiences, I have learned to give back to the community by volunteering. It is my dream to work at a nongovernmental organization (NGO) where I can do something I am passionate about and still give back to the community.

This scholarship will play an important role in achieving my educational and professional goals. Because of your generosity, I will be able to spend more time on my studies by reducing the number of jobs I have to work.

Thank you for believing in and investing in the Bloch School and the future of students like me."

NAOMI MUSEMBI

B.A. Business Admisitration, Henry W. Bloch School of Management '13
Current MBA student, anticipated graduation-2019

"It has been a great honor and privilege to hold the title of Dr. George Tanaka Hawaii Professor of Restorative Dentistry. I am so proud and honored to be at the UMKC School of Dentistry and work with great educators who deeply care about the students and our profession. I feel the faculty are the main framework of a university. This position has allowed me to help promote and develop faculty who in return give so much back to our school, our department and the students."

CYNTHIA S. PETRIE, D.D.S., MS, FACP

Chair, Department of Restorative Clinical Sciences
Dr. George Tanaka Hawaii Professor
Diplomate, American Board of Prosthodontics
UMKC School of Dentistry

"Gratitude makes sense of our past, brings peace for today and creates a vision for tomorrow."

MELODY BEATTIE

Setting the Standard in Broadcasting

The vibrant Communication Studies program at the University of Missouri-Kansas City consists of talented and recognized faculty and an engaged and diverse student population. Passionate about covering the news, investigative reporting and in-depth personal storytelling, our program's students have the skills to succeed in broadcasting. But a lot of their success depends upon much-needed renovations of the video and audio studios.

The last significant update of the video and audio studios was in 1998. Originally designed for the analog broadcast world, the video studio was outdated for the creation of digital, high definition video, which is now the industry standard.

Recent donations have allowed us to begin replacing critical equipment. The results are dramatic.

"Having access to the new studio will make getting experience with the technology and equipment so much easier and enjoyable. My classes are more interactive and make me and other students like me, eager to attend," says Ciara Pate, a Communications Studies sophomore.

"As a communications major with an emphasis in journalism, I would like to go into broadcasting, and having a chance to understand this technology will make me ready for this field on both sides of the camera," Pate added.

Donor Impact by the Numbers

2017-2018 Fiscal Year

July 1, 2017 through June 30, 2018, the UMKC Foundation received

$41,198,050

96% *from* INDIVIDUALS

3% *from* BUSINESSES

1% *from* FOUNDATIONS

how the gifts were designated

- **62%** *programs*
- **17%** *students*
- **16%** *unrestricted*
- **9%** *facilities*
- **5%** *faculty/staff support*
- **1%** *research*

FY 2017 BY THE NUMBERS

24,893 *total donors*

92,347 *total gifts*

FACULTY AND STAFF DONATIONS

$613,673 *total raised*

1,013 *total donors*

5,803 *total gifts*

ALUMNI DONATIONS

$2,511,760 *total raised*

5,510 *total donors*

202 Administrative Center, 5115 Oak St., Kansas City, MO 64112 | 800-662-UMKC | umkcfoundation.org
Relay Missouri 800-735-2966 (TTY) FOUN 18052976

The University Of Queensland
AUSTRALIA

NOT IF, WHEN.

THE CAMPAIGN TO CREATE CHANGE

2017
Donor Impact Report

Message from the

Vice-Chancellor and President

Throughout our shared history, donors like you have contributed to new opportunities for countless students, provided richer teaching environments, and powered world-class research.

In 2017, donors continued their legacy of support by contributing to life-changing projects at The University of Queensland. Thanks to this generosity, 32 deserving students, some of whom overcame homelessness and refugee status to attend university, were supported through the new Aspire Scholarship program.

Together, we also reached a key milestone with the Young Achievers Program as it celebrated 71 students supported through to graduation. Donor funding also accelerated world-first clinical trials in a variety of areas, including patient trials for a new rheumatoid arthritis treatment and a trial to determine the amount of exercise required to reverse brain ageing.

In 2017, you also helped us make history with the launch of UQ's first philanthropic campaign. *Not If, When* – the Campaign to Create Change is an initiative that aims to connect donors with the causes they are passionate about and increase the impact we can achieve together.

Now more than ever, donors shape the world our children and grandchildren will live in. As your partner in creating change for our community, Queensland, Australia, and the world, we connect you with the people and resources that only a world-leading teaching and research institution can provide.

When it comes to support for our students, researchers and teaching, every gift, regardless of size, has an impact, is noticed and is appreciated.

Thank you for everything you have done in 2017. I hope that together, we can continue to ensure our greatest days lie ahead.

Professor Peter Høj
Vice-Chancellor and President

Not If, When – the Campaign to Create Change

What is the campaign?

Over our 107-year history, the partnership between donors and UQ has had an extraordinary impact on our community, Queensland, Australia, and the world.

While we have come a long way, there is so much more to do and so much more that requires urgent support. We want to ensure that individuals, families and organisations who share our values and vision choose UQ as their trusted partner to achieve their vision for a better future.

The *Not if, when* campaign is an ambitious philanthropic effort to achieve this transformational impact. It is the first comprehensive philanthropic campaign in the University's history and will continue for several years as we collectively strive to achieve our common goal for a better world.

Like you, we will not stand by and hope for the best. We firmly believe that by proactively taking action, together, our greatest days lie ahead.

Not if, when.

What are the campaign priorities?

The goal of the campaign is to galvanise the community and our alumni, and to help raise the significant funds required for three key priorities:

- **Empowering student success** through life-changing scholarships, work experience and study opportunities.
- **Transforming teaching and learning** by attracting and retaining the best academic leaders and providing innovative and effective learning environments.
- **Driving discovery and impact** because from science and sustainability to health and humanities, UQ research outcomes have had and will continue to have a significant impact on people's lives, all over the world.

To learn more about how you can make a genuine difference, visit

uq.edu.au/giving

THE UNIVERSITY OF QUEENSLAND AUSTRALIA | NOT IF, WHEN.

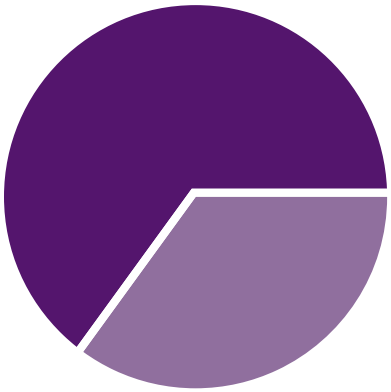
THE CAMPAIGN TO CREATE CHANGE

Campaign progress

Thanks to our generous donors in 2017, we have reached $323.8 million out of our target of $500 million by the close of 2020.

This report details just a few of the ways this funding has already helped deserving students, progressed potentially life-saving research, and transformed teaching and learning.

There is still so much more we can achieve together and we look forward to continuing this journey with you.



65%
TOWARDS OUR $500M TARGET

Investing in our future

2017 ENDOWMENT PERFORMANCE

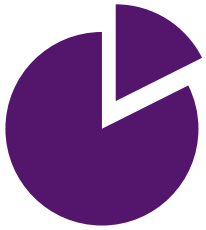
Just as philanthropy has been integral to the University creating positive change in society for more than a century; we want to ensure its transformative impact will be felt for many generations to come.

While many of our donors want their gift spent immediately for their chosen cause, others prefer an endowment approach. This method involves steadily growing an investment fund that in turn delivers dividend payments, creating funding certainty for the beneficiary.

The investment strategy used by UQ's designated fund managers is to achieve a long-term return of six per cent plus the Consumer Price Index (CPI). With UQ's current dividend payments being 4.5 per cent plus CPI, it means that together we can deliver a lasting benefit to students, teaching and research.

In 2017, the return on this investment portfolio was well above industry standards, and it is the University's intent to grow the principle to one that rivals our peer institutions around the world. We are seeking donors who share a similar vision to provide impact in perpetuity to help accelerate the growth of this initiative.

$218M
UQ INVESTMENT PORTFOLIO



10.4%
RETURN FOR THE YEAR ENDING 31 DECEMBER 2017

2017 overview

4,202 donors, including alumni, industry and those from the wider community, continued to choose UQ as their trusted partner to support the areas and causes they are passionate about. In 2017, their generosity resulted in $67.6 million being raised to support areas across the University.

RESEARCH / 60.1%
$40,612,554

TEACHING AND LEARNING / 28.3%
$19,122,332

EMERGING PRIORITIES / 1.6%
$1,076,438

TOTAL / 100%
$67,581,191

STUDENT EXPERIENCE / 1.8%
$1,219,873

INFRASTRUCTURE / CAPITAL / 2.9%
$1,991,927

SCHOLARSHIPS AND PRIZES / 5.3%
$3,558,067

MORE THAN 700 STUDENTS SUPPORTED

AN TRAN, 2017 ASPIRE SCHOLARSHIP RECIPIENT, STUDYING DENTISTRY AT UQ

"I couldn't have done it without the scholarship. It helps me juggle all the demands of dental school and the cost of living expenses. It also allows me to stay in touch with my parents, who live in Victoria, and honour their commitment to getting a university education.

"My parents are refugees of the Vietnam War and my father, who is my hero, had to fight tooth-and-nail for his education.

"Australia welcomed him with open arms and so he has instilled in me the importance of giving back."

Giving to a cause

We invite you to tell us about your passion – whether it's protecting environments, nurturing futures, supporting families, enriching lives and culture, or tackling injustice – so we can provide the tools to make your vision a reality.

