

Researcher capacity building: supporting emerging research leaders to thrive in their careers in Brazil

Workshop report

29 March 2023 Rio de Janeiro, Brazil









The Brazilian Academy of Sciences (ABC), founded in 1916, is a non-profit, non-governmental, independent entity, which operates as an honorific scientific society and as a consultant for the government, when requested to do so, to perform technical studies and studies on scientific policies. Its focus is the scientific development of the country, the interaction among Brazilian scientists and the interaction of these with researchers from other nations.



The history of the National Academy of Medicine (ANM) merges with the history of Brazil and is an integral and active part of the evolution of the practice of medicine in the country. Founded under the reign of Emperor D. Pedro I on 30 June 1829, the Academy also promotes national and international congresses and refresher courses and annually distributes prizes to physicians and researchers not belonging to its staff.



The Academy of Medical Sciences is the independent, expert voice of biomedical and health research in the UK. Our mission is to help create an open and progressive research sector to improve the health of people everywhere. The Academy's elected Fellows are the UK's leading medical scientists from the NHS, academia, industry, and the public service. We work with them to improve lives, strengthen research, support researchers, work globally, and build our resources.

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Executive summary

On 29 March 2023, the UK Academy of Medical Sciences, the Brazilian Academy of Sciences (ABC) and the National Academy of Medicine (ANM) jointly organised a researcher capacity-building workshop in Rio de Janeiro, Brazil. The workshop enabled participants to share and discuss best practice for emerging researchers developing their careers in Brazil.

The workshop focused on three main areas of discussion: presentations and reflections on career development schemes run by the three Academies; differences between mentoring, coaching, and role models; and the challenges and opportunities faced by emerging researchers in Brazil.

The meeting started with presentations of schemes run by the Brazilian academies to aid the development of emerging researchers in Brazil, including the ANM's Young Physician Leaders programme and the ABC's Affiliate Members scheme, as well as a summary of the career development programmes offered by the UK Academy of Medical Sciences.

In breakout groups, participants discussed the differences between mentoring, coaching and role models. In Brazil, mentoring and the role of mentors are not widely appreciated and there is currently a lack of structured mentoring programmes.

Discussions also focused on the challenges and opportunities faced by emerging researchers in Brazil. Some of these challenges were similar to those identified at equivalent capacity building workshops run by the UK Academy of Medical Sciences with partner academies in South Africa (22 November 2022) and Kenya (7 February 2023). These included access to funding, grant expenditure restrictions, and lack of institutional support. Junior academics are expected to perform an important number of functions, which can create extremely heavy workloads. To address these issues, participants recommended that more opportunities should be provided to empower emerging researchers and support their independence. These opportunities include support with widening their professional networks, regional exchange schemes to address geographic disparities, and better institutional support for postgraduate programmes.

An international outlook was widely seen to be an important aspect of the scientific career pathway. Stronger relationships between the UK and Brazil also offer additional opportunities for exchange of knowledge, networking, and development of scientific collaborations.

Introduction

The scientific career pathway is generally well defined but can be difficult to navigate in practice. As well as developing the technical skills required within their specific fields of study, researchers need to understand pathways of career progression within and outside academia and develop a wide range of skills to enable them to plan and conduct research, secure funding, publish papers, manage a team, teach and perform other activities such as outreach.

The UK Academy of Medical Sciences has been holding a series of joint researcher capacity-building workshops with international partners. The first two meetings were held in South Africa in November 2022, jointly with the Academy of Science of South Africa (a meeting report has been published), and in Kenya in February 2023, in partnership with the African Academy of Sciences (a meeting report has been published). The third meeting in the series was held in Rio de Janeiro, Brazil on 29 March 2023, in collaboration with the Brazilian Academy of Sciences (ABC) and the National Academy of Medicine (ANM).

The workshop included participants from both the UK and Brazil, with experience of researcher capacity-building initiatives. It provided an opportunity to share and discuss good practices for researchers developing their careers in Brazil.

