UNIVERSITY OF NORTH CAROLINA CHARLOTTE KLEIN COLLEGE OF SCIENCE

N E W S L E T T E R SPRING 2025

MEET THE DEAN

BERNADETTE DONOVAN-MERKERT

The College of Science was established in July 2023, when two new colleges were formed from the College of Liberal Arts and Sciences. Bernadette Donovan-Merkert was announced as the interim dean upon creation of the new college, and took the post permanently in August 2024, when she was named as the Founding Dean. The College was named in Sept. 2024 with a generous gift from Fred and Gené Klein.

Donovan-Merkert is a professor of chemistry, and served as department chair for more than 18 years. As chair she was integral in the design and development of the Nanoscale Science Ph.D. program and also served as the program director.



DISTINGUISHED SERVICE

Read more about Dean Donovan-Merkert

MEET THE DEAN'S LEADERSHIP TEAM



DANITA DRUV

Associate Dean For Undergraduate Student Afairs



WATTHEW PARRU

Associate Dean For Academic Administration



Adam Reitzel

Associate Dean For Research And Graduate Education



Assistant Dean for Finance and Personnel









UNC CHARLOTTE NAMED AN R1 UNIVERSITY



<u>Read more</u> about our R1 status.



NAMING CEREMONY HONORS FRED AND GENÉ KLEIN'S TRANSFORMATIONAL \$10 MILLION GIFT

On September 24, UNC Charlotte recognized a transformational \$10 million gift from Gené and Fred Klein by naming the Klein College of Science and dedicating the Science Building as Klein Hall.

"Fred and Gené understand how UNC Charlotte's success and our region's success go hand in hand," said Sharon L. Gaber, chancellor. The generosity of the Klein family allows us to further amplify the innovations and discoveries at Charlotte as we set our course to become a preeminent public research university."

Read more about the Kleins and their gift to the College

CHEMISTRY STUDENTS NAMED NATIONAL TOP 5 FINALISTS FOR INVENTION DETECTING ILLICIT DRUGS

Students Naz Fathma Tumpa, a chemistry and nanoscale science Ph.D. student, and Aiden Hawkins, a senior chemistry major working toward a bachelor's of science degree, worked with advisors Michael G. Walter and Tyler J. Adams on their invention "Color-Metric Sensing of Amine Compounds for Illicit Drug Detection." Using a bright, color-changing solution, they can test for drugs like fentanyl, heroin and cocaine, which all contain an amine compound. The team placed in the national Top 5 of 300 teams. With Tumpa and Hawkins conducting research together, they mark the first-ever finalist team with both a graduate and undergraduate student since the Collegiate Inventors Competition began in 1990. The competition is a program of the National Inventors Hall of Fame and is sponsored by the USPTO.



Check out the video here!



Learn more about the finalists and their invention



10,000TH REHABILITATED RAPTOR RELEASED ON CAMPUS

The College of Science hosted the <u>Carolina Raptor Center</u> as they released their 10,000th rehabilitated raptor on Saturday, Aug. 10, 2024. The red-tailed hawk spent 58 days in CRC's hospital facility and was released into the trees at the Hauser Alumni Pavilion in front of a crowd of guests, including families and Carolina Raptor Center volunteers.

The event was held on UNC Charlotte's campus where the center was "hatched" 49 years ago, in what is now the Department of Biological Sciences.

Watch the hawk take flight

CENTER FOR BIOMEDICAL ENGINEERING AND SCIENCE MOVES TO KCOS, RICHARDSON NAMED AS DIRECTOR

Christine Richardson, Ph.D., professor and chair of biological sciences, has been selected to serve as the next Director of the Center for Biomedical Engineering and Science. Richardson will remain in her role as Chair of the Department of Biological Sciences and will lead CBES as a prominent hub for biomedical research in the Charlotte region and beyond, elevating the role of interdisciplinary biomedical research on campus.

With this new role, CBES is shifting to the Klein College of Science with the support of researchers from across campus, including strong faculty collaborations from the William States Lee College of Engineering. Since the Woodward building opened in 2005, it has been home to research labs from bioengineering and biological sciences, which encourages collaboration.