We'll bring our expertise and determination, and work side by side with you to accelerate toward success.

By working together, we can confidently say, 'Not if, when'.

100%
of donor contributions go to the nominated cause

CONTACT US TO CREATE CHANGE

Online

uq.edu.au/giving

Phone

+61 7 3346 3900
Mon-Fri 9am-5pm (AEST)

Post

UQ Advancement
The University of Queensland
Brisbane QLD 4072
Australia

UQ is registered as a deductible gift recipient (DGR) under federal government legislation - UQ provides you with a receipt for every gift greater than $2 for your taxation records. General information can be provided about your gift; however, we advise you to consult your financial adviser or accountant. More information is available from the Australian Taxation Office (ATO).

Transforming teaching and learning

The generosity of husband and wife UQ Arts patrons, who believed art, music and culture could enrich and improve our lives, will continue to transform the learning experience of UQ students for generations to come.

Paula and Tony Kinnane designated a gift through their estate to allow the UQ Art Museum to establish internships and scholarships with a focus in museum theory and practice.

In 2017, the first two Kinnane scholars were welcomed to the new UQ Art Museum program. Emma McLean (Bachelor of Arts/ Bachelor of Laws) and Rebecca Johnson (Master of Museum Studies) received 12 months of paid work through the newly established Kinnane Endowment Curatorial Internship and the Kinnane Endowment Registration Internship, respectively.

These professional experiences accelerate students towards success by providing them with the experience, confidence and skill sets to succeed in their future careers.

Since coming on board, Ms McLean has undertaken research for exhibitions, written rationales to acquire artworks, and drafted a range of interpretive texts to promote and elucidate the collection.

"I'm honoured to be the selected candidate for the Kinnane Endowment Fund Curatorial Internship," Ms Mclean said.

"Thanks to the extraordinary generosity of the late Paula and Tony Kinnane, I have been fortunate enough to learn the fundamental skills of curating from the creative and experienced UQ Art Museum staff."

Rebecca Johnson has also taken full advantage of the program, working behind the scenes to ensure exhibitions and artworks shine on display by conducting vital art preparation, managing copyright agreements and overseeing the UQ collection.

"The UQ Art Museum has been a driving influence for me during my studies and has helped develop my passion into the foundations of a career," said Ms Johnson.

"I feel so fortunate and excited to broaden and challenge my professional skills on the job in the name of Paula Kinnane – she wanted to make a difference in students' lives, and I believe this experience will truly change mine."

UQ Art Museum Director Dr Campbell Gray said the gift gave students substantial professional opportunities both within the Art Museum and in regional centres.

"Education was at the heart of Paula's decisions and she was excited about the difference she knew her gift would make to students' lives," Dr Gray said.

"She was also able to realise her desire to give back to regional areas through a program of student placements to regional galleries and professional development opportunities for gallery employees, thereby giving students a distinct advantage when full-time employment is sought."

You too can help students make their way in a highly competitive global market by supporting student training and internships at uq.edu.au/giving.

"I FEEL SO FORTUNATE AND EXCITED TO BROADEN AND CHALLENGE MY PROFESSIONAL SKILLS ON THE JOB IN THE NAME OF PAULA KINNANE – SHE WANTED TO MAKE A DIFFERENCE IN STUDENTS' LIVES, AND I BELIEVE THIS EXPERIENCE WILL TRULY CHANGE MINE."

Photo: Emma McLean and Rebecca Johnson with UQ Art Museum staff. | Inset: Paula and Tony Kinnane.

Empowering student success

A UQ scholarship recipient and Indigenous student ambassador has used the support provided to him by generous donors as a springboard to help others.

Nicholas Frazer, who graduated with a Bachelor of Laws and Bachelor of Business Management (Honours) in December 2017, has already contributed to his community.
Mr Frazer made the most of the support he received during his studies to not only graduate with honours, but also to volunteer and take on a research project about Indigenous issues relating to the Australian criminal justice system.

In collaboration with Professor Tamara Walsh from UQ's TC Beirne School of Law, Mr Frazer tackled a project examining Aboriginal imprisonment in Western Australia.

"I hope my research will contribute to Professor Walsh's ongoing work towards building a profile on Aboriginal deaths in custody, particularly in regards to current issues in Western Australia.

"I have been, and will continue to be, personally interested in these issues as I move forward in my legal career."

The research focused on Western Australia because its rate of Aboriginal imprisonment was much higher than in other states.

"In Western Australia, an Aboriginal adult is 20 times more likely to be incarcerated and an Aboriginal child is 54 times more likely to be incarcerated than their non-Aboriginal counterparts," he said.

"I am particularly interested in understanding the extent to which these high rates are attributable to the relationship Aboriginal people have with the Western Australia Police Force. My focus is on the issues around arrest and entry into police custody."

Throughout his university studies, Mr Frazer also volunteered his time to share his experience studying law with Aboriginal and Torres Strait Island students in years 11 and 12 as part of UQ's InspireU residential camp.

Mr Frazer, who grew up in Yamba, is the recipient of the Endowed Dr J & Dr M Fulcher Scholarship in Law and the McCullough Robertson Endowed Scholarship for Law Students.

"Because I'm not originally from Brisbane, the scholarships' financial components were a great help towards everyday living expenses such as rent, food and electricity, as well as university costs like textbooks and student fees.

"The scholarships have allowed me to build a relationship with the donors. Relationships such as this are valuable in life and I am very grateful for the opportunities these scholarships have provided me," he said.

You can read more business, economics, and law stories at bel.uq.edu.au/philanthropy-in-action or help hardworking students reach their potential by supporting scholarships at uq.edu.au/giving.

"BECAUSE I'M NOT ORIGINALLY FROM BRISBANE, THE SCHOLARSHIPS' FINANCIAL COMPONENTS WERE A GREAT HELP TOWARDS EVERYDAY LIVING EXPENSES SUCH AS RENT, FOOD AND ELECTRICITY, AS WELL AS UNIVERSITY COSTS LIKE TEXTBOOKS AND STUDENT FEES."

Inset: Nicholas Frazer.

Driving discovery and impact

Using drones to save lives may seem like a futuristic endeavour all but relegated to the confines of sci-fi, but one UQ researcher is making it a reality.

Edwin Davis's hands-on research into aerodynamics is helping him create smaller, safer, cheaper and more energy-efficient drones that he hopes will be used to make industry, agriculture and search-and-rescue efforts safer.

"The ultimate goal I work towards is that one day when we encounter a burning building or disaster zone and are unsure whether human beings are inside, we won't have to send rescue teams in blind and risk further casualties," he said.

"Instead, we can send in a fleet of small, cheap drones to map the area, see if anyone needs to be rescued, assess the risk and direct emergency services straight there."

Mr Davis said that research for industry often had further reaching applications.

"The work I do for industry may at times seem siloed but it has real applications in helping people and saving lives. For example, currently the only option for closely inspecting large infrastructure and machinery is often to have people in helicopters flying at close proximity – this is dangerous and sometimes fatal work," Mr Davis said.

"The drones I'm creating are able to respond to wind gusts, are cheaper, and can endure longer trips, making them viable alternatives to helicopters.

"Beyond industry, we can also use this technology in search-and-rescue or immediate medical response," he said.

Support for early career researchers catalyses innovation, research and discovery.

"We need philanthropic donations because they allow us to work, to cover the things grants won't. If it wasn't for philanthropy, our research would not be possible.

"Grants often don't cover the scope of a project or the equipment necessary to complete the research – so philanthropy fills the gaps."

Mr Davis's work in wind and airspeed detection was awarded best paper at the 2016 Australasian Conference on Robotics and Automation.

The talented PhD student said he would not have been able to continue his research without the support of generous donors.

"I was only able to come to UQ to complete my research under Dr Paul Pounds because of a generous gift from Dr Andrew and Mrs Jennifer Brice to the Unmanned Aerial Vehicle Research Fund.

"My transition to UQ was not covered under any grant or funding, so had philanthropy not stepped in to fill the gap, I wouldn't have been able to complete my work here," he said.

"I like the idea of using new technology like drones to help society and decrease the risk to human life during traditionally dangerous but important work roles."

You too can drive innovation that accelerates research to the benefit of our community, Australia, and the world. Visit uq.edu.au/giving.

“GRANTS OFTEN DON’T COVER THE SCOPE OF A PROJECT OR THE EQUIPMENT NECESSARY TO COMPLETE THE RESEARCH – SO PHILANTHROPY FILLS THE GAPS.”

Photo: a drone being used for agricultural purposes. | Inset: Edwin Davis.

Thank you

The University of Queensland acknowledges the support of its donors.

With the support of donors, UQ is able to create change by empowering student success, transforming teaching and learning, and driving discovery and impact. These achievements are only made possible because of the generosity of our donors, alumni, friends, industry partners and foundations.

A full list of 2017 donors to The University of Queensland is available at **giving.uq.edu.au/donor-honour-roll-2017**.

The following community members* have generously donated their time and expertise to volunteer as part of the governing board for the Campaign to Create Change.

