The Australian Microscopy and Microanalysis Research Facility (AMMRF) is a national grid of equipment, instrumentation and expertise in microscopy and microanalysis that provides nanostructural characterisation capability and services, from widely used optical, electron, X-ray and ion-beam techniques to world-leading flagship platforms. One of the principal activities of the AMMRF is to provide research training in microscopy and microanalysis. Until recently, much of this training was provided either in the classroom or through one-to-one training at the instrument itself, however, these approaches faced limitations.

Firstly, the large number of researchers requiring training places pressures on the core facilities to balance the need to maximise the beam-time of expensive and complex instrumentation for research purposes with that for training new users, who will ultimately perform the research. Prioritising instrument time for research reduces time available for training and vice versa.

Another common challenge in such facilities is diversity of the student body. In the case of our project the cohort requiring training had a variety of backgrounds and goals: undergraduate students with different educational backgrounds seeking an overview of topic; final year students requiring specific techniques for project work; future career or postgraduate students; and also professional researchers, educators and managers. A more flexible approach to training and education was needed.

To address these challenges and improve the training outcomes of researchers, the AMMRF developed MyScope: Training for Advanced Research. MyScope is an online suite of education tools for teaching and learning in the area of microscopy and microanalysis. The modules in MyScope provide a novel advancement in online training. They contain a number of components including: an interactive questionnaire to allow the user to assess their knowledge, guide choices and tailor the learning environment for flexible learning; also, tailoring capability for academics and trainers; self guided tutorials with videos, animations and glossary to prepare students with knowledge and specialist language; virtual instrument platforms to practice use of instrumentation; and online competency testing to demonstrate readiness for hands-on experience.

Acknowledgement: The authors acknowledge funding from the Office for Learning and Teaching, Australian Government Department of Education, CG10-1490.