



# Innovators Start Here

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We are coming off a year of celebration, one in which KGI marked its 20th anniversary. It was a time to recognize all that our students, faculty, staff, and alumni have achieved, and prepare to build on our accomplishments over the next 20 years.

We do so while remaining dedicated to our mission to provide pathways for students to become leaders in healthcare and the applied life sciences. With this in mind, KGI is already moving boldly forward.

We introduced new academic programs that embrace a fuller spectrum of healthcare professions and needs.

The Postbaccalaureate Pre-PA Certificate Program prepares students for admission to physician assistant programs. The Master of Science in Translational Medicine program offers an in-depth understanding of how scientific research is transformed into commercial products that benefit society. We also welcomed students to our new Master of Science in Human Genetics and Genetic Counseling and one-of-a-kind Master of Science in Human Genetics and Genomic Data Analytics programs.

*“We introduced new academic programs that embrace a fuller spectrum of healthcare professions and needs.”*

The two schools that comprise KGI have undergone a significant transformation. Our School of Applied Life Sciences became the Henry E. Riggs School of Applied Life Sciences, honoring KGI's founding president and recognizing the generosity of Mrs. Gayle Carson Riggs and the Riggs family. Our School of Pharmacy also has a new identity as the School of Pharmacy and Health Sciences, acknowledging the broader scope of its programs.

On the horizon is the KGI School of Medicine, a unique proposal to address physician shortages in Southern California by opening a medical school focused on primary care and partnerships with the community and industry.

These changes led us to reconsider how KGI portrays itself internally and externally. The outcome is a new logo and a tagline—Innovators Start Here—that reflects our entrepreneurial spirit and forward-thinking alumni.

Meanwhile, the Western Association of Schools and Colleges (WASC) reaffirmed KGI's accreditation for another eight years, the longest extension in our history. WASC also accredited both new human genetics programs, with the genetic counseling program earning additional accreditation from the Accreditation Council for Genetic Counseling.

Further validating the quality of a KGI education, the Doctor of Pharmacy program received full accreditation from the Accreditation Council for Pharmacy Education.

An expanded list of articulation agreements increases access to our graduate education. Now undergraduates at 21 institutions can seamlessly transition into master's programs at KGI.

These articulation agreements demonstrate KGI's commitment to collaboration, which our students share. They choose to contribute to our local communities in many ways: providing hygiene kits to homeless people, hosting Come and Meet Pharmacy Days (PharmCAMP) to introduce children to pharmacy and other science-related careers, and participating in health clinics and blood drives.

Acting on their desire to make an impact on society, these students are living the KGI mission. They and others at KGI give us confidence that our next 20 years will be as successful and innovative as the 20 we have already experienced.



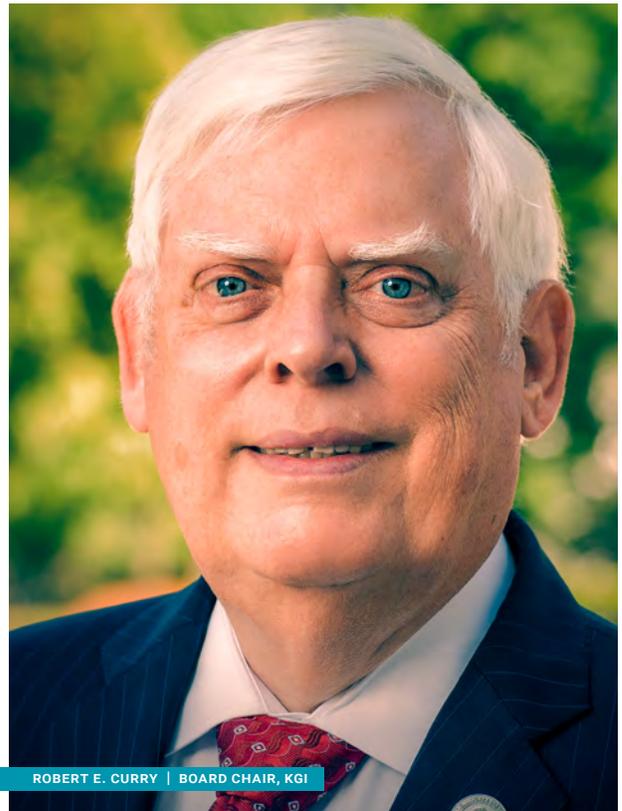
Sheldon M. Schuster  
PRESIDENT, KGI



Robert E. Curry  
BOARD CHAIR, KGI



SHELDON M. SCHUSTER | PRESIDENT, KGI



ROBERT E. CURRY | BOARD CHAIR, KGI

# Connecting Innovation and Collaboration

KGI unveiled a new brand and logo on Thursday, Aug. 23, 2018, celebrating the Institute's innovation and collaboration that lead to career pathways within healthcare and the applied life sciences.

The tagline "Innovators Start Here" embodies the entrepreneurial spirit of its students, faculty, and staff, while also honoring KGI's forward-thinking alumni around the world.

The branding effort began in April 2017 with a research survey, which demonstrated the need for a new visual identity. Faculty, staff, students, alumni, the Board of Trustees, and many others were actively engaged as numerous taglines and logos were proposed and tested. The 16-month process led to the development of the "Innovators Start Here" brand and new KGI logo.

What does the KGI Hexagon represent? Connecting innovation and collaboration to create career pathways within healthcare and the applied life sciences.





*“The new brand and logo are symbolic of the innovation and collaboration that exist and thrive at KGI.”*



“Throughout KGI’s 20-year history, our students and alumni have made a tremendous impact within industry,” KGI President Sheldon Schuster said. “The new brand and logo are symbolic of the innovation and collaboration that exist and thrive at KGI.”

With help from a 30-person committee that included students, faculty, staff, alumni, and trustees, the website redesign focused on improving the user experience and making it easier for prospective students to learn more about KGI’s innovative programs.

[brand.kgi.edu](http://brand.kgi.edu)

### Quick Ways to Navigate KGI's Website



[kgi.edu/alumni](http://kgi.edu/alumni)

THERE ARE PLENTY OF OPPORTUNITIES TO RECONNECT AND ENGAGE WITH KGI!



[kgi.edu/events](http://kgi.edu/events)

ATTEND EVENTS AND GET INVOLVED WITH CAMPUS LIFE AT KGI.