This workshop was held immediately after a "One Health" policy meeting jointly organised by the three academies. The main objectives of the policy workshop were to convene researchers, policymakers, and wider stakeholders to identify key research opportunities and barriers to enable the successful implementation of a One Health approach in the region.

Many participants from this meeting joined the capacity-building workshop, alongside career development experts from the <u>Young Physician Leaders programme</u> of the Brazilian ANM, and <u>Aristides Pacheco</u> <u>Leao Scientific Initiation</u> and the <u>Affiliate Members programme</u> of ABC. They were also joined by the UK Academy's **Newton** and **Global Challenges Research Fund Networking Grants** awardees and alumni.



Dr Tatiana El-Bacha, Dr Luis DaSilva, Ms Camila Quartim de Moraes Bruna, Prof Patricia Rocco, Prof Simone El Khoury Miraglia, and Ms Patricia Severino

Setting the context: supporting career development for researchers in Brazil

The workshop opened with the reflections of two emerging medical researchers from the Young Physician Leaders programme of the ANM on the challenges they have faced and support they have found beneficial.

Dr Antônio Braga is an obstetrics and gynaecology specialist who obtained his PhD in 2009 and took up a lectureship at the Federal University of São Paulo in 2022. In between, he spent time as a postdoctoral researcher at Harvard Medical School (Brigham and Women's Hospital) and Imperial College London (Charing Cross Hospital), gaining experience of UK and US health systems.

In 2014/15, Dr Braga was selected for the ANM Young Physician Leaders programme. He suggested that critical factors for a successful research career included having the environment in which to dream, supportive mentoring, and having a personal commitment to pursue career goals. He also recommended developing a clear research focus and area of expertise, developing partnerships with people and institutions, and having an international outlook. A commitment to excellence is essential within a research career.

Prof Andréia Melo is a medical oncologist who completed her PhD in 2015 and is currently Head of the Division of Clinical Research and Technological Development at Brazil's National Cancer Institute (INCA). She is also a professor in the postgraduate programme at INCA. Part of the Ministry of Health, INCA's role spans treatment, medical education and research, and its researchers have published nationally and internationally influential research findings in areas such as gynaecological cancers.

Prof Melo identified a range of key challenges that emerging medical researchers face in Brazil. These included difficulties obtaining funding for research, shortcomings in research infrastructure, limited training opportunities, multiple demands on researchers' time, and the lure of opportunities overseas, leading to a brain drain. She also highlighted how important mentors had been to her throughout her research career.

A One Health perspective

Prof Alison Holmes OBE FMedSci, University of Liverpool and Imperial College London, who also co-chaired the One Health policy workshop, reflected on the specific challenges facing researchers looking to develop a career in One Health research. This area has unique features, including a high degree of interdisciplinarity and need for cross-sectoral collaborations, that pose additional challenges in research career development. She suggested that role models can be particularly important in this area, demonstrating how career pathways can be successfully navigated.

Prof Holmes noted that "push" and "pull" mechanisms were needed to incentivise and facilitate careers in One Health research. She suggested that lessons could be learned from the experience of the UK, where public and patient involvement (PPI) in research has been mainstreamed, in part because national funding agencies require it to be part of funding applications. In addition, the Athena Swan Charter, which provides accreditation for institutions in the area of gender equity, has helped to focus attention on issues relating to gender and other dimensions of equity and inclusivity



Academy award holders who attended the workshop, participants, and staff

Young Physician Leaders programme of the Brazilian National Academy of Medicine

As discussed by **Prof Patricia Rocco**, Federal University of Rio de Janeiro, one of the most important tutorial systems for medical researchers in Brazil is the **Young Physician Leaders programme**. Launched in 2014 with help from the Inter-Academy Partnership, its mission is to train emerging leaders, under the age of 40, working in public and private health systems as clinicians, educators, and researchers.