Professor Ian Frazer AC FRS
Campaign Co-Chair
Board Chair, TRI Foundation

Mrs Caroline Frazer
Campaign Co-Chair
Director, Frazer Family Foundation
MEdSt '97

Professor Perry Bartlett
Professor in Molecular Neuroscience
Queensland Brain Institute

Mr Matthew McLennan
Head of Global Value Team
First Eagle Investment Management
BCom '90, BCom(Hons) '91, MICLaw '17

Professor Fred D'Agostino
President of the Academic Board
The University of Queensland

Dr Paul Eliadis
Clinical Haematologist and Medical Oncologist
Icon Cancer Care
MBBS '77, BSc '78

Mr Trevor St Baker AO
Founder, St Baker Energy Innovation Fund

Mr Paul Taylor
Country Head – Equity Investments
Fidelity International
BBus '91, BCom '92

Dr Xiao-Yi Sun
Trustee, Dr Jian Zhou Foundation

Mr Peter Johnstone
Chief Executive Officer
The Clem Jones Group

Ex Officio

Professor Peter Høj
Vice-Chancellor and President

Ms Jennifer Karlson
Pro-Vice-Chancellor (Advancement)

*Only UQ academic credentials are listed

TOGETHER, OUR GREATEST DAYS LIE AHEAD

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

NOT IF, WHEN.

THE CAMPAIGN TO CREATE CHANGE

UQ Advancement
The University of Queensland
Brisbane QLD 4072 Australia
+61 7 3346 3900

donor.relations@uq.edu.au
uq.edu.au/giving

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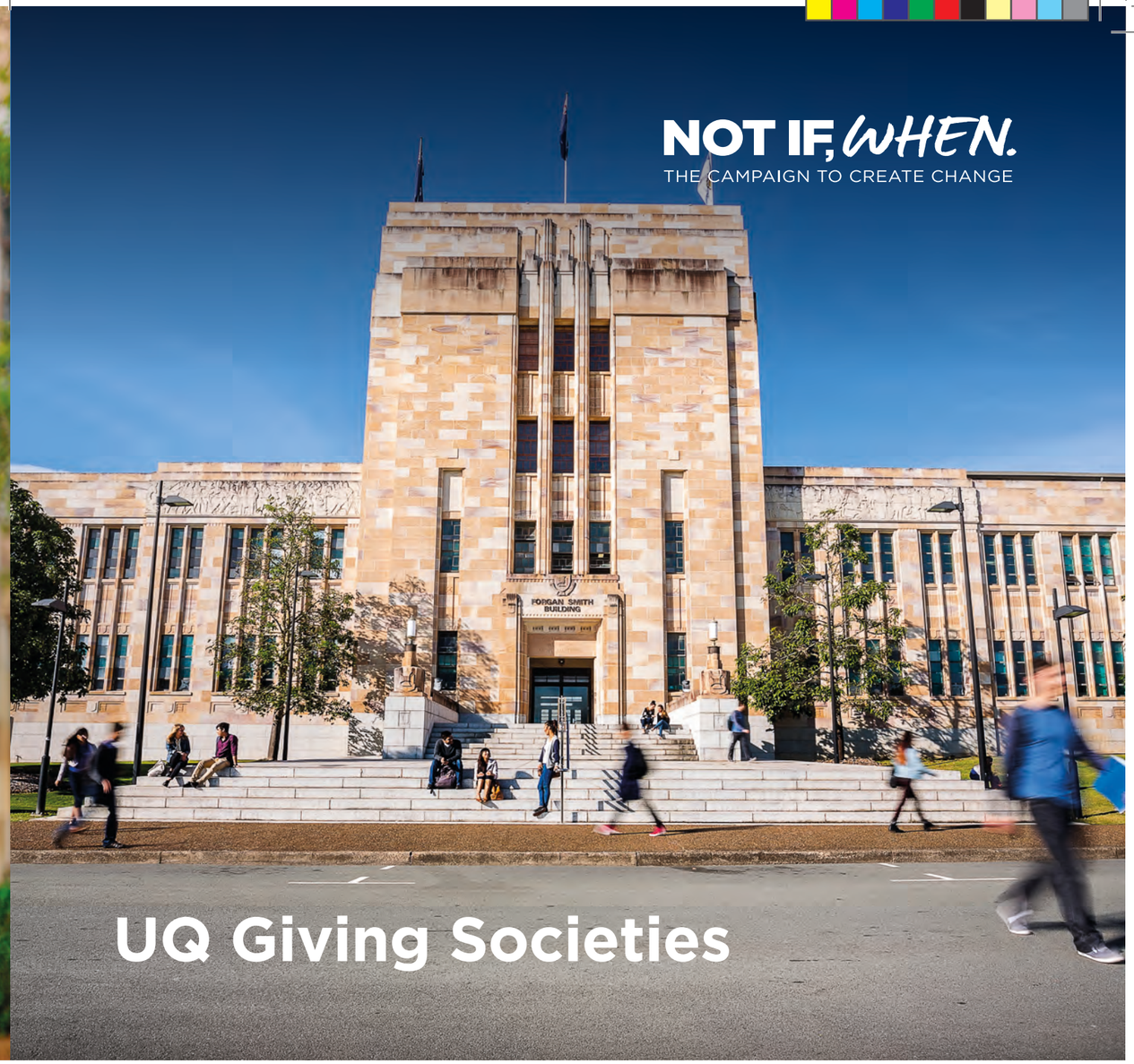


NOT IF, *WHEN.*

THE CAMPAIGN TO CREATE CHANGE

UQ Giving Societies

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Advancement

The University of Queensland
Brisbane 4072 Australia

Phone: +61 7 3346 3900
Email: donor.relations@uq.edu.au

Web: uq.edu.au/giving

NOT IF, *WHEN.*
THE CAMPAIGN TO CREATE CHANGE

CRICOS PROVIDER NUMBER 00025B

Thank you, your support makes a difference

As a donor, you provide students with the tools they need to succeed; you transform the teaching and learning opportunities available to them; and you drive discoveries that deliver real world impact to people throughout Australia and around the globe.

Together, our greatest days lie ahead.

Connect with us **@uqalumni**

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

It is through our giving societies that The University of Queensland (UQ) honours its generous and loyal donors. As a member of one of these societies, you will receive exclusive event invitations and other opportunities to recognise the positive contributions you have made to our community.

The members of our donor societies support students, teaching, and research in different ways, with some making one-off or regular donations and others leaving provisions in their will. UQ values your support at any level and acknowledges the collective impact of the philanthropic community.

Mayne Circle

Named in honour of Dr James O'Neil Mayne and his sister Miss Mary Emelia Mayne who gifted the funds with which the land for the St Lucia campus was purchased. The Mayne Circle is a society of generous benefactors who have donated at the highest level with a lifetime giving of $1,000,000 or greater.

Members are provided with regular opportunities to engage with the Vice-Chancellor, Professor Peter Høj, students, researchers and senior UQ leadership at exclusive events throughout the year. These events include an annual private dinner, the Celebration of Giving event and complimentary tickets to the Global Leadership Series. Members are also provided with an annual and personalised impact of giving report.

1910 Society

Named in honour of the year of UQ's official founding, the 1910 Society is a community of benefactors who demonstrate extraordinary philanthropic leadership through lifetime giving of $100,000 or greater.

Members are invited to exclusive University events throughout the year, such as the Celebration of Giving, UQ's annual donor thank you event. These events will provide an opportunity to engage with students, researchers and senior members of University leadership.

Sandstone Society

Named in honour of the sandstone that has formed the foundations of UQ, the Sandstone Society is a community of generous donors who demonstrate philanthropic support through lifetime giving of $50,000 or greater.

Members are invited to the Celebration of Giving, UQ's annual donor thank you event. This event provides an opportunity to meet fellow Sandstone Society members and to engage with students, researchers and senior leadership.

Great Court Society

Named after the heart of the St Lucia campus, the Great Court Society is a group of donors who demonstrate their support through annual gifts of $1000 or greater.