[kgi.edu/map](http://kgi.edu/map)

FIND BUILDINGS, OBTAIN PARKING INFORMATION, AND GET DIRECTIONS.



[kgi.edu/directory](http://kgi.edu/directory)

QUICKLY FIND CONTACT INFORMATION FOR FACULTY, STAFF, AND ADMINISTRATORS AT KGI.



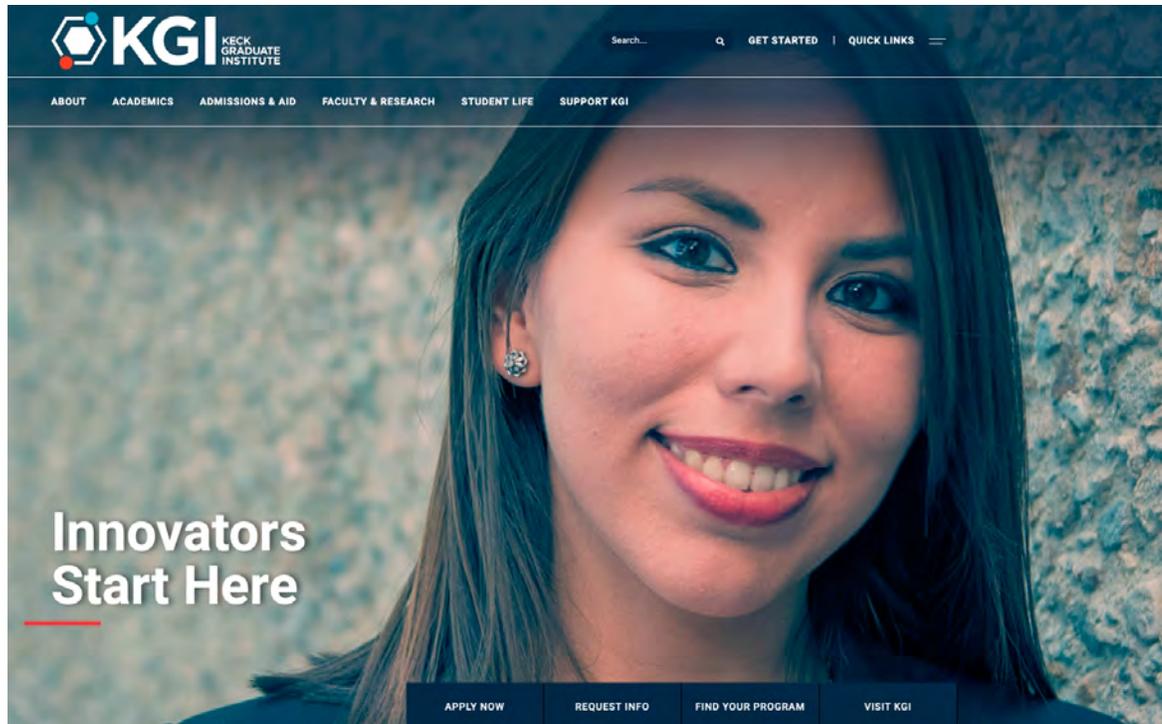
[kgi.edu/give](http://kgi.edu/give)

SUPPORT KGI'S CONTINUOUS GROWTH AND EXPANSION BY MAKING A DONATION.



[kgi.edu/programs](http://kgi.edu/programs)

LEARN ABOUT KGI'S DIVERSE ACADEMIC PROGRAMS IN RESEARCH, INDUSTRY, AND HEALTHCARE.



↑ 2018 VS 2016 →



# In the Past Four Months

## 07/05/2018 KGI Earns Full Accreditation for Pharmacy Program

KGI President Sheldon Schuster announced that the KGI School of Pharmacy and Health Sciences is now fully accredited by the Accreditation Council for Pharmacy Education (ACPE).

“Full accreditation is a tremendous milestone and I am proud of our community for their contributions and dedication through the accreditation process,” Schuster said. “The most rewarding part is being able to witness the journey of our students, from the time the first class enrolled in 2014 to their commencement in May.”

Schuster thanked KGI School of Pharmacy and Health Sciences Founding Dean Kathy Webster, who led the ACPE accreditation process, and everyone who helped to get to this point.

“Through the first four years of this program, our faculty and staff have worked in collaboration with preceptors and experiential sites to provide a valuable experience for our students,” Webster said. “It is exciting to see our first class of graduates enter the community and make a difference with residencies, fellowships, and other opportunities.”

To learn more about the ACPE accreditation, visit [kgi.edu/acpe-story](http://kgi.edu/acpe-story).



## 07/23/2018 Pharmacy School Changes Name to KGI School of Pharmacy and Health Sciences



“KGI continues to develop innovative degree programs that align with the workforce needs of industry,” said KGI President Sheldon Schuster. “The name change to KGI School of Pharmacy and Health Sciences reflects the broadened scope of the school, which already includes PharmD and two new genetics degree programs.”

KGI’s inaugural class of Doctor of Pharmacy (PharmD) students received their degrees this past May. In early September, the first classes were held for the Master of Science in Human Genetics and Genetic Counseling and the Master of Science in Human Genetics and Genomic Data Analytics programs.

To learn more about the name change, visit [kgi.edu/sphs-name-story](http://kgi.edu/sphs-name-story).

**07/24/2018 WASC Reaffirms KGI's Accreditation for Eight Years**

Western Association of Schools & Colleges (WASC) Senior Colleges and Universities Commission (WSCUC) reaffirmed KGI's accreditation for eight more years. WASC's systematic review of the schools in the region provides quality control for all aspects of the institutions, and the commission's decision was based on a thorough self-study report prepared by KGI, an off-site review of that report by a WASC evaluation team composed of faculty and administrators from peers in the region, and a three-day campus visit by that same team last March.



The eight-year reaffirmation of KGI's accreditation is the longest extension in the Institute's history. As a result, KGI's next Offsite Review will be scheduled in Fall 2025, followed by an Accreditation Visit in Spring 2026.

To learn more about the WASC accreditation, visit [kgi.edu/wasc-story](http://kgi.edu/wasc-story).

**07/30/2018 KGI Announces Plans for New Medical School**

The proposed KGI School of Medicine aims to meet the increasing demand for primary care physicians in Southern California. A generous donor's transformational gift to KGI will fund the first phase of the school, which includes the recruitment and hiring of the founding dean.

