MAKE
POSSIBLE

THE CAMPAIGN FOR
CARNEGIE MELLON UNIVERSITY

AUTOMATED SCIENCE *at* CMU

CREATING AN ENVIRONMENT WHERE SCIENCE IS ACCESSIBLE, RELIABLE AND LIMITED ONLY BY IDEAS

Can we cure cancer before it starts? Double the efficiency of solar panels? Discover new drugs 10 times faster? The answers to extremely complex questions like these can be found in automated science, the interface where computation, robotics, machine learning, data analytics and advanced scientific research meet — a meeting with the potential to accelerate discovery at a phenomenal pace.

Key to automated science is a cloud lab facility, a large automated, remote-controlled science lab that will both radically change how science is done and who is part of that process. The Carnegie Mellon University Cloud Lab, a first-of-a-kind, shared academic cloud lab, will make scientific experimentation more transparent, less prone to error and more reproducible. It will also democratize the discovery process, creating a community of researchers whose diverse experiences and backgrounds spur innovation.

Your support of automated science at CMU will give scientists and researchers the tools, resources and time to ask the right questions and design breakthrough experiments that lead to incredible advancements.

WHAT IS A CLOUD LAB?

Simply put, a cloud lab is a shared, central facility where experiments are largely conducted by robots. Scientists design experiments from a classroom or office, technicians set up the experiments and the cloud lab executes them efficiently and quickly. The data generated is sent to cloud-based servers where scientists can access it anywhere at any time.

As part of the Future of Science Initiative, Carnegie Mellon will become the first university to host its own cloud lab. A facility like this can accelerate research exponentially.

Construction of the Carnegie Mellon University Cloud Lab at 6555 Penn Avenue kicks off in fall 2021 and research will begin in 2022. With the additional resources your support provides, CMU will be the place where scientific discovery takes a giant leap forward.

Photos courtesy of Emerald Cloub Lab

YOUR SUPPORT CAN TRANSFORM

SCIENTIFIC RESEARCH *at* CMU

RESEARCH WITH GREATER IMPACT

The Carnegie Mellon University Cloud Lab will provide CMU and its partners with the advanced infrastructure to ask revolutionary questions and leverage the resulting data beyond the individual experiment, increasing the real-world impact of our initial investment exponentially.

COLLABORATION AND COOPERATION

Offering access to state-of-the-art resources to the CMU and wider scientific community while putting all research data on a single platform will allow researchers and scientists to collaborate in new and deeper ways that will spur important breakthroughs.

SCIENTIFIC EDUCATION FOR THE FUTURE

Interdisciplinary programs that train students in the diverse aspects of research automation — physical sciences, robotics and large-scale data analysis — will provide undergraduate and graduate students with a competitive advantage in their fields. Students will also have the opportunity to pursue self-initiated projects beginning at the undergraduate level.

FACULTY DEVELOPMENT

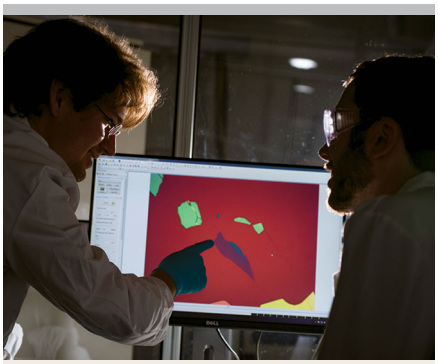
Through this all-access, open-source academic cloud lab, CMU can provide new opportunities for researchers who have traditionally been unable to access advanced research instrumentation and resources, enabling researchers at all career stages and from a variety of disciplines to accelerate their research for the betterment of all.

MORE ACCESSIBLE EQUIPMENT

A variety of advanced research instrumentation will be available to a broader community of researchers, meaning scientists inside and outside CMU will be less constrained by large budgetary requirements for individual instrument purchases and instruments can be regularly maintained and upgraded to state-of-the-art levels.

CENTRALIZED FACILITIES

Open to all CMU-affiliated researchers, CMU Cloud Lab will allow university scientists to make the most productive, efficient use of equipment and instrumentation and increase the range of experiments being conducted at the same time.



AUTOMATED LABS NEED A NEW KIND OF SCIENTIST

Trained researchers must be able to design, maintain and program automated instruments. They need firm grounding in the sciences to devise and interpret automated experiments. They will require advanced training to collect and analyze vast amounts of data.

With our strengths in technology and foundational sciences, there is no better place for training the scientists of the future than Carnegie Mellon.

Carnegie Mellon University

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