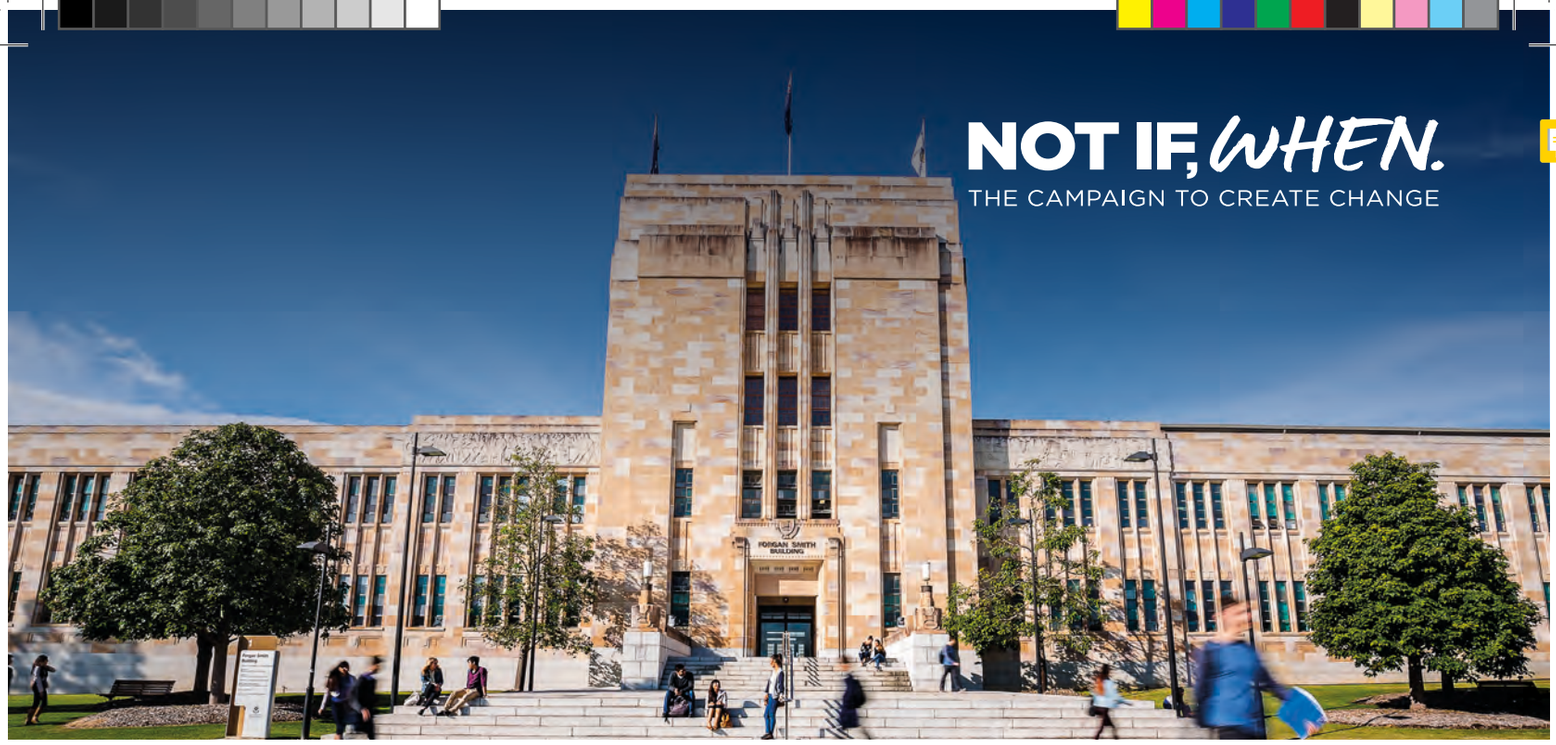
Members are invited to the Celebration of Giving, UQ's annual donor thank you event. With differing themes and content each year, this event provides an opportunity to meet fellow donors and to engage with students, researchers and University staff.

Jacaranda Society

Named in honour of the quintessential trees featured on each of UQ's campuses, the Jacaranda Society is a community of generous benefactors who have included the University in their will.

Members are invited to the exclusive annual Jacaranda Society Tea to engage with University leadership, students and researchers.

To discuss the UQ giving societies please contact the Donor Relations team by email to **donor.relations@uq.edu.au** or telephone **+61 7 3346 3900**.



UQ Giving Societies

As a donor, we would like to thank you for your continued support. You provide students with the tools they need to succeed; you transform the teaching and learning opportunities available to them; and you drive discoveries that deliver real world impact to people throughout Australia and around the globe.

Together, our greatest days lie ahead.

It is through our giving societies that The University of Queensland (UQ) honours its generous and loyal donors. As a member of one of these societies, you will receive exclusive event invitations and other opportunities to recognise the positive contributions you have made to our community.

The members of our donor societies support students, teaching, and research in different ways, with some making one-off or regular donations and others leaving provisions in their will.

UQ values your philanthropic support and there will always be a place for you in our donor community.

Don't forget to keep your details up-to-date so we can continue to communicate the positive impact of your support.

Visit **alumni.uq.edu.au/update-your-details** or contact one of our friendly staff.

Connect with us **@uqalumni**

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Welcome to the Sandstone Society

The Sandstone Society is named in honour of the beautiful and robust material that has formed the foundations of UQ.

Like the sandstone structures of the Great Court, the generosity of Sandstone Society donors supports and upholds the University by helping to propel its students, researchers, and teachers to levels of global excellence.

The Sandstone Society is a community of generous donors who are compelled to act now to create change and have demonstrated philanthropic support by giving $50,000 or greater during their lifetime.

Sandstone Society members are invited to a range of exclusive events, including the Celebration of Giving, UQ's annual donor thank you event. This event allows UQ's senior leadership to thank Society members and recognise their contributions to the University while also providing Sandstone Society members the opportunity to engage with students, teachers and researchers whose lives have been transformed through philanthropy.

To learn more about how your generosity has made a genuine difference, please visit **uq.edu.au/giving.**

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

CRICOS PROVIDER NUMBER 00025B

Pro-Vice-Chancellor (Advancement)
Ms Jennifer Karlson MSc, BSc, CFRE

CRICOS PROVIDER NUMBER 00025B

7 September 2018

[redacted]

Dear [redacted]

On behalf of the students, staff and researchers of The University of Queensland (UQ), I thank you and T[redacted]Foundation for your generous and continuing support of the F[redacted] Chair of Classics and Ancient History.

Your gift has enriched the lives of many. It ensures that wisdom of the Greco-Roman world and its profound human insights will never be forgotten. It guarantees that UQ remains a centre of excellence for the study of Classics for generations to come.

I am honoured to present you with the enclosed report detailing the impact of the [redacted] Chair of Classics and Ancient History from 1 January 2017 to 30 June 2018. The report includes a summary of giving and impact statement that details how the programs you support continue to thrive thanks to your generosity.

Philanthropy plays an essential and important role in growing UQ's ability to transform lives through education and research. Because of your visionary support we have been able to amplify the impact we have on people's lives both in Australia and globally.

If you have any questions or feedback, please contact me by email at pvca@uq.edu.au or telephone (07) 3346 6277. Alternatively, please contact Andrew Pentland, Director of Development and Philanthropy by email a.pentland@uq.edu.au or telephone (07) 3346 3929.

We have come a long way, and there is so much more that we can achieve. I look forward to our continued partnership – together, our greatest days really do lie ahead.

With best wishes

Jennifer Karlson
Pro-Vice-Chancellor (Advancement)

Thank you for all ya
hard work & continued do
for our University & The
Classics.

[redacted] CHAIR OF CLASSICS AND ANCIENT HISTORY

1 JANUARY 2017 TO 30 JUNE 2018 IMPACT STATEMENT

Pictured: Professor Alastair Blanshard teaching at the Archaeological Museum of Marathon in Greece earlier in 2018

The creation of the [redacted] Professorship in Classics and Ancient History has continued to have tremendous impact locally, nationally, and internationally on the study of the Greek and Roman world. The activities of the chair, Professor Alastair Blanshard, have ensured that the value of the classical world has been shared with a wide variety of audiences.

Within Queensland, between the start of 2017 and mid-2018 saw an increased focus on engagement with local high-schools through a partnership with the Queensland History Teacher's Association. Together with colleagues in his discipline, Professor Blanshard helped to coordinate visits to a number of schools in South-East Queensland. A study day involving approximately 150 students was held at The University of Queensland. This was followed up by similarly-sized gatherings in Bundaberg, Ipswich, and Toowoomba. On each occasion, a mixture of public and private schools brought their senior ancient history classes to hear about the latest research on topics such as the lives of Greek women, slavery, Greek religion, the notorious activities of Roman emperors, and important archaeological sites such as Pompeii.

Plans are currently underway for visits in 2019 to Cairns and Charters Towers. Professor Blanshard was also one of the keynote presenters at the National History Teachers Conference in 2017. This conference brought together teachers from all over Australia to hear about new ideas in the discipline of history. Professor Blanshard lectured on new innovative ways for thinking about Greek warfare. Professor Blanshard has also been very active locally through his involvement in alumni groups such as the Friends of Antiquity and the Queensland Friends of the Australian Archaeological Institute at Athens.

He has given lectures for the University of the Third Age (U3A) and the Queensland Art Gallery (QAGOMA).

At a national level, Professor Blanshard has continued to be an academic leader for the discipline. At the end of 2017, he was inducted as a Fellow into the Australian Academy of the Humanities. He sits on the organising committee for the upcoming Academy Annual Symposium *The Clash of Civilisations? Where are we now*? Through his writings for the *Conversation*, he has helped to promote the value of Classics for contemporary debates. His review of the Queensland Museum's Gladiator exhibition raised questions about our familiarity with this ancient Roman institution. His review of the circus performance 'Per Te' helped to locate this act within a long history of artistic explorations relating to the capacities of the human body. He also contributed an article on the history of gay fantasies about Greece to the *Conversation*'s series on sexuality.

Internationally, Professor Blanshard's research has shown the importance of Classics for the development of Western Civilisation. At the end of 2017, he co-edited a collection on the writings of Oscar Wilde and Classics. This volume was published by Oxford University Press and initial reviews have been unanimous in declaring it as a significant contribution to the study of Wilde. The book demonstrates the way in which Wilde's training in Classics had a profound influence on his drama, poetry, and essays.

Professor Blanshard is a world-leader in the study of the impact of antiquity on the modern. Together with Professors Emily Greenwood (Yale) and Shane Butler (Johns Hopkins), Professor Blanshard is a series editor for a monograph series ('Classics After Antiquity') for Cambridge University Press that publishes exciting new works on the Classical tradition. He sits on the editorial board of the *Classical Receptions Journal* (OUP) and Edinburgh University Press' 'Screening Antiquity' series. He is the subject-area editor for 'Classical Reception' for the *Oxford Classical Dictionary*.

In the first half of 2018, Professor Blanshard was awarded a Visiting Fellowship at the Australian Archaeological Institute at Athens (AAIA) to conduct research in Athens on early travellers to Greece. This study aims to show the tremendous debt that the discipline of Classics owes to 18th-century travellers to Greece and the discoveries made during this period. During his time in Athens, Professor Blanshard gave a number of talks. He took a group to see the ancient battlefield of Marathon and lectured on the various ways the site had been interpreted over the centuries. He also gave the important annual 'open meeting' lecture for the AAIA.