In May, the KGI Board of Trustees approved the proposal to develop the school. The board based its decision on a feasibility study by strategic consultant, Tripp Umbach,

which concluded that a medical school at KGI would help meet the demand for more primary care physicians in Southern California.

Medical education programs leading to the MD degree in the United States and Canada are accredited by the Liaison Committee on Medical Education (LCME). KGI is following the steps to apply for LCME applicant status.

To learn more about the plans, visit [kgi.edu/som-story](http://kgi.edu/som-story).

**07/31/2018 KGI and the Riggs Family Announce the Establishment of The Henry E. Riggs School of Applied Life Sciences**

The school naming recognizes a transformative gift from Mrs. Gayle Carson Riggs and the Riggs Family in honor of President Henry E. "Hank" Riggs, who in the mid-1990s shepherded the school from his idea to institutional plan to its launch, and served as KGI's president for seven years.

In addition to providing general support for the Henry E. Riggs School of Applied Life Sciences, the gift establishes The Henry E. Riggs Endowed Chair in Business and Bioscience Ethics, The Gayle Carson Riggs Student Center, The Riggs Fund for STEM Inclusion, and the Henry E. Riggs Endowed Student Fellowship Fund.

- The Henry E. Riggs Endowed Chair in Business and Bioscience Ethics will promote the important role of ethics in science and business within the KGI curriculum
- The Gayle Carson Riggs Student Center housed inside the new Oasis KGI Commons will provide space for students to gather, study, and socialize
- The Riggs Fund for STEM Inclusion will promote STEM success among women, girls, and other historically underrepresented student populations
- The Henry E. Riggs Endowed Student Fellowship Fund will establish the first comprehensive (100% tuition) student fellowships (Riggs Fellows) within the Henry E. Riggs School of Applied Life Sciences

To learn more about the transformational gift, visit [kgi.edu/henry-riggs-gift](http://kgi.edu/henry-riggs-gift).



HENRY E. RIGGS | KGI FOUNDING PRESIDENT

# Introducing the Newest Innovative Programs

## **MSGC** Master of Science in Human Genetics and Genetic Counseling



**ASHLEY MILLS, MS, LCGC | PROGRAM DIRECTOR**

The MSGC program is dedicated to benefiting society through the education, training, and development of innovative, collaborative, culturally-competent, articulate, and caring genetic counselors who will serve the needs of individual patients, the healthcare system, and the bioscience industry. KGI's program will prepare graduates to be leaders among healthcare professionals dedicated to the delivery of advanced personally-optimized patient care and the translation of applied and clinical science breakthroughs to enhance the quality of life.

The MSGC program emphasizes inter-professional collaboration, systematic problem solving, the safe, efficient, and ethical use of biotechnology, and personalized patient care. This will be accomplished through a variety of experiences including rigorous didactic course work, clinical training, research preparation, and supplementary activities such as case conferences, grand rounds, journal clubs, and seminars.

The MSGC program has established affiliations with multiple genetics centers throughout Southern California that will offer access to tremendous resources for clinical, industry, and laboratory experiences and provide a culturally dynamic and enriching environment for genetic counseling students.

## **MSGDA** Master of Science in Human Genetics and Genomic Data Analytics



**BARBARA KRAATZ FORTINI, PHD | PROGRAM DIRECTOR**

Students in the MSGDA program will benefit from foundational coursework in human genetics, cutting-edge courses in the applied life sciences, and an innovative human genomics curriculum that combine to prepare them for the exciting field of genomic data analytics.

The first year of study will provide a solid foundation in human genetics and genomics, medical genetics, bioinformatics, and an introduction to working in the bioscience industry and clinical settings. Students will also learn about clinical trial design and data systems used in the bioscience industry and will gain hands-on laboratory experience by generating and manipulating next-generation sequencing data in preparation for a summer industry internship.

In the second year, students will build upon their internship experience with in-depth courses in next-generation sequencing technologies, genetic variant interpretation, and genomic data visualization. Emerging topics in genomics, such as pharmacogenomics and metagenomics, will be presented, and a significant portion of time will be devoted to preparing an industry-sponsored capstone project or a research thesis.

**PPA Postbaccalaureate Pre-PA Certificate**



**JOON KIM, EDD | PROGRAM DIRECTOR**

The PPA program mirrors KGI’s successful Postbaccalaureate Premedical Certificate program by combining rigorous graduate-level applied life science curriculum with invaluable professional skills and competencies such as teamwork, public speaking, and an interdisciplinary approach to solving tomorrow’s healthcare challenges.

The PPA program is best suited for students who are not only looking to further improve upon their credentials, including the need for additional clinical hours, but to develop both breadth and depth to enrich their future career in healthcare.

**MSTM Master of Science in Translational Medicine**



**ANASTASIA LEVITIN, PHD | PROGRAM DIRECTOR**

MSTM is a two-year KGI–Irell and Manella Graduate School of Biological Sciences at City of Hope (IMGS) joint program. Graduates will be uniquely positioned to begin research laboratory careers in the biotechnology/ pharmaceutical industry, clinical or academic laboratories, or pursue further education at the doctoral level, medical education, or both.

This program is aimed at providing students with an applied research experience and an in-depth understanding of how to translate basic research into medical products from the perspectives of both academic research (discovery) and downstream commercial development.

**COMING IN 2019 MSMDE | Master of Science in Medical Device Engineering**



**Anna Hickerson, PHD | Program Director**

The MSMDE—KGI’s newest program—will enroll students for Fall 2019. Students in this two-year program will gain experience in a clinical setting while developing relationships with industry leaders. Graduates will be ready to excel in engineering positions at medical device companies.

MSMDE students will have access to the Medical and Assistive Device Lab, an active space for design, fabrication, and collaboration along with stations for computer design and rapid prototyping. The capstone experience will be a team-based project supported by and in collaboration with industry. The project will involve user experience research, designing and prototyping, along with developing a manufacturing strategy. Additionally, students will have access to a wide range of electives including drug delivery, biosensors, advanced in-vitro diagnostics, biomedical signal processing, and clinical trial design.

# Delivering a Local Impact

Together, John Nguyen and Emma Nkwam work to ensure that QueensCare Health Centers provide high-quality care to underserved patients in Los Angeles. The two have also been colleagues before—at KGI, where both completed the Postdoctoral Professional Masters (PPM) in Bioscience Management program in 2018.

