

World view



By De-Ming Chau

Make research-integrity education fun and relevant

Young scientists in Malaysia have built a network to teach responsible research.

For seven years, young researchers in Malaysia have been organizing workshops on responsible research conduct. We have reached more than 1,000 people at home and elsewhere, including Thailand, Switzerland and the United States.

We were inspired by an August 2013 workshop in Kuala Lumpur, organized by the US National Academy of Sciences and the Academy of Sciences Malaysia. Many of us wished that such training was more widespread in our country. To work out how we could provide it, I teamed up with Abhimanyu Veerakumarasivam, a geneticist at Sunway University in Subang Jaya, and Chai Lay-Ching, a microbiologist at the University of Malaya in Kuala Lumpur, with help from the US academy. Although some researchers in Malaysia were already familiar with human- and animal-research ethics, few had heard the phrase ‘responsible conduct of research’ (RCR) or received instruction in research integrity.

When I was a graduate student and postdoc in the United States, RCR training tended to be shallow discussions with few practical applications. A mandatory course merely called for me to read some material and answer a few questions. But for best practices to take root, researchers need more than rote knowledge. They need to believe these practices are important, and to be able to make ethical decisions that apply to their particular situation.

Our group decided to try something different. All of us were members of the Young Scientists Network – Academy of Sciences Malaysia, which had been set up as a platform for young scientists to give voice to their opinions and contribute to society. Our peers had shown enthusiasm in the past, so we knew they would be good early participants.

We keep our workshops energetic, engaging and immersive. We prompt discussions about collaboration and data ownership by getting each participant to draw an image and pass it to another participant, who adds to it. We make a popular local drink, pulled milk tea, to show how everyone has a role in spreading awareness of responsible practices.

Our workshops emphasize the benefits of responsible research for the scientific community. We talk a lot about values and social responsibilities. We highlight how practices such as data management, collaboration and avoiding misconduct are intertwined.

Attendees create and act out scenes depicting irresponsible authorship. Building on activities we learnt from the 2013 workshop, we set up role-playing exercises to explore a scenario on influenza research, which helps participants to consider safety and security issues and public dissemination of results. Some act as principal investigators, others

Participants experience something worthwhile and become champions of responsible conduct.”

act as members of the media and government. We work through ethical questions: should you publish, or not? What is the role of journals? Of government regulators?

Another case study presents a graduate student who has been advised to conduct only short-term experiments and to package them into as many papers as possible – without considering whether that is the most informative way to, for instance, convey the ecological impact of local industries or evolution of native wildlife. All the case studies and activities are contextualized for Malaysia’s history, culture and research environment. Characters reflect standard roles in Malaysian institutions, such as senior lecturer and research officer, and we use common Malaysian names. The situations, such as data sharing and tension between junior and senior researchers over authorship, also reflect common situations that Malaysian researchers might face.

Participants say they find us relatable as instructors because we, like them, are setting up laboratories and starting research programmes. This helps encourage them to talk about their own challenges in managing labs and juggling teaching and administrative responsibilities.

Most participants hear about the workshops from colleagues or receive an invitation from a previous attendee. I find this encouraging: it suggests that participants experience something worthwhile and become champions of responsible conduct in their own spheres of influence.

To make our materials more widely available, we published the *Malaysian Educational Module on RCR* in 2018 in collaboration with the Malaysian Ministry of Higher Education. The module covers the typical topics in RCR courses, such as conflicts of interest and mentor–trainee relationships. Veerakumarasivam, Chai and I spent a year assembling the module, with contributions from more than 50 young academics across Malaysia. We tested it with members of the Young Scientists Network and collected their feedback. Many contributors also became RCR instructors. Right now, we are adapting this module to online learning, because large social gatherings are limited.

Our efforts have received international support and recognition, which has improved our credibility in Malaysia and southeast Asia. In 2019, we launched a project to train RCR instructors across the region, through the Association of Southeast Asian Nations Young Scientists Network and the regional office of the International Science Council.

But our bottom-up initiative can go only so far – the majority of researchers in Malaysia and southeast Asia have still never heard of RCR. Top-down support is needed to promote research integrity. We want to see RCR education institutionalized across southeast Asia and integrated into the conversation about research impact. Ultimately, we hope to foster a culture in which integrity forms the bedrock of research.

De-Ming Chau is a molecular biologist at Universiti Putra Malaysia in Selangor. e-mail: deming@upm.edu.my