Read more about the Center for Biomedical Engineering and Science





CENTER FOR BIOMEDICAL ENGINEERING AND SCIENCE

NOTABLE GRADUATES



YELIXZA AVILA PH.D. IN NANOSCALE SCIENCE

A May 2024 graduate, Avila was selected as an iCURE scholar for a three-year postdoctoral fellowship with the National Cancer Institute. CURE supports the career progression of scholars working toward research independence and fosters the biomedical research pipeline.



ASHLEY CHOI B.S. IN BIOLOGY AND BIOTECHNOLOGY

A Dec. 2024 graduate, Choi worked in the biology department as a communications consultant to help students improve their scientific communication and was an active member of SACNAS, traveling to conferences to present her research from the Truman lab.



JADEN RAMSEY B.S. IN MATH & ACTUARIAL SCIENCE

A Dec. 2024 graduate, Ramsey followed in her mother's legacy footsteps to attend Charlotte but forged her own path, earning multiple scholarships for her academic success in actuarial science.

Read more about Jaden

Read more about Yelixza

Read more about Ashley

Watch her video

NEW SCHOLARSHIP FOR CHEMISTRY STUDENTS

John Risley, Ph.D. professor emeritus of chemistry, with his wife and alumna Zina Risley '96 who earned her B.S. in chemistry at Charlotte, have endowed the Zina Trexler Risley Women in Chemistry Scholarship.

Zina retired as a senior chemist from Henkel North America, working in analytical method development, quality control, and safety for the milling and classifying of raw materials for electronics component manufacturers. She experienced the academic rigors and financial challenges of being a firstgeneration college student so they endowed this scholarship to support a rising junior majoring in chemistry to complete the last two years of a B.S. in chemistry degree.

The scholarship will be awarded annually through the Department of Chemistry, with its first recipient receiving it for fall 2025 classes.



EXPLORING STICKY SCIENCE

ENTANGLED IN A PASSION FOR SPIDERS

Sarah Stellwagen, Ph.D. is unraveling the genetics of spider silks and mysteries of bioadhesives, studying spider species found locally and around the world with her specially engineered chamber.

Stick to the story and read more



THE SHAN YAN LAB

NEW DNA REPAIR RESEARCH MAY INFLUENCE CANCER CLINICAL TRIALS 'FOR YEARS TO COME'



The Yan lab is researching single strand DNA repair and making discoveries with a molecular switch that could lead to advancements in cancer survival rates.

Learn more about the Yan lab research into APE1

AI MEETS IMMUNOLOGY: REIMAGINING PERSONALIZED MEDICINE

Researchers Kirill Afonin, Ph.D. and M. Brittany Johnson, Ph.D. have developed AI-Cell to predict patient immune response to treatment at the nanoscale.



Watch the video

A B

FEATURF

DANILLO AUGUSTO PUBLISHES IN NATURE MEDICINE

Danillo Augusto, Ph.D. is identifying a unique marker in 10% of patients with multiple sclerosis that can be identified years before the onset of clinical symptoms enabling earlier interventions.

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Explore the advancements into early detection for MS

SHAOYU LI FEATURED AS DATA 'HEAVY LIFTER'

Li's lab has developed computational algorithms to decipher cell-specific transcriptional changes in the brains of patients with Alzheimer's Disease.

Read more about the statistical genetics and genomics research

16 COLLEGE OF SCIENCE FACULTY JOIN THE 'MILLION DOLLAR RESEARCH CIRCLE'



The **Division of Research** honors faculty in the Million Dollar Research Circle who have received federal and state grants, as well as grants and awards from business and industry to support research, programs and creative discoveries.

Read more about the Million Dollar Research Circle

TWO KLEIN COLLEGE OF SCIENCE PROFESSORS RECEIVE PRESTIGIOUS UNIVERSITY AWARDS

Adam Reitzel, Ph.D. professor of biological sciences and co-director of the Center for Computational Intelligence to Predict Health and Environmental Risks, CIPHER, was awarded the First Citizens Bank Scholars Medal, which recognizes research excellence. Adam is now also our Associate Dean for Research and Graduate Education.