“I think we work better as a team because we already did this at KGI,” says Nkwam, who holds the newly created role of quality manager at QueensCare Health Centers and previously earned a PhD in health and life sciences at the University of the West of England. “We know how to deliver on deadlines and are serious minded.”

The program they undertook was designed for students with a doctoral degree in a science or engineering discipline and a desire to pursue management positions or entrepreneurial ventures related to the applied life sciences industry.

“John and Emma were both able to learn to speak the language of the business and the regulatory aspects, neither of which they had encountered before in their training,” says KGI Professor James Sterling, a cofounder and former director of the PPM program who continues to advise students.

Coming into the PPM program, Nkwam was interested in working for a biotechnology company. Nguyen, a physician with an obstetrics and gynecology practice, wanted to learn how to turn his idea for a medical device—a technology to detect preterm labor—into a tangible product.



Nguyen was the first to shift direction: Months before graduating from the PPM program, he became the chief medical officer for QueensCare Health Centers. He had hoped for an executive-level position someday but never expected to obtain one so soon.

“The program really prepared me for interviews. I learned to make my presentation clear, concise, and thorough,” says Nguyen. “I think I’m more assertive now. I can communicate better. And I carry myself with more confidence than ever before.”

As chief medical officer, Nguyen now spends more time in meetings than patient care. As a result, he considers the organizational behavior course he took at KGI particularly beneficial.

“I apply everything I learned at KGI,” he adds. “I’m more analytical now. I look not just at clinical data, but also market data. And I look at pricing and do comparisons when we order drugs.”

Nguyen also turned to KGI for assistance at his new organization. Last spring, he brought in several Master of Business and Science (MBS) students on a part-time basis and encouraged Nkwam to join him full-time after graduation.

New to healthcare administration, Nkwam finds herself drawing on the communication, relationship-building, and data-analysis skills she developed through the PPM program.

*“I think I’m more assertive now. I can communicate better. And I carry myself with more confidence than ever before.”*

“With a PhD, you think you don’t have more to learn. But even with all my education, every class I took taught me something new. Learning to work in teams, which we did all the time at KGI, was one of the biggest benefits,” says Nkwam. “I also had no background in business, entrepreneurship, or analytics before.”

Now Nkwam is responsible for tracking and analyzing extensive quality measures. Enjoying her work, she is uncertain whether she will move into the biotechnology industry after all.

“If I do, it will be in a very different way. Instead of drug discovery or strategic planning, it will involve peer-to-peer communication, medical affairs, or health outcomes research,” explains Nkwam.

In the meantime, she is applying her abilities to an additional project outside work: Collaborating with Nguyen to develop the medical device that first led him to the PPM program.

“Of course I recruited someone from KGI to help with the medical device,” says Nguyen, who has also received guidance from KGI President Sheldon Schuster and assistance from current MBS students Eric Benjamins and Alex Hilbert. “I wouldn’t trust anyone else!”

# Redefining the PharmD Pathway

Armando Cortes, PharmD '18, was initially attracted to pharmacy because he wanted a career in a health field incorporating chemistry, his undergraduate major and an area of science he loved. He came to KGI with a desire to help as many people as possible through his work. Also seeking to make use of his bilingual skills, Cortes envisioned opening his own pharmacy after graduation.

Instead, he recently began a two-year PGY1/PGY2/MS Health System Pharmacy Administration Residency at the University of Chicago Medicine. Cortes was one of just 10 new U.S. pharmacy graduates selected this year for the residency program designed to develop pharmacy leaders.

"I really tried to convey my passion for the pharmacy field," he says. "It's all about how you present yourself. If you're able to present yourself in a professional and articulate manner, practice what you'll say, and reflect on what you want for your pharmacy experience, you'll be successful."

Assistant Professor of Clinical Sciences Julie Truong, a faculty mentor to Cortes at KGI, is unsurprised that he secured a residency and believes he is deserving of recognition.

"Armando always struck me as someone who would be a pharmacy director someday because he's someone who can lead a team and really cares about people. He's very fair-minded and balanced. And he has always done really great work," says Truong.



ARMANDO CORTES | PHARM D '18

Coursework and a variety of experiences at KGI led Cortes to realize that a residency, followed by a health-system pharmacy management role, had become his professional goal.

“It goes back to the reason I chose pharmacy. I want to do my best for the community. In management, whenever you make a change, you don’t impact just one person—you spread the impact,” he explains. “I also enjoy the professional development aspect of management, helping other people develop and be the best they can be.”

Serving as president of the Student Society of Health-System Pharmacists during his time at KGI contributed to his own professional and personal development.

“I like that KGI offers leadership opportunities and promotes getting out of your comfort zone,” says Cortes.

Working as an intern pharmacist at Riverside University Health System Medical Center was another influential experience, solidifying his decision to go into health-system pharmacy.

“I was able to see the outpatient setting in a hospital, which was like a community pharmacy but in a hospital,” Cortes recalls. “I was also able to rotate through the in-patient setting and afterward go into the clinical setting. I was able to round with the medical team and see clinical pharmacy in action.”

Now Cortes is even closer to the action in a clinical setting. A month into his residency, Cortes had already been tapped for the Pharmacist In-Service On-Call Program that placed him in the hospital continuously for 24 hours.

*“I like that KGI offers leadership opportunities and promotes getting out of your comfort zone.”*

“We’re here 7 a.m. to 7 a.m. the next day to get the full experience,” says Cortes. “The interesting part is that you’re the only clinical pharmacist on duty overnight. At first you do it with an experienced person, but you’re trained to be independent very fast.”

Cortes also has demands on his time that extend beyond the residency. In addition to his training in the clinical setting, he is participating in the American Society of Health-System Pharmacists (ASHP) Foundation’s Pharmacy Leadership Academy, which enables Cortes to continue his personal and professional development through coursework enhancing leadership skills in a healthcare setting. Participating provides academic credit toward an MBA, another educational opportunity Cortes plans to pursue.

“I believe in continuing to learn,” says Cortes. “I’m currently working on a group project with seven individuals, which is the same number I had on my team at KGI.”

# Faculty Startup Creates Student Opportunities

The most accurate way to diagnose infectious diseases is through nucleic acid testing, but this requires sending clinical samples to a central laboratory. Antigen-based tests can be used at the point of care to diagnose acute infections, but they are far less reliable. For example, antigen-based tests to diagnose chlamydia infections produce the correct result in just 30 percent of cases.

