# The skillsets needed today and for the future: Developing the next generation of research infrastructure leaders

Session 13 | Main room | 12.00-1.00PM



Lisa Yen
Chief Executive
Officer of
Microscopy
Australia



Emeritus Professor at University of Queensland and Flinders University

**Professor Joe** 

Shapter



Chief Executive Officer of AuScope Limited



**Dr Graham Wright** 

Director of the Research Support Centre within Singapore's Agency for Science,

for Science, Technology & Research (A\*STAR)



Director of the Bio-Hub, Euro-Biolmaging ERIC



# National Research Infrastructure Advisory Group - Workforce

Joe Shapter, Member, NRI Advisory Group and Chair, NDRI Working Group

https://www.education.gov.au/national-research-infrastructure/advisory-group and

https://www.education.gov.au/national-research-infrastructure/national-digital-research-infrastructure-ndri

**December 2024 – ICRI Meeting** 



# **Acknowledgement of Country**



### **National Research Infrastructure**

**National research infrastructure (NRI)** - assets, facilities, services and associated expertise to support leading-edge research and innovation. NRI is prioritised through **NRI Roadmaps** and managed through the **National Collaborative Research Infrastructure Strategy (NCRIS)**.

### **NRI Roadmap Cycle**

- Every five years the Australian Government develops an NRI Roadmap to identify research infrastructure capabilities and future areas of need.
- The most recent Roadmap was developed in 2021.
- A new Roadmap is being planned for 2026.

## 2021 Roadmap



## **National Research Infrastructure Advisory Group**

- Establishment recommended in the 2021 Roadmap.
- Commenced work in 2023.
- Guided by a Terms of Reference which states that the group will advise on NRI policy and investment and develop future NRI Roadmaps.