It aims to promote networking with elected members of the Brazilian ANM, focusing on different areas – academia, innovation, and healthcare policies.

The programme currently has 53 members, including 18 women, most of whom are from institutions in the south-east of Brazil. The application review process examines a candidate's CV, top three publications, letters of recommendation, education and professional background, and proposed activities. Such activities can include seminars, public outreach, and networking in areas relevant to health in Brazil.

Successful applicants are paired with a mentor/tutor from the Brazilian ANM, with whom they prepare academic papers, develop courses, and produce podcasts, which help clarify important and current health issues. Programme members also present at ANM meetings and collectively organise an annual symposium.

Prof Rocco noted that several alumni of the programme have gone on to achieve significant success, for example obtaining academic positions in Brazil or abroad, becoming presidents of professional societies, and acting as advisors to state and national bodies. Key challenges include limited funding, a lack of women members and limited regional and ethnic diversity among the membership.

Laboratory internships and affiliate members programmes of the Brazilian Academy of Science

Prof Patricia Bozza, Brazilian Academy of Science (ABC), discussed two schemes open to students and researchers in Brazil, **Aristides Pacheco Leao Scientific Initiation** and the **ABC Affiliate Members programme**.

The former provides opportunities for university students to undertake a summer internship in the laboratory of a member of the ABC. The scheme ran during 1994–2004, 2015–19 and 2022–23, with 14 rounds in total. More than 3000 students applied in the last three rounds and 70 ABC members made their laboratories available for interns. Only six states did not have students enrolled in the last round.

The Affiliate Members scheme was started in 2007 to include promising young researchers from the six regions defined by the ABC (North, Northeast and Espírito Santo, Rio de Janeiro, Minas Gerais and Midwest, São Paulo, and South), nominated and elected by full members working in these regions. Each year, five affiliated members are elected per region for 5 years, non-renewable terms.

A total of 454 affiliate members have been elected to date, with 150 currently part of the scheme. Only four states in Brazil have not had any affiliate members elected, demonstrating that the scheme is reaching into areas traditionally under-represented in science in Brazil.

Affiliate members hold annual meetings, and two representatives sit on the ABC advisory board. Within each region, two representatives hold meetings with regional ABC Vice-Presidents. The ABC organises mentorship talks – virtual workshops on topics related to career development – and affiliate members also participate in thematic ABC working groups. To date, 11 affiliate members have gone on to become full members of the ABC as a measure of success of the programme.



Mr Ian Jones, Prof Augusto Afonso Guerra Junior, Dr Floriano Silva-Jr, Dr Cristiane Silvestre de Paula, Dr Luis DaSilva, Dr Davis Sansolo, and Prof Marcia Chame

Academy of Medical Sciences career development programmes

Dr Rachel Macdonald, Head of Programmes at the Academy of Medical Sciences, discussed the Academy's programme of career development support for early- to mid-career researchers, including mentoring, events, and training programmes.

The Academy's <u>mentoring programme</u> is based on the "developmental mentoring" model, which places mentees in the driving seat and aims to empower mentees to act for themselves. Mentees are encouraged to identify what support they need from a mentor, while mentors play the role of sounding board, provide a safe space for honest and open conversations, and encourage mentees to come up with their own solutions to challenges.

Mentees, who include a range of UK-based researchers from postdoctoral to mid-career level, are encouraged to select mentors outside their own fields and institutions so that they can obtain independent views and a fresh perspective. The value of a mentor lies in their experience rather than their position in a hierarchy, and ideally both mentee and mentor gain from the relationship.

Training programmes include the **SUSTAIN – women in research** scheme, a one year programme through which cohorts of female researchers in their first independent post receive leadership training and support for skills development, including media training, mentoring and peer–peer coaching.

The <u>Future Leaders in Innovation, Enterprise and Research (FLIER)</u> initiative, a two year leadership programme open to all UK-based mid-career researchers, aims to strengthen connections between academia, healthcare, industry and policymaking organisations.