Angelika Niemz, the Arnold and Mabel Beckman Professor at KGI, sought a solution to this tradeoff. Backed by multiple grants from the National Institutes for Health, she worked to develop compact nucleic acid testing devices that would be easy to use in a doctor's office or health clinic yet provide the same accurate results as central laboratory tests. Now KGI holds a U.S. patent for the technology Niemz and her research group invented for this purpose.

The patented technology enables a user to simply insert a clinical sample into a disposable cartridge resembling a home pregnancy test, then put the cartridge into a small inexpensive instrument, wait for a green light, and see the test results.

"It's a platform technology, so you can test for a variety of diseases," explains Niemz, who has focused on its effectiveness in diagnosing sexually transmitted diseases such as chlamydia and gonorrhea but notes that it would be equally useful in testing for dengue fever, the Zika virus, urinary tract infections, and respiratory diseases. "You can take different types of samples—blood, urine, swabs—and look at DNA and RNA."



ANGELIKA NEIMZ | ARNOLD AND MABEL BECKMAN PROFESSOR, KGI

Another benefit of the technology, says Niemz, is the projected \$50 price tag of the instrument required to run the tests. This is far lower than existing instruments costing from \$9,000 to \$45,000, plus annual maintenance and service charges.

“The patent is part of taking the technology from an academic exercise to something that can be commercialized,” says Niemz. “Our first goal is to get the technology into professional point-of-care settings. The big-picture goal is to have the device approved for home testing. We want to provide actionable results in the right setting at the right time.”

This objective has led the long-time KGI professor to take on the new role of entrepreneur. To bring the technology to market, Niemz has cofounded a company called Efyian with Hsiang-Wei Lu, a research assistant professor in her lab who holds a PhD in mechanical engineering.

“Hsiang-Wei is the engineering mastermind behind the technology and director of research and development for the company,” says Niemz, who is serving as Efyian’s president while remaining a KGI faculty member. “We complement each other well because we have tenacity in different aspects.”

Yet Lu had never anticipated becoming an entrepreneur, saying, “I didn’t think I had the makeup to be a businessman. But my father was an entrepreneur who told me the path drawn by other people is not worth taking.”

For Niemz, launching a company represents a new challenge. The tasks she and Lu will need to complete successfully include raising money from investors and scaling manufacturing of the product at a low cost and suitable quality.

*“The patent is part of taking the technology from an academic exercise to something that can be commercialized.”*

As Niemz and Lu have moved from a campus lab to the helm of a company, they have included many others at KGI. Assistant Professor Anna Hickerson and Kristina Roskos, PhD ’13, contributed to the earlier stages of research. Current PhD student Abrar Al Maghribi, MS ’18, is involved. Jim Osborne, the Robert E. Finnigan Professor of Applied Life Sciences at KGI, serves on Efyian’s advisory board. Students from KGI, The Claremont Colleges, UC Berkeley, and Southwestern Law School have also participated, working on the technology and business aspects of the project.

“We’re fulfilling KGI’s mission of translational research, providing a training opportunity for students who can learn new skills and gain experience, and creating intellectual property that will help KGI grow,” says Niemz.

# Transforming into a Bioprocessing Scientist

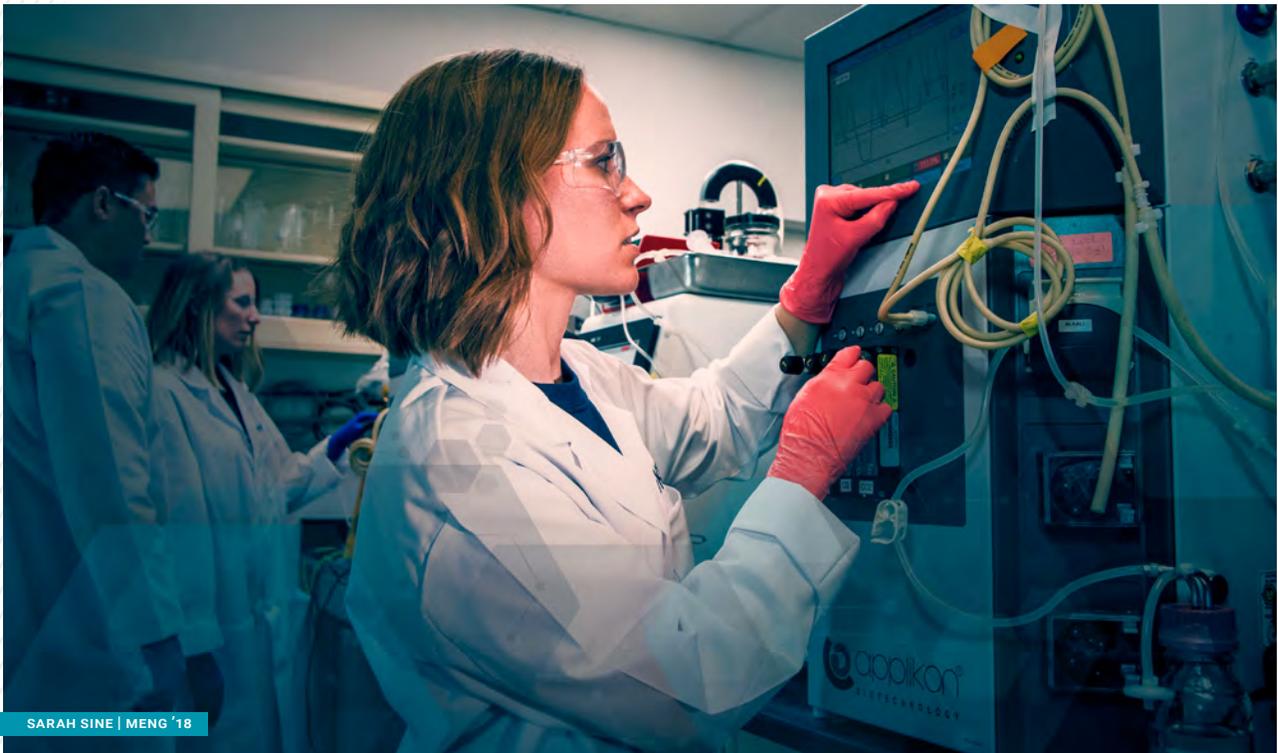
As a bioprocessing scientist, Sarah Sine, MEng '18, is involved in production and process optimization for Cell Care Therapeutics, contributing to the company's development of stem cell-derived therapies for inflammatory neurovascular diseases.