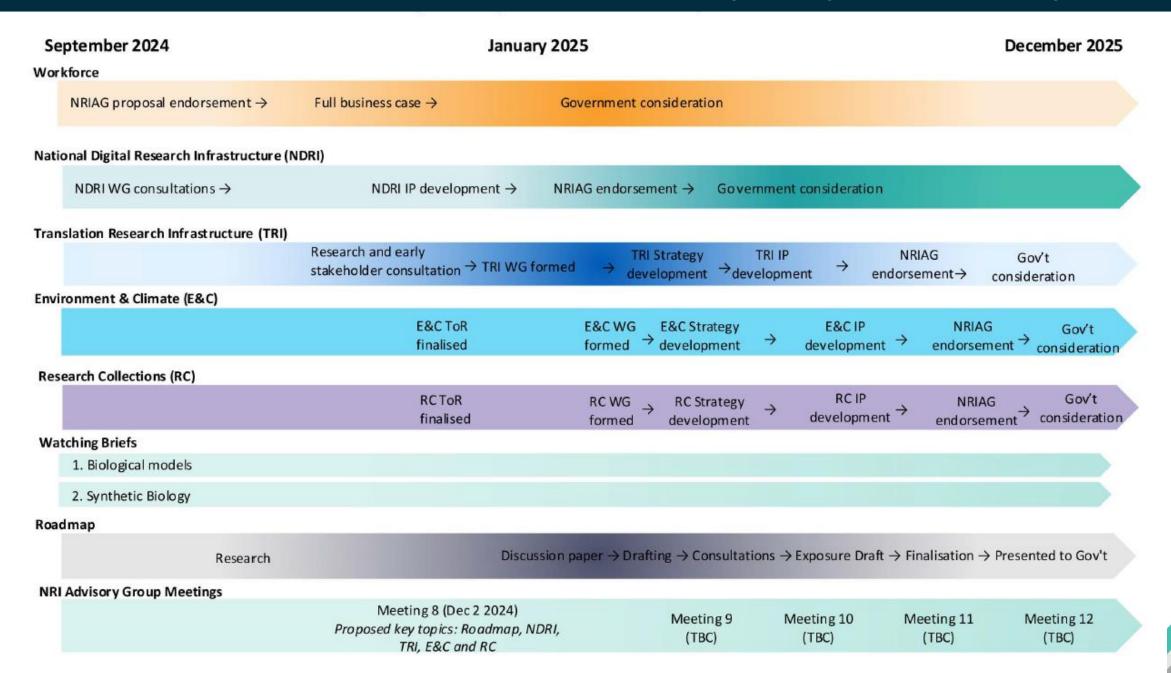
### **Appointed members:**

Liz Sonenberg (Chair), Joe Shapter, Calum Drummond, Stephen van Leeuwen, Mark Western, Leanna Read, Lauren Stafford, Suzanne Toumbourou

### **Ex-officio members:**

Sam Rosevear, Department of Education
Helen Wilson, Department of Industry,
Science and Resources
Cathy Foley, Australia's Chief Scientist
Richard Johnson, Australian Research Council
Jane Fitzpatrick, Australian National
Fabrication Facility (NCRIS Directors' rep)

## National Research Infrastructure Advisory Group Current Workplan



## Workforce

| Institutional  | Individual   | Mobility   |
|--|--|--|
| Establishing a branch of the UK Technician Commitment in Australia | Academy for Collaborative Research Infrastructure (ACRI) has been set up (see acri.org.au) | Exploring a fellowship scheme to allow/promote the movement of staff |
| Visibility Recognition Career Development Sustainability           | Voice<br>Networking<br>Upskilling<br>Knowledge   | Professional Development Technical Development                       |



# Thank You



https://www.education.gov.au/national-research-infrastructure





# Building and Offering Training Opportunities for RI Staff at the International Level

Antje Keppler

Director Euro-Biolmaging ERIC Bio-Hub

Coordinator Global Biolmaging

How to prepare a skilled workforce to meet the evolving needs of future Research Infrastructures?









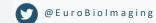
# Skills to be covered by RI operators:

- Advanced scientific and technical expertise to deliver RI services
- Experience in management, finance and administration
- Provision of training (in various formats and with high quality)
- Strategic thinking for keeping RI services cutting-edge and tailored to user needs
- Experience to work with academia as well as industry
- Soft skills: Team management; working under time pressure with limited resources
- Lobbying skills for negotiating with decision-makers and funders.
- ... and more, as well as
- Conviction, commitment, & resilience.









Euro-Biolmaging ERIC offers access to biological and biomedical imaging services



19

**ERIC MEMBERS** (18 COUNTRIES & EMBL)



41

**NATIONAL NODES** 



237

SITES IN EUROPE AND BEYOND





EUROSBIOIMAGING

120+

STATE-OF-THE-ART IMAGING **TECHNOLOGIES** 



Open to all scientists from academia and the industry



Open to any career stage and area of research



Open to users of any level of expertise (training available)









# Euro-Biolmaging Training Program for Imaging Core Facility Staff







Peer to Peer training

**Exchange of Experiences** 

Inspiration and Support

Building a network



Funded by the European Union

# Building a European network of expertise and collaboration

Job Shadowing visits for Node Staff to learn technical and soft skills at a different Node

High demand - 24 Application pairs in 1 month

- Diversity of topics Facility management
  - **User Support**
  - Image Data Analysis and Management
  - **Electron Microscopy**
  - Correlative Imaging
  - EU project management

### Expanding perspectives

Pilot program for paired job shadowing between RI and industry staff under













Cities where Euro-BioImaging facilities are located



We need human-to-human connections beyond a presentation on a screen. We need space and time to exchange thoughts and knowledge.

The Job Shadowing program allowed me to dive into practical and hands-on details with my host in a way and at a level that has no equivalent.





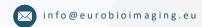




Inspiration is really what I brought back home from my visit. This inspiration might impact how we do things at my facility, changing our service provision for users and driving us to dare to engineer and experiment more.









# Global Mentoring Program for Imaging Scientists



Building relationships between Euro-BioImaging Nodes and the imaging community around the world.

