Minerva Graduating Students Win Education Category in 2021 Microsoft Imagine Cup

Hands-On Labs aims to increase accessibility to scientific laboratory learning worldwide

San Francisco, Calif. — June 2, 2021 — Minerva graduates Ahmed Kamel and Bukle Unaldi won the Education category at the 2021 Microsoft Imagine Cup, the world's premier student technology competition. Kamel, an Egyptian student from the Class of 2021, created Hands-On Labs, a laboratory that allows users real-time virtual access to scientific research equipment via remote control tools and user-developed code. Tens of thousands of students registered to compete from more than 160 countries. The Minerva graduates competed against hundreds of teams designing technology solutions to positively impact the education sector. As students across the world lack access to lab equipment and resources due to financial or geographical limitations, Hands-On Labs closes the gap by increasing equity of access to practical lab infrastructure from anywhere in the world.

“Imagine Cup is more than just a competition — Microsoft’s goal is to give students the transferrable skills needed to solve real problems they see, explore their curiosity, and make an impact on the world around them,” said Pablo Veramendi, Director, Microsoft Imagine Cup. “We want to help student innovators, like Team Hands-On Labs, find their passion and purpose and use it to tackle global issues with technology.”

Kamel, a Business Brand Management and Computational Sciences double major, was inspired to invent Hands-On Labs in response to the global shutdown due to the COVID-19 pandemic. In March 2020, while Kamel was in Buenos Aires as part of Minerva’s global rotation, Argentina went into a strict lockdown. Unable to continue in-person robotics work, Kamel recognized the need for students to gain lab experience safely in order to adequately prepare for post-graduate careers. While simulations can supplement learning, many STEM thought leaders believe simulations are not an adequate replacement for the experience of real lab experiments. Mentored by Minerva Associate Professor of Computational Science Rohan Shekhar, Kamel researched how robotics labs could be integrated into current online education models, then developed Hands-On Labs’ platform application and created its remotely operated laboratory for his senior Capstone project. Together with Unaldi, a Minerva student and author from Turkey, the pair submitted Kamel’s prototype, which also won first place in the Hack the Crisis Hackathon sponsored by Iceland’s Ministry of Education in May 2020. Kamel continues to develop the Hands-On Labs product while Unaldi works on the marketing and business development for the project.

“My experience with highly-engaging courses and interactive learning at Minerva has helped me realize that laboratories need to be more accessible to students regardless of whether the world is in a pandemic,” shares Kamel. “I believe Hands-On Labs will be able to bring valuable instruction to any student who is looking to broaden their research experience, such as those

who are not able to travel or who live in underprivileged communities. If students cannot go to labs, we will bring the labs to them."

As a member of the National Academy of Science and appointed to the National Science Board 2014-2020 by President Obama, Minerva's Provost Vicki Chandler recognized the impact this project could have for students around the world. "Kamel and Unaldi's strategic vision and drive are truly remarkable," adds Chandler. "They have embodied what a Minerva education sets out to do — enable critical thinking, develop initiative, and address complex challenges through the creation of innovative solutions. We are immensely proud of their initiative and Hands-On Labs' promising future."

Hands-On Labs has been successfully implemented by Minerva Schools, which used the remote lab in conjunction with the Computer Science course Theory and Applications of Artificial Intelligence. Hands-On Labs is beta testing the product outside of Minerva, working with select K-12 and higher education partners. With increased visibility from the Microsoft Build competition, they are excited to be receiving requests for additional laboratory sessions for students at schools and science camps. Looking forward, Hands-On Labs is focused on securing funding to scale the robotics lab to include additional instruments such as microscopes and weather stations, and expand the lab offerings to support remote research across the natural science and computational fields.

About Hands-On Labs

Hands-On Labs is a set of physical labs with remote online access to provide active learning experiences to students from all over the world. Many students do not have access to experiential learning and practical training during their studies and Hands-On Labs brings this necessary experience to students' fingertips by giving them access to real hardware that they can control and experiment with through partnered organizations. Hands-On Labs increases accessibility to an essential active learning tool and reduces the cost and burden on students.

About The Minerva Institute

The Minerva Institute for Research and Scholarship is a private, non-profit, tax-exempt entity that operates Minerva Schools at KGI. Minerva Institute will become the home of Minerva University when WSCUC grants it accreditation separate from KGI. Minerva Institute is governed by a Board of Trustees, chaired by former Senator Bob Kerrey. The board is composed of a group of diverse, accomplished, and highly recognized leaders in their fields. It is responsible for ensuring that Minerva University thrives and fulfills its mission of "Nurturing Critical Wisdom for the Sake of the World."

About Minerva Schools at KGI

The Minerva Schools at KGI offer a reinvented university experience for the brightest, most motivated students from around the world. Combining an interdisciplinary curriculum and rigorous academic standards, an accomplished faculty versed in the science of learning, and an advanced interactive learning platform leveraging cutting-edge technology, Minerva delivers an exceptional liberal arts education for future leaders and innovators in every discipline. The Minerva Schools at KGI were established in 2013 by Keck Graduate Institute, a WSCUC-accredited institution, in alliance with Minerva Project.

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Press Contact:
Junko Green
Minerva Institute & Minerva Schools at KGI
pr@minerva.kgi.edu