"They first took me on as an intern, based on my bioprocessing experience. From that day, they wanted to keep me," says Sine.

She felt the same about working at Cell Care Therapeutics. After graduating from KGI with a Master of Engineering (MEng) in Biopharmaceutical Processing degree, Sine joined the company full-time.

"The therapy is very new and innovative, which drew me to it," she explains. "I really enjoy what I do now and am where I'm supposed to be. I get to do science, and my voice matters. Every aspect of the job fits me very well."

Yet back in 2016, Sine had a brand-new bachelor's degree in biology from West Virginia University, a desire to work in the biopharmaceutical industry, and no idea how to achieve this career goal. Then she decided to come to KGI for the MEng program.



SARAH SINE | MENG '18

“I didn’t even know what a bioreactor was when I got here,” she recalls. “I chose the program because it was technical. After being in the program, I wanted to go into bioprocessing development. The lab is my happy place, and that’s where you do the work.”

Sine was like many students who enter the MEng program, says Parviz Shamlou, George B. and Joy Rathmann Professor and director of the MEng program and Amgen Bioprocessing Center at KGI. Positions in bioprocessing and biomanufacturing are growing, but few academic programs are available to prepare students for them. KGI’s MEng program fills that gap, offering students with undergraduate degrees in engineering and the life sciences the technical skills, scientific knowledge, industry exposure, and mentoring and networking opportunities they need.

“Within two years, our students transform completely, to professionals who can design and run bioreactors and launch biopharmaceutical products. The transformation is amazing,” says Shamlou.

He points to Sine as a clear example. Shamlou taught Sine in several courses and also served as mentor and advisor for her Team Master’s Project (TMP) sponsored by Gilead Sciences. He praises the quality of her work, technical growth, and enthusiasm for the field.

“She fit the program exceptionally,” says Shamlou, whom Sine considers her most influential professor because of his passion for bioprocessing as well as his extensive industry knowledge and experience.

*“Within two years, our students transform completely, to professionals who can design and run bioreactors and launch biopharmaceutical products.”*

Sine found another mentor in KGI PhD student Andrew Burns, whose research focuses on developing a scalable bioreactor for the growth of human cells. She wanted to work with human stem cells and ended up assisting Burns in the lab for more than a year, helping him with stem cell scaling and the bioreactor. She also contributed ideas of her own that he is now testing.

“Aside from being really smart and tenacious, she enjoyed being in a lab, which made it easy to teach her,” says Burns. “I taught her to culture human stem cells, and that’s what she does now in her job. She’s already helping her company design things that even I can’t comprehend.”

Shamlou believes Sine is just getting started. He anticipates many accomplishments ahead for her, with Cell Care Therapeutics and throughout her career.

“Sarah will reach high and go far,” predicts Shamlou. “As the company grows, she will grow with it. She already has someone reporting to her because of her knowledge and skills. I have no doubt that she will reach a senior position in a relatively short time.”

# Year in Review

## 07/2017 Pharmacy Students Learn How Information Technology Can Improve Patient Care

Technology is changing much of society, including the delivery of healthcare. As KGI School of Pharmacy and Health Sciences students are discovering, it also is creating new opportunities for pharmacists to improve patient care and increase their professional impact. Many of these students are learning to leverage data derived from today's technology through the health information technology certificate program available as part of KGI's pharmacy education.

## Marc Doble '02 Named to Professional Science Master's Steering Committee

As a graduate of KGI's first-ever Master of Business and Science class in 2002, Marc Doble has developed into a top leader in the bioscience industry. Now an Executive Director for Business Performance at biotechnology powerhouse Amgen, Doble is getting back to his roots as he was appointed to the Professional Science Master's National Office Steering Committee.

## Professor Prepares Pharmacists to Respond to the Opioid Epidemic



TALIA PUZANTIAN

Opioid prescriptions in the United States have quadrupled since 1999, and millions of people are using them for nonmedical reasons. Today, opioid overdoses surpass any other cause of accidental death in the country. KGI Associate Professor Talia Puzantian is seeking to alleviate this national epidemic by enhancing California pharmacists' ability to recognize and respond to opioid misuse and overdose. To achieve this goal, she was awarded a one-year grant provided by the Centers for Disease Control and Prevention through the California Department of Public Health and the San Francisco Department of Public Health.

## 08/2017 Board of Trustees Extends Contract for KGI President Sheldon Schuster

The KGI Board of Trustees unanimously approved an extension of KGI President Sheldon Schuster's employment for five years, through June 2022. Schuster is the second president in KGI's history, and he is now the longest-tenured president among the seven institutions within The Claremont Colleges. On July 15, 2003, Schuster succeeded Founding President Henry "Hank" Riggs.



SHELDON SCHUSTER

### **KGI Changes MBS Degree Name to Master of Business and Science**

The KGI Henry E. Riggs School of Applied Life Sciences faculty members voted to change the name of the MBS program to Master of Business and Science from Master of Bioscience. Alumni, current students, and faculty provided feedback on the change, and the Master of Business and Science name is a clearer depiction of the program's intersection between the two fields.

### **KGI Adds Kiran Mazumdar-Shaw, Richmond Wolf to Board of Trustees**

Keck Graduate Institute, a leader in applied life sciences and healthcare education, appointed two new members to its Board of Trustees. Kiran Mazumdar-Shaw began her first term as a trustee while Richmond Wolf started his second term. KGI's Board of Trustees consists of 27 leaders in the industries of bioscience, healthcare, and education.

### **09/2017 Research Enhances a Pharmacy Student's Education**



JAE CHANG | PHARM D '19

Jae Chang, PharmD '19, isn't your typical KGI student. Rather than studying a subject related to science or engineering as an undergraduate, he earned a degree in English with a minor in film. Once he decided to switch professions and become a pharmacist, he realized he needed to catch up on some science prerequisites, as well as gain valuable research experience. Chang worked with KGI Assistant Professor of Biopharmaceutical Sciences Rachita Sumbria during the summer and directly contributed to her research on the blood-brain barrier and new treatment strategies for Alzheimer's disease.