Juan Vivero-Escoto, professor of chemistry, and director of the UNC Charlotte Center for Innovation, Translational Research and Applications of Nanostructured Systems, CITRANS, was awarded the Harshini V. de Silva Graduate Mentor Award, which recognizes mentorship of graduate-level students.



Read more about their awards



SUSAN K. MICHAEL WINS PRESTIGIOUS UNC CHARLOTTE AWARD

Michael has taught full time at Charlotte for 26 years, educating over 10,000 students in introductory lectures and labs. She regularly teaches sections of General Chemistry I, which is generally considered by students to be one of their most challenging courses, and they praise Michael's teaching style as informative, passionate and inspiring.

ADDITIONAL KCOS FACULTY RECOGNIZED:

John Taylor (Mathematics and Statistics), finalist Andrew Goff (Biological Sciences), honorable mention

Read more about the award

UNC CHARLOTTE FACULTY LEAD TEAM USA TO WIN TWO GRAND CHAMPIONSHIPS IN YOUTH INTERNATIONAL MATHEMATICS COMPETITION



The faculty coached Team USA, with 16 fifth to ninth graders from the U.S. and British Columbia, in the International Mathematics Competition and led the youth to win the two grand prizes, plus ten gold medals, four silver medals, and two bronze medals. The grand prizes were won by a single country for the first time in over a decade.

Read more about the competition

EIGHT KCOS FACULTY RECOGNIZED WITH 'TRAILBLAZER AWARD'

The Center for Teaching and Learning celebrated their 25 year anniversary on November 1 and recognized eight faculty members from the Klein College of Science with the "Trailblazer Award."

Honoring their pioneering spirit, the Trailblazer Award highlights the impact of their contributions, their partnership with the CTL, and inspire future generations of educators to continue reimagining teaching practices. Trailblazer Award winners from the Klein College of Science:

- Kathy Asala, chemistry
- Tonya Bates, biological sciences
- Farzana Ferdous, biological sciences
- Wan Rabiatul Hountondji Wan Othman, mathematics and statistics
- Lee Rinker, mathematics and statistics
- Jennifer Reed, mathematics and statistics
- Shankari Somayaji, biological sciences
- Sam Suptela, biological sciences

Read more about the trailblazers here!



ISHWAR D. AGGARWAL ELECTED AS NATIONAL ACADEMY OF INVENTORS FELLOW

Aggarwal research lab in the Department of Physics and Optical Science works in fiber optics, optical wave guides, fiber devices, and transparent and laser gain ceramics. He was elected to the National Academy of Inventors (NAI) 2024 Class of Fellows.

Aggarwal has been issued 104 U.S. patents with more applications in process. He previously lead the Optical Materials and Devices branch at the Naval Research Laboratory (NRL), where he pioneered the development, applications and commercialization of infrared transmitting optical materials, chem-bio sensors and high strength transparent materials, and moved patents from emerging technologies to the industrial sector in medical, defense, and aerospace applications. He joined UNC Charlotte in 2011 as a research professor.

Read more about Aggarwal's contributions



FIVE KCOS FACULTY NAMED SENIOR MEMBERS TO THE NATIONAL ACADEMY OF INVENTORS

- Kirill Afonin, Ph.D., professor of chemistry
- Glenn Boreman, Ph.D., professor and department chair of physics and optical science
- Jordan C. Poler, Ph.D., professor of chemistry
- Susan R. Trammell, Ph.D., professor of physics and optical science
- Michael G. Walter, Ph.D., professor of chemistry and director of nanoscale science Ph.D. program

Read more about their recognition













DANCING IN THE WILD

Bao-Hua Song, Ph.D., professor of biological sciences, is using a \$2.8M grant from the National Science Foundation to develop new soybean varieties resistant to Soybean cyst nematode, the world's most damaging soybean pest. The plant-parasitic roundworm targets the roots of soybean and other legume plants, ravaging crops with annual losses nationwide up to \$1.5 billion. Her work is advancing UNC Charlotte as a leader in plant science.

Learn more about Song's innovations in soybeans

JORDAN POLER AWARDED NC INNOVATION GRANT

Jordan C. Poler, Ph.D., professor of chemistry, was funded last year as one of eight grants statewide from NCInnovation, and has developed sustainable and low-cost materials to remove contaminants and forever chemicals such as per- and polyfluoroalkyl substances, PFAS, from water.

