

Chrissy Roselli and Javier Grajeda, former PhD students in UNC's Department of Chemistry, use inert atmosphere glove boxes to keep the chemical environment sterile for experimentation. After graduating in May 2018, both took jobs as advanced research chemists at Eastman.

Powering breakthroughs

Partnerships drive discovery at UNC Chapel Hill.

Leveraging the power of industry sponsorships, University of North Carolina at Chapel Hill creates solutions for emerging challenges. The school attracts over \$1 billion in sponsored research funding each year and ranks fifth in the nation for federal research.

Partnerships comprise a growing part of the university's diverse research portfolio. Industry leaders, both globally and locally, are drawn to its strengths in biomedical, health and population sciences, and to its nationally recognized programs in nanotechnology, computer science and big data. The UNC's concentration on practical outcomes and commercially viable solutions is powering breakthroughs in multiple fields.

UNC boasts a research culture that is both highly collaborative and interdisciplinary. To capitalize on these strengths, the university is coalescing resources, facilities and brainpower

around six areas of strategic priority. By supporting faculty initiatives which advance these priorities, the school is making early-stage investments at the forefront of innovation.

> Life-Changing Advancements in Targeted Therapeutics

Seeking a prominent university leader in health sciences, Deerfield Management, a private investment firm committed to advancing healthcare, partnered in late 2018 with UNC to create Pinnacle Hill, a \$65 million private venture committed to the discovery of new medical technologies that address urgent unmet needs. Through Pinnacle Hill, Deerfield will invest in promising therapeutic research at UNC and apply its significant expertise in drug development to select projects with high potential for commercial application.

Pinnacle Hill will support projects identified by a joint steering committee composed of members from Deerfield as well as

leaders from UNC's Office of the Vice Chancellor for Research, School of Medicine and Eshelman School of Pharmacy.

> Bonding Business and Science

What began as a collaborative research partnership around chemistry and materials science in 2013 between UNC and Eastman Chemical Company, a materials and specialty additives company based out of Tennessee, has today extended across the entire university community. The company has sponsored research projects in the Gillings School of Global Public Health's Department of Environmental Sciences and Engineering, in three departments within UNC's College of Arts and Sciences and the Kenan-Flagler Business School. Eastman has also joined forces with UNC's BeAM makerspace program, supplying materials that feed over forty 3D printers across campus at makerspace locations. The company has heavily recruited campus graduates over the past five years. Recognizing the valuable and mutually-beneficial relationship it enjoys with the college, Eastman recently extended its agreement with the university another six years, committing \$5 million over the life of the partnership.

> Yielding Greater Results

UNC Chemistry Professor J. Michael Ramsey recently partnered with global biopharma companies Celgene and MilliporeSigma to develop a new bioreactor monitoring technology to accelerate the manufacture of biologic medicines. North Carolina is home to an extensive biologics manufacturing cluster, and Ramsey's work grew out of UNC's participation in the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) – a national consortium co-led by North Carolina State University. A key industry partner on Ramsey's \$1.3 million award is 908

Devices, Inc., a company he founded to commercialize his highly sensitive microfabricated chemical measurement technologies.

Working with industry partners and NCSU's Biomanufacturing Training and Education Center, Ramsey and 908 Devices are producing a device that will monitor nutrients and cell metabolites in bioreactors, improving the quality and yield of biologics manufacturing lines and ultimately reducing the cost of these life-saving therapeutics. His project received matching funds from the North Carolina General Assembly for scientists awarded grants through NIIMBL.

STRATEGIC RESEARCH PRIORITIES

By fostering and supporting collaborative, interdisciplinary teams, UNC is accelerating new discoveries and solutions to emerging challenges in these areas:



BRAIN

Discovering the biology and diseases of the nervous system and drivers of human behavior.



CANCER

Improving lives through cancer research and advancing cancer prevention, detection, treatment, and health practice.



DATA SCIENCE

Developing and applying big data tools to solve scientific and societal problems.



ENVIRONMENT

The study of natural systems, global environmental change, resilience, and health.



OPPORTUNITY, WELL-BEING, & CULTURE

Exploring how opportunities shape success and well-being over a lifetime and across societies; and humanities as a lens for understanding our world.



PRECISION HEALTH & SOCIETY

Tailoring health care practice, delivery, and therapeutics to individual circumstances, using factors from genetics to social and environmental influences.



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