This prestigious event allowed Professor Blanshard to share his research with an audience which included distinguished professors from universities in Great Britain, United States, Canada, and the Scandinavian countries. A very enjoyable reception sponsored by the Australian Embassy in Greece was held in the Swedish Institute at Athens following Professor Blanshard's lecture. In addition to lectures in Athens, Professor Blanshard also presented papers at Cambridge University, Oxford University, and the Institute of Advanced Studies at Strasbourg.

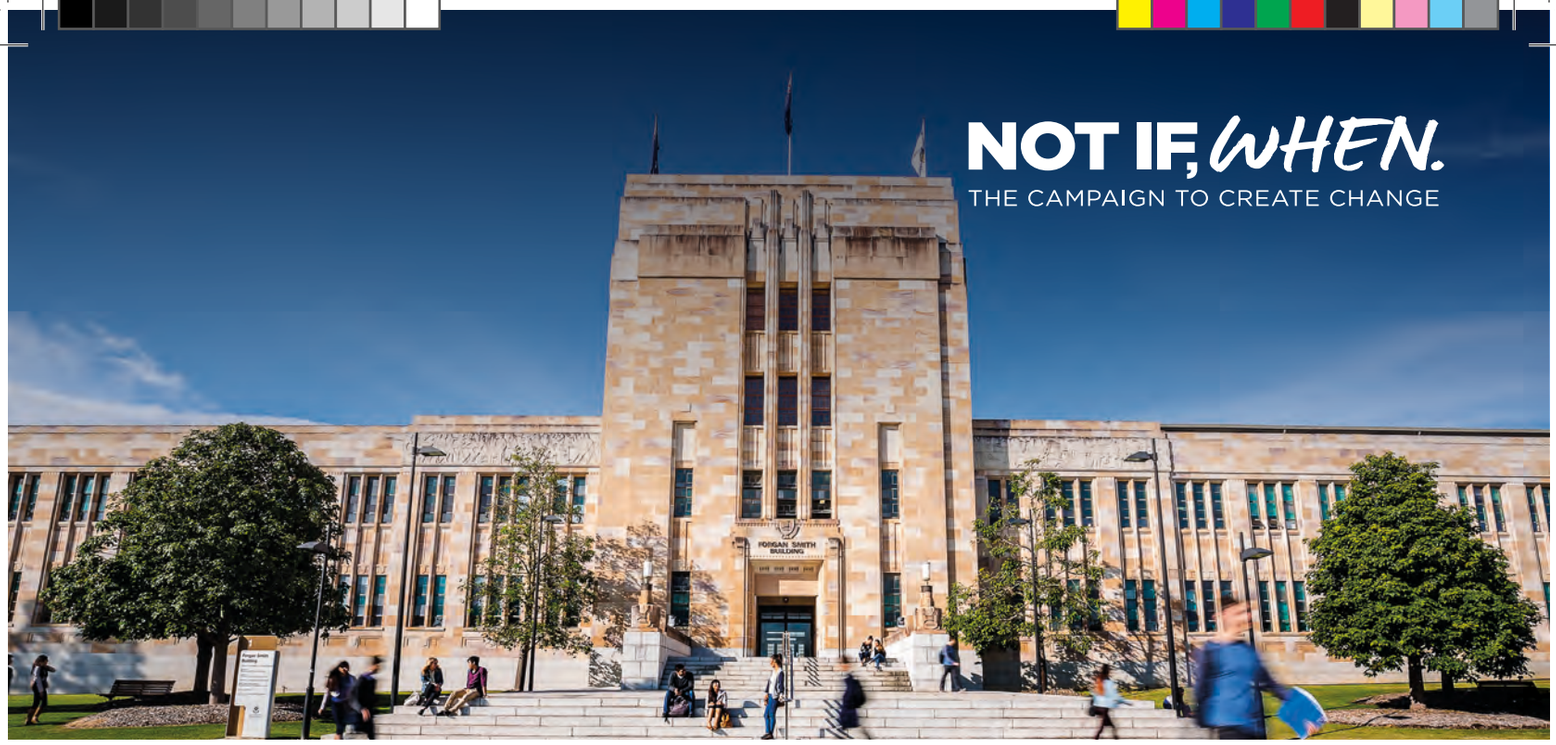
SUMMARY OF GIVING
1 JANUARY 2017 TO 30 JUNE 2018

[redacted]

Fund Name	[redacted] Chair of Classics and Ancient History	
	Pledge established and commenced 18/12/2012	**Total $**[redacted]
01/01/2017	**Opening Balance**	[redacted]**0**
20/06/2017	Payment	[redacted]
13/06/2018	Payment	[redacted]
30/06/2018	**Closing Balance**	[redacted]

Other Giving: Gift-in-kind	Donation of wines for Campaign Dinner	
26/03/2017	**TOTAL**	[redacted]

[redacted]



UQ Giving Societies

As a donor, we would like to thank you for your continued support. You provide students with the tools they need to succeed; you transform the teaching and learning opportunities available to them; and you drive discoveries that deliver real world impact to people throughout Australia and around the globe.

Together, our greatest days lie ahead.

It is through our giving societies that The University of Queensland (UQ) honours its generous and loyal donors. As a member of one of these societies, you will receive exclusive event invitations and other opportunities to recognise the positive contributions you have made to our community.

The members of our donor societies support students, teaching, and research in different ways, with some making one-off or regular donations and others leaving provisions in their will.

UQ values your philanthropic support and there will always be a place for you in our donor community.

Don't forget to keep your details up-to-date so we can continue to communicate the positive impact of your support.

Visit **alumni.uq.edu.au/update-your-details** or contact one of our friendly staff.

Connect with us **@uqalumni**

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Welcome to the Great Court Society

The Great Court forms the very heart and soul of the UQ St Lucia campus; a place where students, staff and community members come together.

The Great Court Society is named in honour of this special landmark, and recognises donors who demonstrate support through annual gifts of $1000 or more.

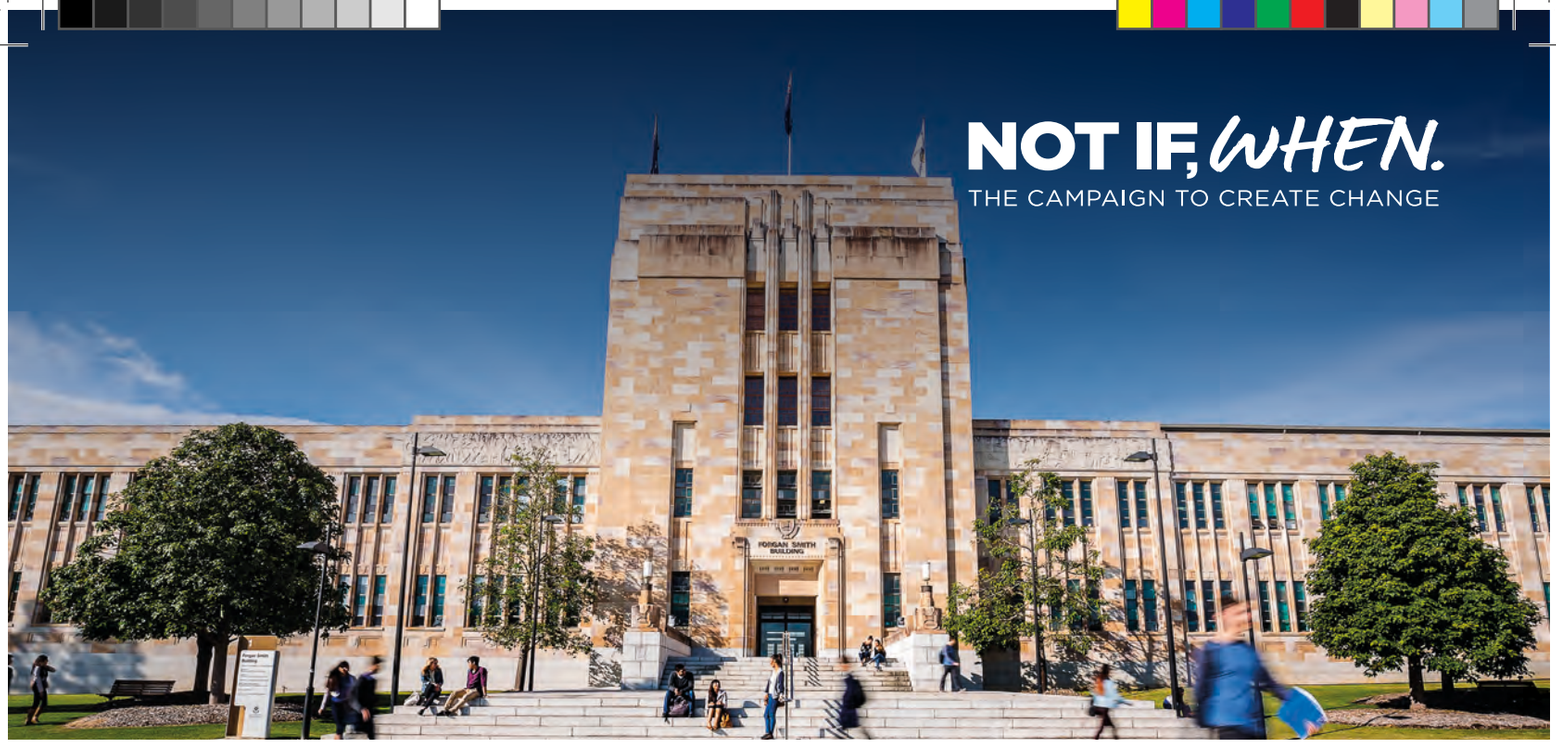
The Great Court Society plays an ongoing role in achieving international levels of excellence in research, learning and engagement that provide positive benefits for our environment and our global community. This group of donors has also been an integral part of creating world-class learning and research environments for our students, staff, alumni, and the wider community.

