

RMIT University **CASE STUDY**

Virtual Labs During (and After) COVID

RMIT is a public research university based in Melbourne, Australia.



Dr. Donald Wlodkowic is an Associate Professor of Cell Biology and Toxicology in the School of Science at RMIT University. He heads the Neurotox Laboratory, an interdisciplinary facility focused on ecotoxicity and neurotoxicity testing, R&D, and drug discovery.

Overview

When Donald Wlodkowic needed an alternative to on-campus laboratory classes during the Covid-19 pandemic, he researched Labster. After spending two months playing Labster's virtual labs himself, he agreed to a trial period when his excited students could test-drive the simulations. With positive results, Wlodkowic entered into a large-scale roll-out of Labster in his courses and across the University.

Challenge: Make cell biology and biochemistry courses pandemic-proof

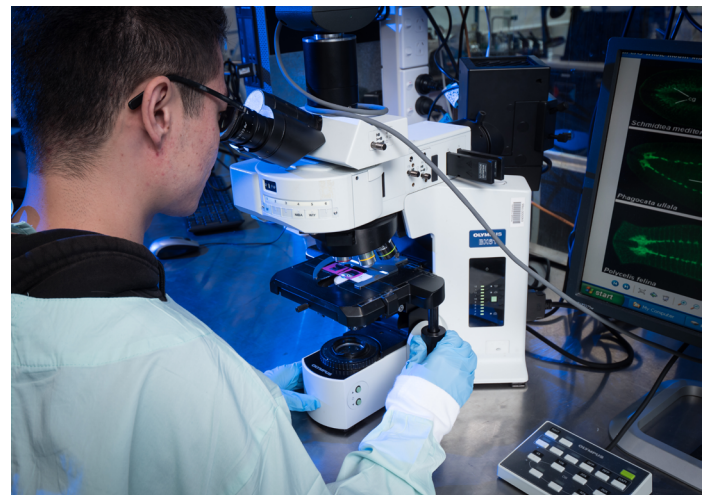
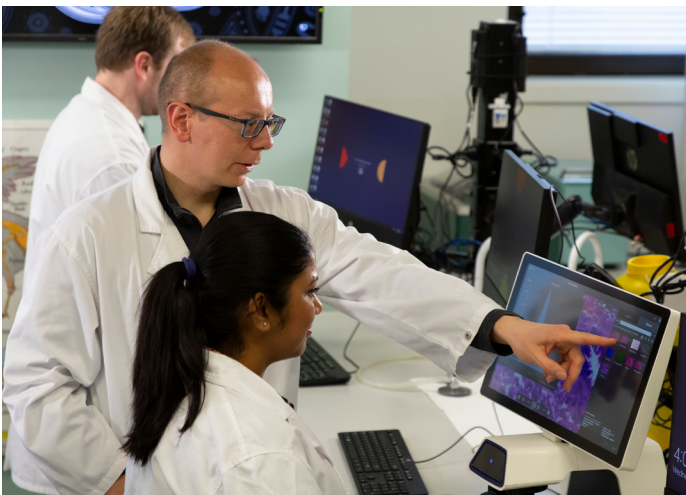
Number of students: 600 per semester

Simulations used: Cell Structure, Cell Membrane and Transport, Lab Safety, Mitosis

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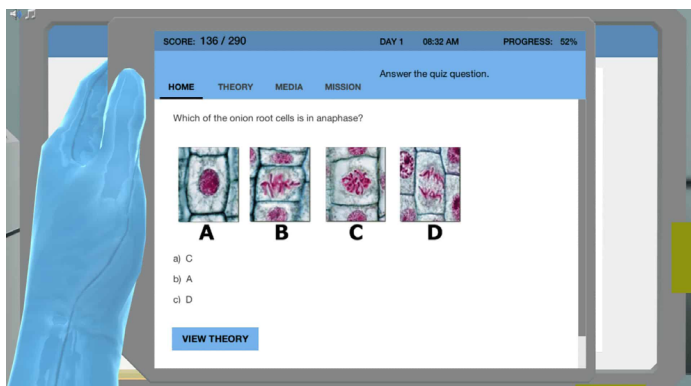
When the pandemic is over I will definitely still be using Labster as a pre-study or on campus post-practical training exercise”

—Donald Wlodkowic, RMIT



Learning while on lockdown

Labster enabled Wlodkowic's students to continue their learning while on lockdown and proved valuable as a supplemental tool for on-campus teaching. "In on-campus practicals, we have limited resources, limited ability to teach modern techniques because the cost would be too prohibitive," said Wlodkowic. "With Labster, I can teach even first and second-year students techniques such as flow cytometry, ELISA, and immunoblotting. Labster also has theory components that mesh together nicely with my lectures on cell biology or biochemistry."



Active engagement, not passive watching

Wlodkowic expects his students to be active participants in their own learning. "Students do not just watch a video, they interactively perform the Labster experiments themselves. They interact with reagents, with pieces of laboratory equipment. They can also test themselves with built-in quizzes," he said. "They can make mistakes, they learn from those mistakes, and they receive constant guidance from the virtual assistant."

Re-run the simulation until you master it

Wlodkowic said his students gain mastery with Labster. "If someone is struggling with something on campus, yes, of course, I'm there to help the student, but they have a window of just two or three hours to perform the practical experiment. With Labster, if you don't understand how to do that experiment with flow cytometry, you just re-run the simulation until you master it," he said. "And that is the beauty of virtual lab teaching."

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Keep an open mind, test Labster for yourself. Be adventurous in deploying next-generation technologies that can help not only you but also your students in expanding their knowledge, consolidating their knowledge, and learning something that is usually unavailable on campus for large cohorts of first or second-year students.”

—Donald Wlodkowic, RMIT