### **Explore MED Program Helps Undergraduates Prepare for Healthcare Careers**

Many undergraduates interested in science think about a career in healthcare. Those who take part in KGI's Summer Explore MED program discover what is involved in both preparing for and working in the field. Since the program began in 2014, students from colleges near and far at various stages of their undergraduate education have been able to come to KGI for two weeks each summer. They shadow healthcare professionals, visit LA-area medical and healthcare graduate programs, and learn how to prepare for successful admission to the program of their choice.

### **Kim Nguyen Selected as Future Pharmacist of the Year**

In her fourth and final year of the PharmD program, KGI student Kim Nguyen earned selection as the 2017 Future Pharmacist of the Year at an awards gala held at the San Diego Zoo. Nguyen led the development and implementation of Come and Meet Pharmacy Days (PharmCAMP), an engagement program that exposes primary and secondary school students from underserved communities to careers in pharmacy.

## 10/2017 Alumna Nida Khan Rises to Stardom in Life Sciences Consulting



In the field of biotechnology consulting, women in leadership positions are somewhat of a rarity. Nida (Moosa) Khan, MBS '06, principal for life sciences strategy and transformation at Capgemini in Chicago, is among these exalted few. Khan was already on a fast track when she came to KGI, having completed her BS in biology at California State University, San Bernardino, in just two years with a perfect GPA. KGI was the perfect mix of business and science for Khan, who fell in love with the program. It exposed her to topics and career options she didn't know existed.

## Team Master's Project Helps Company Launch New Technology

Spectrum Laboratories needed to test a new product. KGI had the appropriate space, as well as students ready to help a company solve a practical problem. It was the perfect scenario for a Team Master's Project pairing the two. Over the course of the project, team members saw the fruits of their labor as Spectrum Laboratories brought the product to market.

## School of Pharmacy and Health Sciences to Launch Fellowship Program in Summer of 2018

The KGI School of Pharmacy and Health Sciences announced the launch of a Biopharmaceutical Industry Fellowship Program in July of 2018. This 24-month program is designed to provide Doctor of Pharmacy graduates with in-depth, specialized training in the biopharmaceutical industry.

## 11/2017 Students Expand Expertise in Medical Diagnostics at AACC Conference

Capitalizing on a thrilling professional development opportunity, 22 KGI students attended the American Association for Clinical Chemistry Emerging Clinical and Laboratory Diagnostics conference in San Diego on Nov. 9-10. KGI students participated in the sessions, asked questions, and offered their developing expertise in the lively discussions at the poster session.

## Two MBS Students Selected as TEDxKGI Speakers

Ross Steinberg and Shan Ahmad, both second-year Master of Business and Science students at KGI, were selected to speak at the TEDxKGI event on Friday, Feb. 2, 2018. Both speakers were chosen from among a group of current KGI students who presented sample talks at a student speech competition on Oct. 18.



## #GiveTueKGI Campaign Raises More Than \$11,000 on First Day

KGI participated in the global giving movement, Giving Tuesday, and raised \$11,589 in the first day of the #GiveTueKGI campaign that ran through Dec. 31. The campaign's launch day featured more than 50 donors supporting KGI's innovators, researchers, pharmacists, leaders, scientists, entrepreneurs, pioneers, and change makers.

## 12/2017 Assistant Professor Kiana Aran Helps Build School in Senegal



KIANA ARAN

Kiana Aran, a KGI assistant professor of medical diagnostics and therapeutics, spent one week in Senegal from Oct. 29 through Nov. 5, participating in a buildOn project to work side-by-side with villagers to build a school and bring hope through education. Aran was first introduced to buildOn through one of her college friends who runs marathons to raise money to build schools. Through her time in Senegal, Aran became inspired by buildOn's mission. She aims to share the community service spirit at KGI outside of her faculty responsibilities.

## Student Seeks to Make a Global Impact Through Science, Business, and Education

Most students who accompany KGI Dean of Research and Ferré/Marquet Vaccine Research Center Founding Director Larry Grill to Africa each summer spend four weeks at the University of Botswana, helping with research into low-cost vaccines for developing countries. But Eric Benjamins, a student in KGI's MBS program and 2016 Pitzer College biology graduate, didn't stop there. No student has been part of the research project longer than Benjamins; he started in Botswana in 2014, continuing the work with Grill in Claremont.



ERIC BENJAMINS | MBS '19

## KGI and Peru's Universidad Nacional Mayor de San Marcos Sign Articulation Agreement

KGI and the Universidad Nacional Mayor de San Marcos (UNMSM)—located in Lima, Peru—have signed an articulation agreement that allows UNMSM students a fast track in the application process to attend graduate school at KGI. The agreement simplifies the application process to KGI's Master of Business and Science, Master of Engineering in Biopharmaceutical Processing, and Master of Science in Applied Life Sciences programs, where qualified students do not have to pay an application fee, no standardized test scores are required, and only one recommendation letter is needed.

### 01/2018 **Talia Puzantian Featured in *USA Today*, *Washington Post*, and *U.S. News & World Report***

Pharmacists are uniquely positioned to identify those at risk and help save the lives of patients who overdose on opioids, said Talia Puzantian, a pharmacist and associate professor of clinical sciences at KGI. California and other states require pharmacists to undergo training before they can dispense naloxone to patients who don't have a doctor's prescription. Puzantian and others say that in California not enough pharmacists are getting the training, which can be taken online or in person and can cost a few hundred dollars.

### **Alumni Develop Data Analytics Skills at BioCentury Internship**



Three alumni contributed to the American Society of Hematology (ASH) 2017 Emerging Targets publication while serving as interns for BioCentury. Obtaining the internship through resources provided by KGI's Career Services, the trio included Nebiat Hunegnaw, MBS '18; Lynn-Indora Edmond, MS '18; and Ariel Brown, MBS '17. The trio conducted a survey of the emerging molecular targets at the ASH conference.

### **Faculty Research Describes How Ions Play Key Roles in Controlling Mucosal Surfaces**

Two papers from KGI Professor James Sterling and Shenda Baker, President and COO at Synedgen, describe how ions interact with the mucosal surface glycans to ensure health. The paper "A Continuum Model of Mucosa with Glycan-Ion Pairing," was published Jan. 15 in the journal *Macromolecular Theory and Simulations*.