His innovations are making headlines nationwide, like with this **story** in Wired Magazine.

es nationwide, like with

Watch a WBTV interview from "On Your Side Tonight"





The Truman lab will explore Hsp70 chaperone code with their newest grant from <u>National</u> <u>Institute of General Medical Sciences</u>, a division of NIH which supports research that increases the understanding of biological processes and lays the foundation for advances in disease diagnosis, treatment and prevention. This brings their total lab funding to more than \$5.1M.

Explore more about the researchers in the Truman lab

KLEIN COLLEGE OF SCIENCE STUDENTS WIN AT BIOMEDICAL SCIENCES SYMPOSIUM POSTER SESSION

The **Biomedical Sciences Symposium** saw 350 attendees for a day-long event highlighting innovation and translational research, with many Klein College of Science faculty featured as speakers and presenters. Topics addressed included cancer research, regenerative medicine, artificial intelligence in biomedical sciences, diagnostic imaging, infectious diseases and global health, medical devices, and nanomaterials and structure-based drug design.

The student poster sessions resulted in three best poster awards for Klein College students.

THE BOTANICAL GARDENS

Niner University Elementary students enjoyed the opening of the Botanical Gardens' newest addition, Paula's Garden, which is dedicated to Paula M. Gross, who served as associate director for the UNC Charlotte Botanical Gardens for more than 20 years.

FACT: MORE THAN 80,000 VISITORS ANNUALLY



KLEIN COLLEGE OF SCIENCE BOTANICAL GARDENS

DOUBLE MAJOR DHAIRYA DESAI AWARDED NEWMAN CIVIC FELLOWSHIP

CAMPUS COMPACT

Desai is a <u>Levine Scholar</u> and double major working towards a Bachelor of Science in both biology and chemistry, with a concentration in biochemistry. The fellowship is awarded by <u>Campus Compact</u>, a national non-profit and the oldest association in higher education dedicated to civic and community engagement.





RUBY MANDERNA AWARDED MOISSI FELLOWSHIP

SOFTWARE FELLOWSHIP

Manderna, a Ph.D. student in the Chemistry and Nanoscale Science program, has been awarded a highly competitive Molecular Sciences Software Institute (MoISSI) Software Fellowship to promote the development of software infrastructure, middleware, and frameworks for broader impact in the field of computational molecular sciences, quantum chemistry, and materials science.

ELIZABETH SKELLY SECURES PRESTIGIOUS GSK INTERNSHIP

<u>Skelly</u>, a Ph.D. student in the Chemistry and Nanoscale Science program and recipient of the Leadership Development Award from the <u>American Chemical Society Younger Chemists Committee</u>, has received a 5-month internship at GSK through the prestigious GSK Early Career Program. Skelly will be assisting in drug target discovery and candidate evaluation using cutting-edge CRISPR Cas 9 genome editing techniques.



The Klein College of Science unites top-tier programs in biology, chemistry, mathematics and statistics, and physics and optical science to advance scientific research and create an inquisitive, scientifically literate society.

With a focus on inclusive teaching, research excellence and community outreach, the college fosters collaboration that pushes the boundaries of knowledge. Faculty and students are leading scientific innovation, shaping the future through groundbreaking discoveries and transformative education.



CULTIVATING DISCOVERY CREATING SOLUTIONS

Spotlight on Impact



The \$10 million gift from Gené and Fred Klein was a transformative investment in the future of the College of Science, supporting critical areas like scholarships, faculty recruitment and groundbreaking research. A strong college of science is essential to a top-tier research university, as it forms the foundation for innovation across disciplines and engages all students in essential critical thinking skills. The Kleins' generosity ensures that UNC Charlotte continues its trajectory toward national recognition, bolstering the University's research capabilities and enriching the educational experience for thousands of students.

Scan here to get involved. giving.charlotte.edu CHARLOTTE KLEIN COLLEGE

KLEIN COLLEGE OF SCIENCE FACTS



\$43M+ IN ACTIVE GRANT FUNDING **130** FULL TIME FACULTY





\$1M+ 16 FACULTY WITH LARGE EXTERNAL FUNDING 2300+ STUDENTS

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