Members are invited to the Celebration of Giving, UQ's annual donor thank you event. This event allows UQ's senior leadership to thank Society members and recognise their contributions to the University while also providing the opportunity to engage with students, teachers and researchers whose lives have been transformed through philanthropy.

To learn more about how your generosity has made a genuine difference, visit **uq.edu.au/giving.**

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

CRICOS PROVIDER NUMBER 00025B



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Connect with us **@uqalumni**

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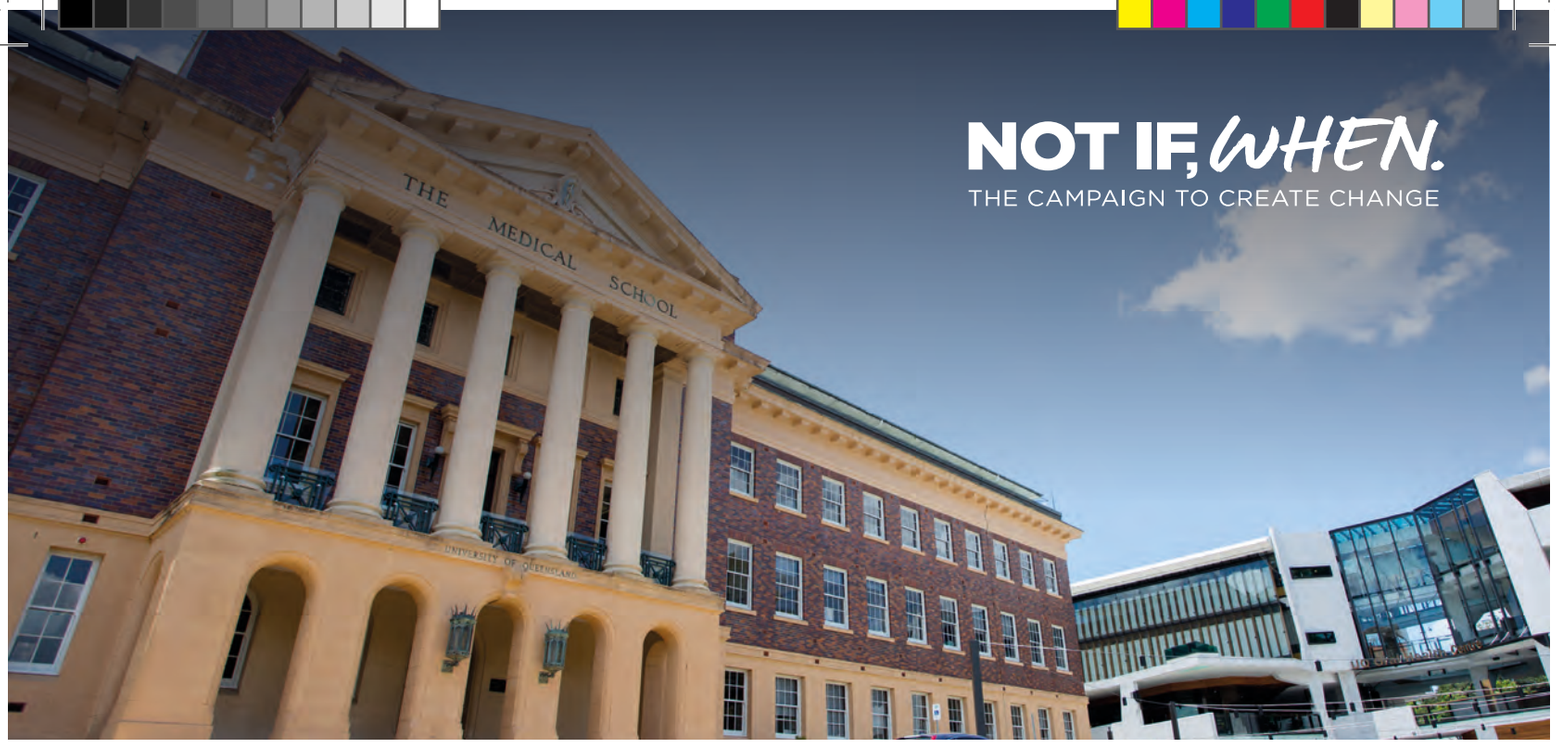


Welcome to the Mayne Circle

The Mayne Circle recognises the generosity of donors who have had an extraordinary, transformative impact on the lives of students, the outcomes of research, and the preservation of culture and teaching at UQ.

The Mayne Circle is named in honour of Dr James O'Neil Mayne and his sister, Miss Mary Emelia Mayne, who, through a series of transformative gifts in the 1920s, enabled the University to secure the St Lucia Campus. Their gifts also supported the University's establishment of the UQ Medical School, which houses the largest medical program in Australia.

The Mayne Circle is an exclusive society that recognises benefactors who have donated at the highest level with lifetime giving of $1,000,000 or greater.

Members play a pivotal role in creating change for current and future generations of students, teachers, and researchers, by providing them with the means to achieve international levels of excellence.

Members are provided with regular opportunities to engage with the Vice-Chancellor and President, students, researchers and senior UQ leadership at exclusive University events throughout the year. These events include an annual private dinner, Celebration of Giving and complimentary tickets to the Global Leadership Series. Members are also provided with an annual and personalised impact of giving report.

To learn more about how your generosity has made a genuine difference, visit **uq.edu.au/giving.**

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

CRICOS PROVIDER NUMBER 00025B

Pro-Vice-Chancellor (Advancement)
Ms Jennifer Karlson MSc, BSc, CFRE

CRICOS PROVIDER NUMBER 00025B

October 2018

[redacted]

Dear [redacted]

On behalf of the students, staff and researchers of The University of Queensland, I thank you for your generous and continuing support of the Archibald Scholarship in Economics Endowment.

Since 1911, the Archibald Scholarship has supported UQ's best economics students during their Honours year. This prestigious scholarship has been awarded more than 80 times and helped to launch the careers of many of Australia's top economists.

I am honoured to present you with the enclosed report detailing the impact of the Archibald Scholarship in Economics Endowment from 1 January 2017 to 31 December 2017. The report includes a summary of this fund's financial information, a statement highlighting the impact of your generous support and overview of UQ's investment portfolio performance for 2017.

By their very nature, endowed funds have a consistent, perpetual impact on the university's success and we thank you for contributing to the future of UQ in this way.

If you have any questions or feedback, please contact me by email at pvca@uq.edu.au or telephone (07) 3346 6277. Alternatively, please contact Ted Wynn, Director of Advancement in the Faculty of Business, Economics and Law by email t.wynn@uq.edu.au or telephone (07) 3346 9247.

We have come a long way, and there is so much more that we can achieve. I look forward to our continued partnership – together, our greatest days really do lie ahead.

With best wishes

Jennifer Karlson
Pro-Vice-Chancellor (Advancement)

2017 Impact Statement

THE ARCHIBALD SCHOLARSHIP IN ECONOMICS ENDOWMENT

The Archibald Scholarship was founded in 1911 from a gift from the estate of the late Honourable John Archibald, MLC, an important figure in Queensland's political landscape and a prominent supporter of the establishment of The University of Queensland. The Scholarship encourages and rewards the study of Economics and, is funded through the annual disbursement of the Archibald Scholarship Endowment Fund.

The Hon. John Archibald, MLC, was born near Edinburgh, Scotland in 1845. In 1863 he migrated to Queensland. He rose rapidly through the business ranks of the fledgling colony of Queensland, eventually owning a large milling enterprise, becoming Mayor of Warwick and sitting on the board of a series of companies.

The Archibald family has other connections to The University of Queensland via two named walkways on the St Lucia Campus. Archibald Way leads to the natural amphitheatre between The University of Queensland Club and the UQ Union Building. The dedication was made following a donation made in John Archibald's name by his daughter Eveline Robertson. A subsequent donation by Mrs Robertson for further landscaping and beautification of the UQ lakes area led to the naming of the pathway beside the main UQ lake Robertson Walk.

'The Archibald Scholarship endowment fund supports UQ's most outstanding students to pursue their passion and studies in economics. As one of the oldest and most prestigious scholarships in Australia, it has helped launch the careers of many of Australia's top economists.

In times of great change and complex global challenges, our Archibald Scholars are respected knowledge leaders and champions of change, with many playing important roles within government, industry and the wider community.

Over the years, it has been inspiring to see so many of our alumni generously giving back to the Archibald Scholarship endowment fund, ensuring that future UQ students continue to have access to enriching experiences and world-class research and support networks. Thank you for partnering with UQ to educate, empower and celebrate our young scholars.'