### 02/2018 **TEDxKGI Event Presents Thought-Provoking Ideas on Shaping the Future**

KGI hosted its first-ever TEDxKGI event on Friday, Feb. 2, presenting thought-provoking ideas and inspiring individuals to learn new perspectives. The theme of TEDxKGI— "Shaping the Future"—coincided with KGI's 20th Anniversary, and was the focal point for the speakers' stories.

### **Students Earn Certification in Mental Health First Aid**

On Saturday, Feb. 10, a group of 25 third-year students from the KGI School of Pharmacy and Health Sciences took advantage of an opportunity to receive Mental Health First Aid training. The eight-hour course was taught by Lise Porter, a trainer for Mental Health First Aid USA, and Talia Puzantian, an associate professor of clinical sciences at KGI.



### Keck Graduate Institute Helps Introduce Area Students to High-Tech Healthcare

A doctor or nurse is what typically comes to mind when young people think about health professionals. Often, they're unaware that other career paths exist in health fields. KGI participated in an event designed to help change that perception. Titled "High-Tech Healthcare: The Future of Precision Medicine," it introduced students of high school and community college age to genomics, telemedicine, robotics, and wearable devices with healthcare applications.

### 03/2018 Rare Disease Day Focuses on Cellular and Genetic Therapies

On Friday, March 2, KGI hosted its 11th Annual Rare Disease Day with presentations from prominent industry leaders and a poster session from KGI students. The event served as an opportunity for students, faculty, and guests to collaborate, discuss, and raise awareness for rare disease therapies.

### 2nd Annual PharmCAMP Features Fascinating Lessons for Young Students



DNA extraction, prescription drug safety, and antibiotic awareness are generally graduate-level topics, but that did not stop Rialto Unified School District children at the 2nd Annual PharmCAMP. Hosted by KGI on two Saturdays in March, student volunteers creatively used strawberries, ice cream, and Play-Doh to introduce complex science lessons to children.

### STEM Inc. @ KGI Event Features Academic and Industry Leaders

KGI hosted its first ever STEM Inc. event on Thursday, March 22, featuring a panel discussion in honor of Women's History Month on how to succeed in the STEM workplace. The discussion included panelists Mary Hatcher-Skeers of the W.M. Keck Science Department, Sukumarakurup Krishnakumar of KGI, Yolanda T. Moses of UC Riverside, and KGI alumna Aditi Shastry, MBS '17.

### 04/2018 American Pharmacists Association Selects KGI Student as Executive Resident

The accolades are rolling in for Rajan Vaidya, PharmD '18. Early in March, the American Pharmacists Association Foundation selected him as its 2018-2019 Knowlton Center Executive Resident in Association Management and Leadership. Soon after, he became California Pharmacists Association Student Pharmacist of the Year.



RAJAN VAIDYA | PHARM D '18

### KGI Graduates Explore Regulatory Affairs Careers at Gilead Sciences

Stephanie Sakamoto, MBS '13, and Ashley Rhoades, MBS '16, left KGI seeking careers in regulatory affairs. They're off to a strong start after participating in a regulatory affairs rotational program at Gilead Sciences Inc., a leading research-based biopharmaceutical company headquartered in Northern California.

### Pharmacy Professor Prepares Students for the Technology and Ethics of Practice

Robert Stein was named Pharmacist of the Year by the Orange County Society of Health System Pharmacists (OCSHP), an organization representing the area's hospital and health system pharmacists. Stein, a professor of practice for pharmacy law and ethics and healthcare information technology at KGI, is a member of the OCSHP board of directors and serves as its delegate to both the California Society of Health System Pharmacists and the American Society of Health System Pharmacists.



### 05/2018 Students Impress Venture Capitalists at 15th Annual Business Plan Competition

At KGI's 15th Annual Business Plan Competition, the winners were two student teams working to help startup companies developing novel therapeutics. The five teams in the April 24 competition were judged by a panel of industry executives and investors. As in previous years, the panel was led by KGI Chairman of the Board of Trustees, Bob Curry.

### PharmD Students Share the Excitement of Entering Residencies and Fellowships

Within the KGI School of Pharmacy and Health Sciences' inaugural class of Doctor of Pharmacy graduates, 14 students entered fellowships or residencies. Several of the students described the excitement surrounding their next opportunity and how it fits with their career aspirations.

### 17th Annual Commencement Ceremony Marks Largest Event in KGI History



KGI capped a stellar 2017-2018 academic year with its 17th Annual Commencement Ceremony on Saturday, May 12 at the Sheraton Fairplex Conference Center, featuring 240 graduates and more than 1,400 attendees. In addition to celebrating graduates across six different degree programs from the Henry E. Riggs School of Applied Life Sciences, KGI graduated its first class from the School of Pharmacy and Health Sciences, which enrolled its first cohort for the Doctor of Pharmacy (PharmD) program in 2014.

**06/2018 KGI and City of Hope Launch Master’s Program in Translational Medicine**

For students with a strong interest in applied research, the new Master of Science in Translational Medicine (MSTM) program offered jointly by KGI and the Irell and Manella Graduate School of Biological Sciences at City of Hope represents an unmatched opportunity. The two-year MSTM program is designed to offer students with bachelor’s degrees and limited research experience an in-depth understanding of how to translate scientific research into commercial products that benefit society.



**KGI School of Pharmacy and Health Sciences Partners with AbbVie, Inc., for Fellowship Program**

The KGI School of Pharmacy and Health Sciences is proud to partner with AbbVie, Inc. to offer the first AbbVie-KGI Biopharmaceutical Industry Fellowship. Founded in 2018, the program aims to provide exceptional biopharmaceutical industry training for Doctor of Pharmacy graduates with a broad exposure to the area of scientific communications and medical affairs.



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Keck Graduate Institute (KGI) was founded in 1997 as the first higher education institution in the United States dedicated exclusively to education and research related to the applied life sciences. KGI offers innovative postgraduate degrees and certificates that integrate life and health sciences, business, pharmacy, and genetics, with a focus on industry projects, hands-on industry experiences, and team collaborations.

A member of The Claremont Colleges, KGI employs an entrepreneurial approach and industry connections that provide pathways for students to become leaders within healthcare and the applied life sciences. KGI consists of three schools: Henry E. Riggs School of Applied Life Sciences, School of Pharmacy and Health Sciences, and the Minerva Schools at KGI.

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