The <u>Cross-Sector Programme</u>, launched in 2022, aims to address the lack of connectivity between academia, industry and the NHS, and the limited movement of researchers between these sectors. Regional networks or "hubs" are being established, the first being in Wales with Life Sciences Hub Wales as partners. As part of this programme, the Academy has launched a new funding scheme, the <u>Cross-Sector Experience</u>

Awards in November 2023 to incentivise and facilitate working in different sectors.

In 2020, the Academy launched its <u>Promoting Innovation</u>, <u>Learning</u>, <u>Leadership and Resilience in</u> <u>the Research Community (PILLAR)</u> initiative, a global programme providing virtual training, support and networking opportunities for previous Academy grant holders and programme participants. This group also benefits from the <u>Hub of Innovation Vision & Engagement (HIVE)</u> alumni programme, which provides long-term support and career development opportunities through a dedicated portal and programme.

Discussion points on career development presentations

Following the speakers' career development presentations, participants were able to ask questions. During this session, the discussions focused on:



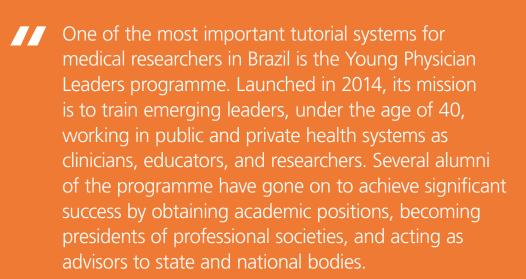
Appropriate age range for career-support activities

The presentation of the ABC internship scheme emphasised that encouragement to consider a career in research can begin at a young age. The need for arbitrary age limits on schemes was also questioned: for some disadvantaged groups, it can take longer than normal to acquire the required education and qualifications, while women in particular may take career breaks to focus on caring activities.



Lack of diversity

The lack of diversity at the workshop was also raised, with participants arguing that more needed to be done to encourage members of disadvantaged populations to pursue a career in medicine and research and to support their career development.





Prof Patricia Rocco, National Academy of Medicine, Brazil

Breakout group discussions on mentoring

In breakout groups and networking sessions, participants were invited to reflect on mentoring, coaching and role models, and differences between them. Participants discussed the benefits on career development that could be offered by coaching, mentoring programmes, and the importance of role models. These are reflections that were also shared by participants at the South Africa and Kenya workshops.

Discussions also focused on barriers and challenges to a successful career in research and how they might be overcome.



Coaching

A coach was felt to be someone who provides guidance towards specific targets and goals, providing a kind of supervisory function.



Mentoring

A mentor, by contrast, "helps someone become who they want to be". As agreed by participants at the Kenya workshop, a supervisor was thought to combine elements of both functions, which can be a challenge, considering that the supervisor has their own aims that need to be pursued.



Benefits of structured programmes

As agreed during discussions at the Academy of Medical Sciences' workshops in Kenya and South Africa, structured programmes have the advantage of providing more opportunities for all to identify a suitable mentor. The value and benefits of mentoring need to be understood by all who are participating, and training for mentors is important. It was argued that selection of mentors should be based on commitment, to ensure that they are engaged and available. Personal chemistry between mentor and mentee is essential, and opportunities to switch mentoring pairs need to be available if relationships do not work out.



Mentoring programmes in Brazil

Mentoring programmes are still in their infancy in most universities in Brazil and it was felt that the mentor role was not well understood. Terms such as "adviser" and "mentor" tend to be used interchangeably. No training is provided to mentors, who therefore rely on their intuition to work out how to support mentees. There are currently no incentives to be a mentor and little value is attached to mentoring activities, so suitable mentors can be hard to identify. Senior researchers also have many demands on their time, and mentoring is an additional function that it can be difficult to find time for.