Professor Phil Bodman, Acting Head of School, School of Economics, Deputy Executive Dean, Faculty of Business, Economics and Law

FINANCIAL SUMMARY FOR PERIOD 1 JANUARY 2017 TO 31 DECEMBER 2017

Fund Name: **The Archibald Scholarship in Economics Endowment**

Year Established: 1911

In Memoriam: Honourable John Archibald, MLC

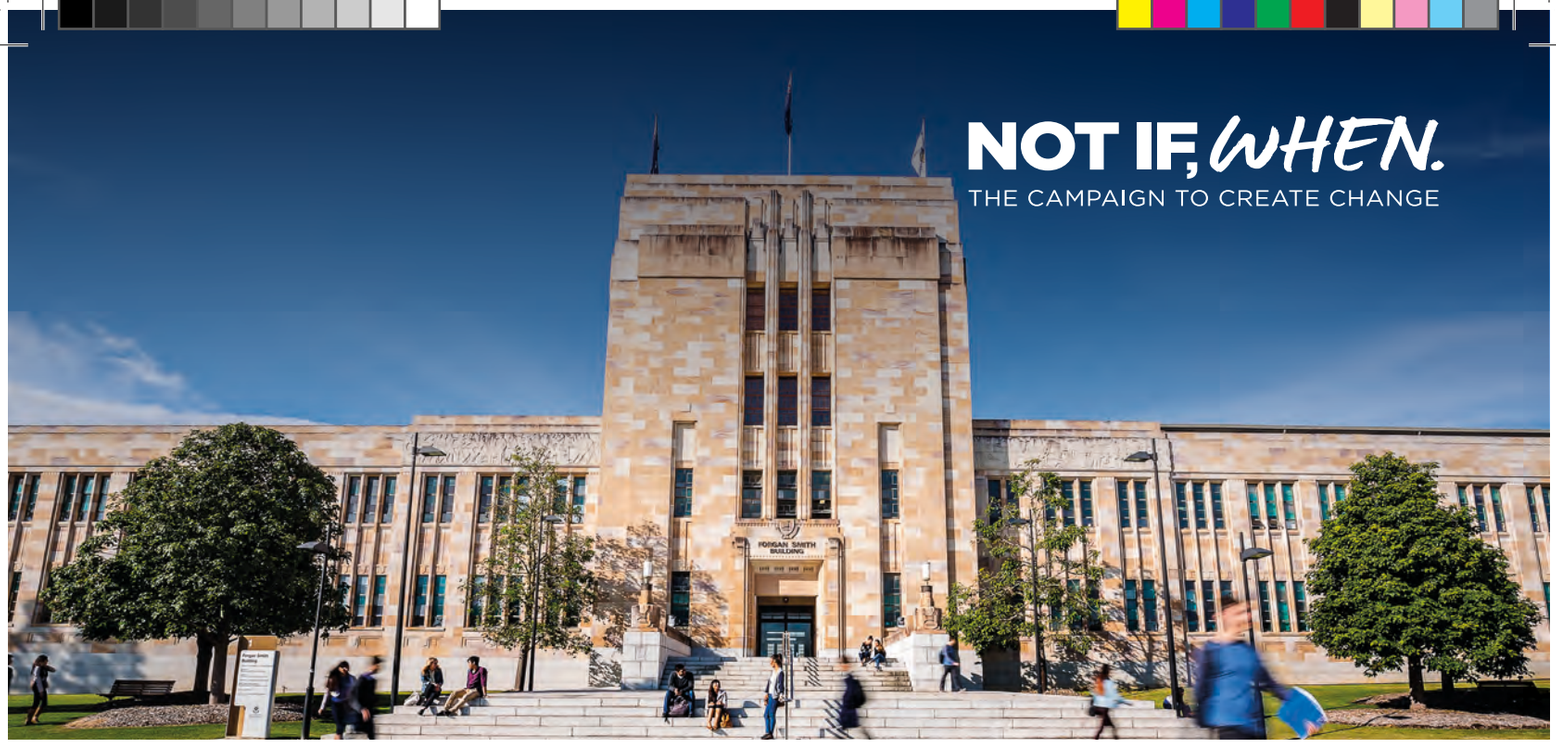
Intent: The purpose of the scholarship is to encourage and reward the study of Economics at The University of Queensland.

INVESTMENT ACCOUNT		Value
2017 Opening Balance		**$186,802.43**
	Investment Return	$20,248.60
	Additional Gifts	$64,200.00
	Professional Fund Management Fee	($1,177.99)
	Operating Project Annual Distribution	($6,648.92)
2017 Closing Balance		**$263,424.12**

OPERATING ACCOUNT		Value
2017 Opening Balance		**$504.50**
	Operating Project Annual Distribution	$6,648.92
	Additional Gifts	$2,846.58
	Expenditure	($10,000.00)
2017 Closing Balance		**$0.00**

Management fees and annual investment returns are calculated by the average monthly balance. Performance and fees can vary due to the timing of operational capital deposits and or distributions

It is a standard University policy that an endowment project will receive an annual distribution of 4.5% of the original donation amount received, adjusted by the Consumer Price Index (CPI). Any remaining accumulated interest is reinvested in the corpus. This level is designed to meet the needs of the Operating Account and secure the endowment fund in perpetuity.



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THE UNIVERSITY OF QUEENSLAND
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Welcome to the 1910 Society

Named in honour of the year of UQ's founding, the 1910 Society recognises donors who have made a significant and transformative impact on the lives of students, the outcomes of research, and the preservation of culture and teaching at UQ.

The University owes everything - from the land on which it is built, to the lifesaving cures and technology that have been developed here - to the generosity of donors who had a vision for a better future. The 1910 Society recognises a community of generous benefactors who have demonstrated extraordinary philanthropic leadership by giving $100,000 or greater during their lifetime.

These donors have dedicated their time, talent, and treasure to help cure disease, to ensure students of all backgrounds succeed, to create resilient environments, and to build stronger communities.

1910 Society members are invited to a range of exclusive events, including the Celebration of Giving, UQ's annual donor thank you event. This event allows UQ's senior leadership to thank Society members and recognise their contributions to the University while also providing 1910 Society members the opportunity to engage with students, teachers and researchers whose lives have been transformed through philanthropy.

To learn more about how your generosity has made a genuine difference, visit **uq.edu.au/giving.**

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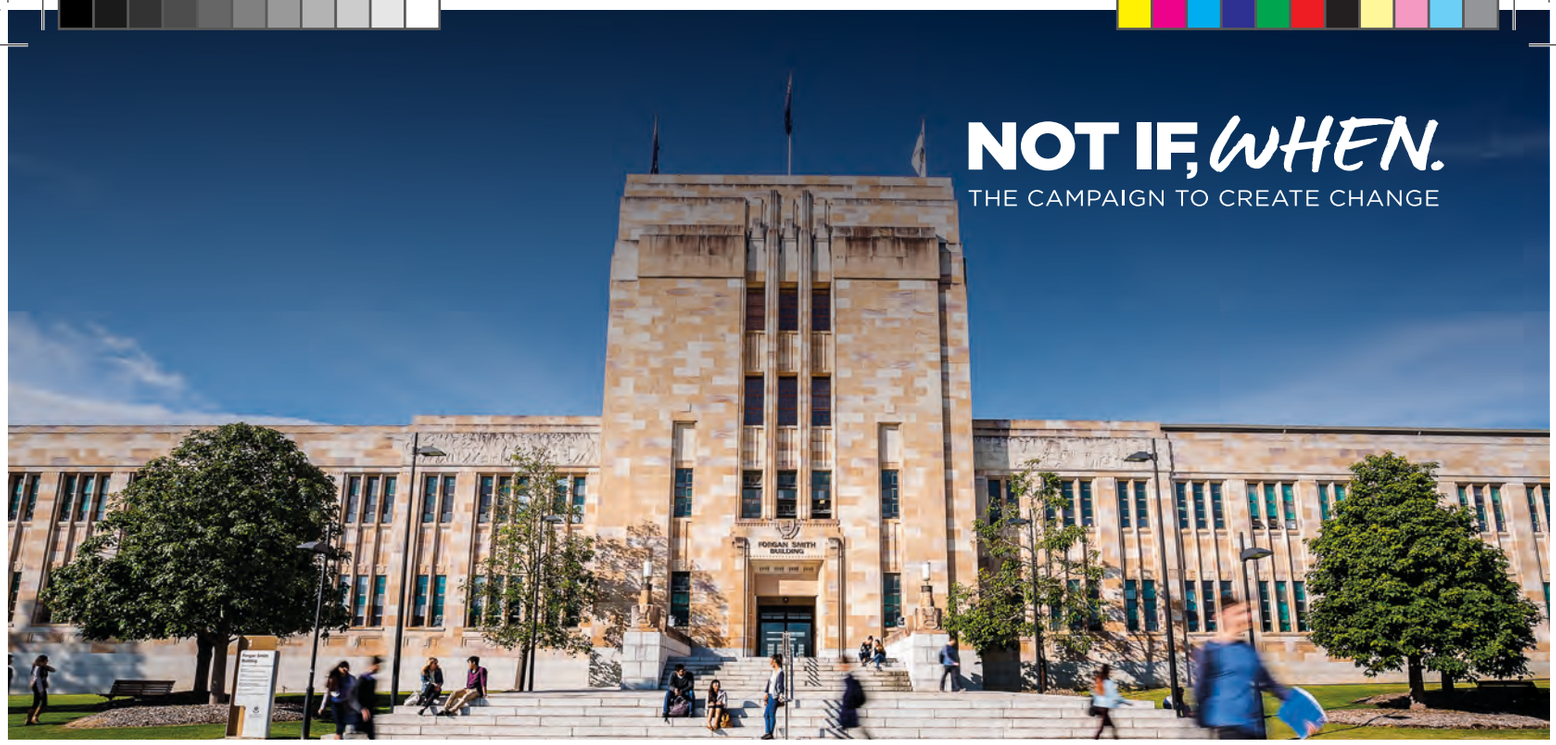

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THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Welcome to the Jacaranda Society

Named in honour of the vibrant trees that flourish on UQ's campuses, the Jacaranda society is a community of generous donors who have left a gift in their will to the University.

Members of the Jacaranda Society provide a lasting legacy for current and future generations of students, teachers and researchers.

It is through the generosity of Jacaranda Society members that students, teachers and researchers at UQ are provided with the additional support and opportunities to achieve excellence and impact.

Members are invited to the annual Jacaranda Society Tea. This event allows UQ's senior leadership to thank society members and recognise their contributions to the University while also providing the opportunity to engage with students, teachers and researchers whose lives have been transformed through philanthropy.

To learn more about how philanthropy at UQ has made a genuine difference, visit **uq.edu.au/giving.**

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

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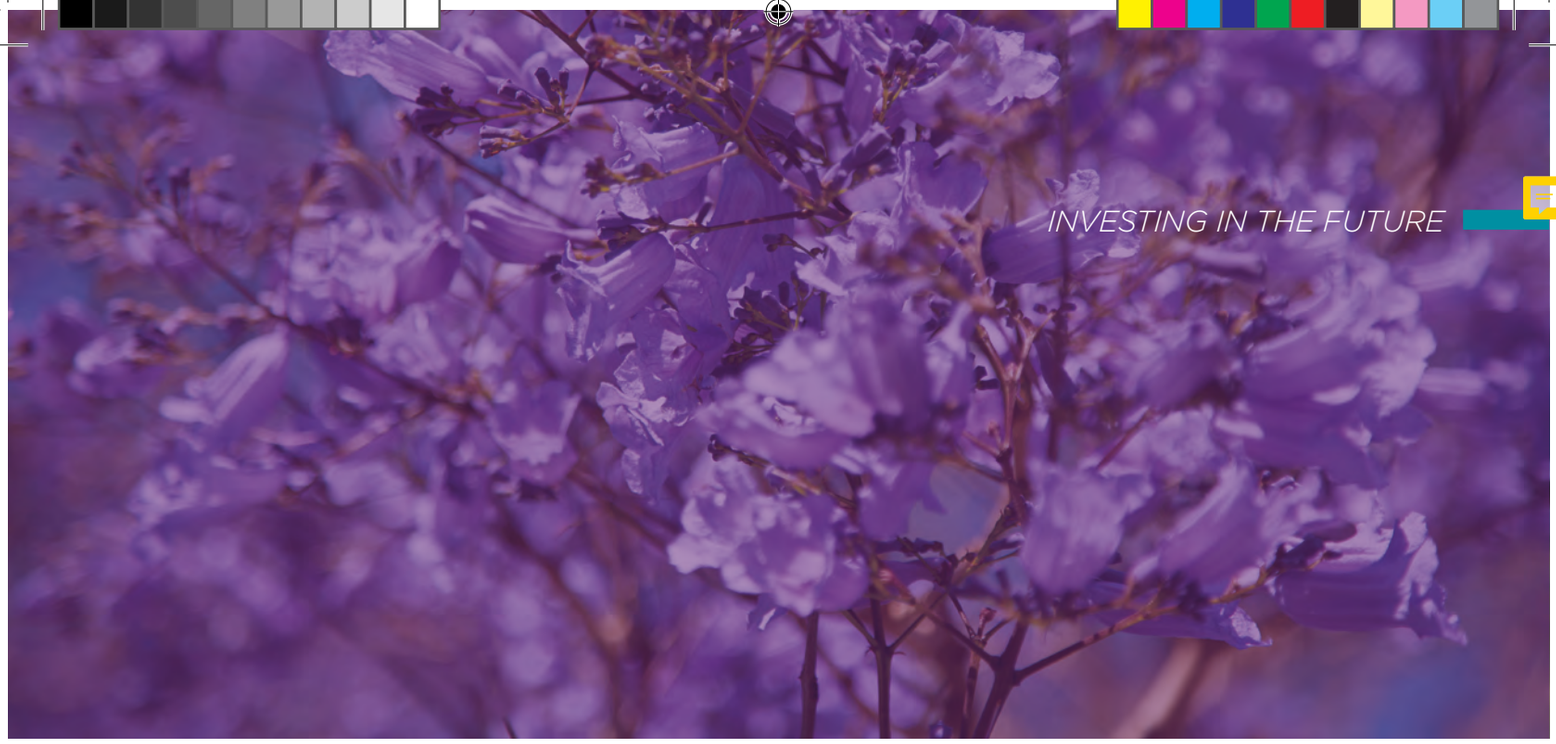

What are UQ endowments and how do they work?

Endowed funds are philanthropic donations invested to generate ongoing income streams. An endowed gift to UQ is powerful and highly valued, as it keeps giving a return, creating greater and greater impact over time.

During 2017, total endowment funds grew significantly from $176.1 million to $218 million and the overall return was 10.4%.

This return is achieved because a portion of the income from the fund is distributed to the purposes specified by the donor. The remainder of the income is added to the capital so that the amount and distribution is preserved for future years.

Endowed funds have become a critical mix of support at any modern university, as they provide long-term and consistent streams of revenue that can be used to empower students, transform teaching and learning, or drive discovery and impact.

Donors can establish an endowed fund at UQ through both lifetime gifts and bequests. A required minimum pledge of $100,000 is needed to establish a new endowed fund but gifts of any value to existing endowment funds are welcome.

The investment strategy used by UQ's specially chosen fund managers is to achieve a long-term return of six per cent plus the Consumer Price Index (CPI). With UQ's current dividend payments being 4.5 per cent plus CPI, this means that, together, we can deliver a lasting benefit to students, teaching and research.

In 2017, the return on this investment portfolio was well above industry standards, and it is the University's intent to grow the principal to one that rivals our peer institutions around the world. We are seeking donors who share a similar vision to create impact and transformative change in perpetuity.

To learn more about investing in our future generations visit **uq.edu.au/giving**

$218M

IN THE UQ INVESTMENT PORTFOLIO FOR THE YEAR ENDING 31 DECEMBER 2017

10.4%

RETURN FOR THE YEAR ENDING 31 DECEMBER 2017

13.36%

FIVE YEAR AVERAGE RETURN FOR THE YEAR ENDING 31 DECEMBER 2017

THE UNIVERSITY OF QUEENSLAND AUSTRALIA | NOT IF, WHEN.

THE CAMPAIGN TO CREATE CHANGE

UQ Endowments

MAKING AN IMPACT

EMPOWERING STUDENT SUCCESS

The Scholarship Endowment Fund

Many students face significant challenges to accessing education. The Aspire Scholarships provide a much-needed boost, enabling them to concentrate on their studies without having to worry as much about making ends meet.

Zachary Sizer grew up on a remote cattle farm, 80 kilometres from the closest town and more than seven hours from Brisbane.

After completing high school, Zachary was awarded a UQ Aspire Scholarship, which is allowing him to study Engineering and Mathematics.

"Being awarded the UQ Aspire Scholarship has taken the pressure off financially and has enabled me to focus entirely on my studies. It has helped me achieve high distinctions in each of my subjects," Zac said.

The Aspire Scholarships are funded by the Scholarship Endowment Fund. Since the Scholarship Endowment Fund commenced in 2005, over 1,700 donors have contributed.

DRIVING DISCOVERY & IMPACT

Queensland Brain Institute (QBI) Bartlett Fellowship Fund

The endowed Bartlett Fellowship, named in honour of QBI's Founding Director, Professor Perry Bartlett was established in 2016 to attract the best and brightest neuroscientists from around the world to QBI.

The fellowship has received support from many generous donors including Professor Bartlett and his wife Jane Bartlett. Another major contributor to the fellowship was the late Maureen Gilmartin (Bachelor of Science '53), a UQ alumnus who passed away in May 2014, leaving a large bequest towards QBI's research into brain function.

Maureen's philosophy in life was to be aware of the needs of others and to assist whilst maintaining a respect for human life. It was this philosophy, along with her interest in science and understanding the need for research into the function of the brain, which motivated her to make this bequest.

In 2018, QBI appointed the first Bartlett Fellow, Dr Zhaoyu Li. Dr Li's work at QBI specialises in motor coordination.

TRANSFORMING TEACHING & LEARNING

Professor Christopher Chen Chair of Reproductive Medicine

This endowed Chair was established in 2011 by UQ alumnus, Professor Christopher Chen (Doctor of Medicine '09), in the form of an endowment. In establishing this Chair, Professor Chen wished to honour his commitment to supporting research into reproductive and infertility medicine for the benefit of humanity.

UQ's global contributions to reproductive medicine will continue for generations to come thanks to this generous endowment. Professor Chen is considered a pioneer of in-vitro fertilisation (IVF) and human egg freezing, and is renowned for achieving the world's first IVF triplet pregnancy.

Chen said he hoped the chair would continue his important work. "My greatest hope is that the Chair will be able to expand upon the research I began over 30 years ago, and achieve medical advances that will benefit the University, academia and all humanity," he said.

THE UNIVERSITY OF QUEENSLAND AUSTRALIA | NOT IF, WHEN.

THE CAMPAIGN TO CREATE CHANGE