Making mentoring work

As discussed during the recent workshops in Kenya and South Africa, mentoring was felt to be based on a relationship of trust, with mentees encouraged to think for themselves and solve their own challenges. Mentors should be open and available and offer advice if requested. The relationship should be one of equals and non-hierarchical, through which both mentor and mentee learn. Mutual respect is critical, and a mentor may sometimes need to act as a "critical friend" and challenge a mentee's thinking. A mentor's primary focus should be on the question: "How can I help them grow?"



Role models

Role models were thought to be individuals who provide an example that others can aspire to, for example because of their accomplishments, personality and behaviour, or values and ethics. Role models can be relevant to personal and professional lives. It was suggested that role models inspire admiration and act as an example that encourages emerging researchers to pursue a career in research.

It was also argued that people could have "negative role models" – people whose behaviour provides a specific example of traits or activities to be avoided.



Dr Thaddeus Blanchette, Ms Camila Quartim de Moraes Bruna, Mrs Leila Leal, Dr Clarissa Gurgel Rocha, Dr Nailê Damé-Teixeira, Dr Alan Eriksson, Prof Sandra Cortes

Breakout group discussions on challenges and opportunities

As was the case during the recent workshops in South Africa and Kenya, participants identified a range of similar challenges faced by researchers in Brazil attempting to develop a career in research. These challenges include a lack of training and time for academics to get involved with mentoring programmes, gender barriers faced by women, and a lack of funding opportunities.



Shortage of healthcare workers

For medically qualified researchers, the shortage of healthcare workers in Brazil creates pressures to spend more time in medical practice than in research.



Bureaucracy

Practical challenges identified by participants included the bureaucracy associated with acquiring grant funding and spending money once funding is secured. Participants also suggested that even when funding was available, financial rules sometimes make it difficult to spend the funds, which was felt to be disempowering. Some participants had experienced sudden changes in rules with no explanation. It can also be difficult to import certain items from outside Brazil. The volume of reporting during grants was also sometimes felt to be time-consuming.



Training

Other challenges mentioned included a lack of training when new responsibilities were taken on, the number of different roles that academics were expected to perform (teaching in graduate and postgraduate programmes, in specialty residence programmes, and administrative functions), and barriers faced by women researchers such as returning to a research career after a career break.



Funding

Funding is concentrated in the south-east of Brazil and socioeconomic barriers could limit opportunities to pursue a career in science. Usually, the resources are mostly for senior researchers with fewer chances for new researchers to pursue their careers.



Empowering emerging researchers

To address these issues, participants argued that more opportunities should be provided to empower emerging researchers and support their independence. Simpler spending rules could be established. Opportunities for women researchers should be reviewed, and policies in areas such as maternity leave re-examined. Institutions and more experienced researchers from Brazil and the UK could also provide additional technical or administrative support for emerging researchers. The need to consider the mental health of researchers was also highlighted, and strategies to support researchers' mental health, especially junior researchers, were discussed.



Widening professional networks and collaborations

Institutions hosting exchange programmes could also offer opportunities and practical actions to guarantee long-term partnerships and further help junior researchers. Participants also suggested that institutions should value more researchers who bring in additional funding.

Suggested practical actions for emerging researchers included building of skills-based networks, widening of professional networks, and establishing collaborations with international researchers. Regional exchange schemes could help to address geographic disparities. Better institutional support for emerging researchers could be extended to those on postgraduate programmes that do not have a formal link to institutions.



Prof Patricia Bozza, Simon Denegri, and Prof Marcello A Barcinski FMedSci

The Affiliate Members programme and the Aristides Pacheco Leao Scientific Initiation form part of the Brazilian Academy of Science's initiatives to support students and researchers in Brazil. The Aristides Pacheco Leao Scientific Initiation provides opportunities for university students to undertake a summer internship in the laboratory of a member of the Academy. The Affiliate Members programme organises mentorship talks, meetings to stimulate experience exchange and networks and its members can also participate in the Academy's thematic working groups.



Prof Patricia Bozza, Brazilian Academy of Science, Brazil

The Academy of Medical Sciences provides a programme of career development support for early- to mid-career researchers, including mentoring, events, and training programmes. Independent evaluations have demonstrated the impacts of these programmes, particularly for researchers navigating transition points in their careers.



Dr Rachel Macdonald, The Academy of Medical Sciences, UK

Conclusions

This workshop provided an opportunity for participants to share and discuss best practice for emerging researchers developing their careers in Brazil.

The workshop focused on three main areas of discussion: presentations and reflections on career development schemes run by the three academies; differences between mentoring, coaching, and role models; and the challenges and obstacles faced by emerging researchers in Brazil.

Structured careers development programmes for researchers early in their careers such as the <u>Young</u> <u>Physician Leaders programme</u>, the <u>Aristides Pacheco Leao Scientific Initiation</u> and the <u>ABC Affiliate</u> <u>Members programme</u> can provide mentoring and training opportunities for emerging researches in Brazil at this critical stage in their careers.

However, similarly to what was discussed during the South Africa and Kenya workshops, levels of individual support from institutions are relatively low and mentoring opportunities are limited in Brazil. Recommendations to make mentoring successful focused on making sure that mentoring is based on a relationship of trust, with mentees encouraged to think for themselves. The mentor—mentee relationship should be one of equals and non-hierarchical, where both can learn from each other. Role models can also inspire admiration and act as an example to encourage emerging researchers to pursue a career in research. More efforts should be made to reach out to disadvantaged groups to support their career development in medicine and research.

Emerging researchers face multiple challenges and opportunities as they seek to develop their independent research careers. Shortages of healthcare workers in Brazil create pressures for junior researchers to spend more time in medical practice than research. There is also a lack of training opportunities for emerging researchers as they are expected to perform a multitude of different roles, which creates heavy workloads. Funding is also concentrated in the south-east of Brazil and limits opportunities for junior researchers to pursue careers in science.

To address these challenges, recommendations were made to empower emerging researchers and support their independence. These recommendations included improvement to grant management and institutional policies, the building of skills-based networks and widening of professional networks. An international outlook is also important to emerging researchers. Stronger links between the UK and Brazil, for example, could provide additional opportunities for exchange, networking and building of new research collaborations.

Annexes

Annexe one: workshop steering committee

Both the early scoping work and development of the workshop was informed by a wide range of experts from different countries and sectors.

Co-chairs

- Prof Marcello A Barcinski FMedSci, Professor Emeritus, Federal University of Rio de Janeiro, Brazil
- **Prof Alison Holmes OBE FMedSci,** Professor of Infectious Diseases and the Director NIHR Health Protection Research Unit, Imperial College London, UK

Members

- **Dr Ottorino Cosivi,** Center Director, Pan American Center for Foot-and-Mouth Disease and Veterinary Public Health, (PANAFTOSA) Pan American Health Organization, Brazil
- Prof Pedro F da Costa Vasconcelos, Professor, Department of Pathology, Pará State University, Brazil
- Prof Claudio T Daniel-Ribeiro, Full Professor, Oswaldo Cruz Foundation, Brazil
- **Prof Chris Dye FMedSci,** Professor of Epidemiology, University of Oxford, UK
- **Prof Helena Lage Ferreira,** Professor (Associate), University of São Paulo, Brazil
- Prof Celso F Ramos Filho, Professor, Federal University of Rio De Janeiro, Brazil
- Prof Helena B Nader, Professor and Head of the Institute of Pharmacology and Molecular Biology, University of São Paulo, Brazil

Annexe two: participant list

Participants

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Annexe three: glossary

ABC Brazilian Academy of Sciences

ANM National Academy of Medicine

FLIER Future Leaders in Innovation, Enterprise and Research

HIVE Hub of Innovation, Vision & Engagement

INCA Brazil's National Cancer Institute

PILLAR Promoting Innovation, Learning, Leadership and Resilience in the research community

PPI public and patient involvement



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