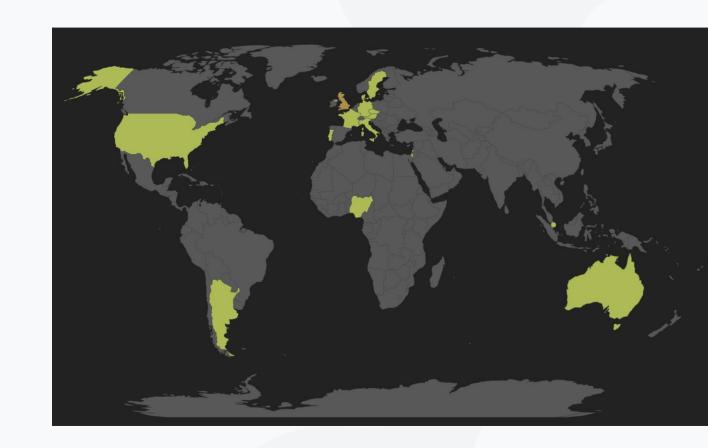
Program open to all Imaging Scientists

20 Mentor - mentee pairs formed

15 nationalities across all continents

6 monthly virtual sessions per pair and complementary master classes for the whole cohort focused on

- Career Development
- Business Strategy and Entrepreneurship
- Management and Soft Skills for imaging scientists
- Leadership and Negotiation
- Women in Science







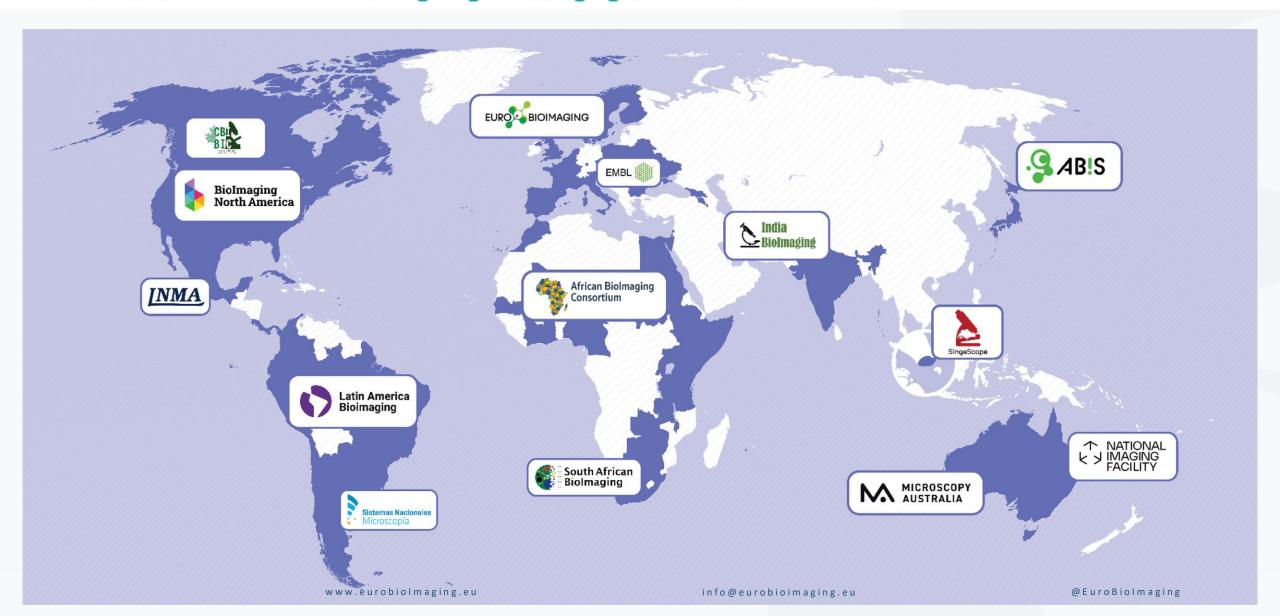




# **Global Biolmaging**



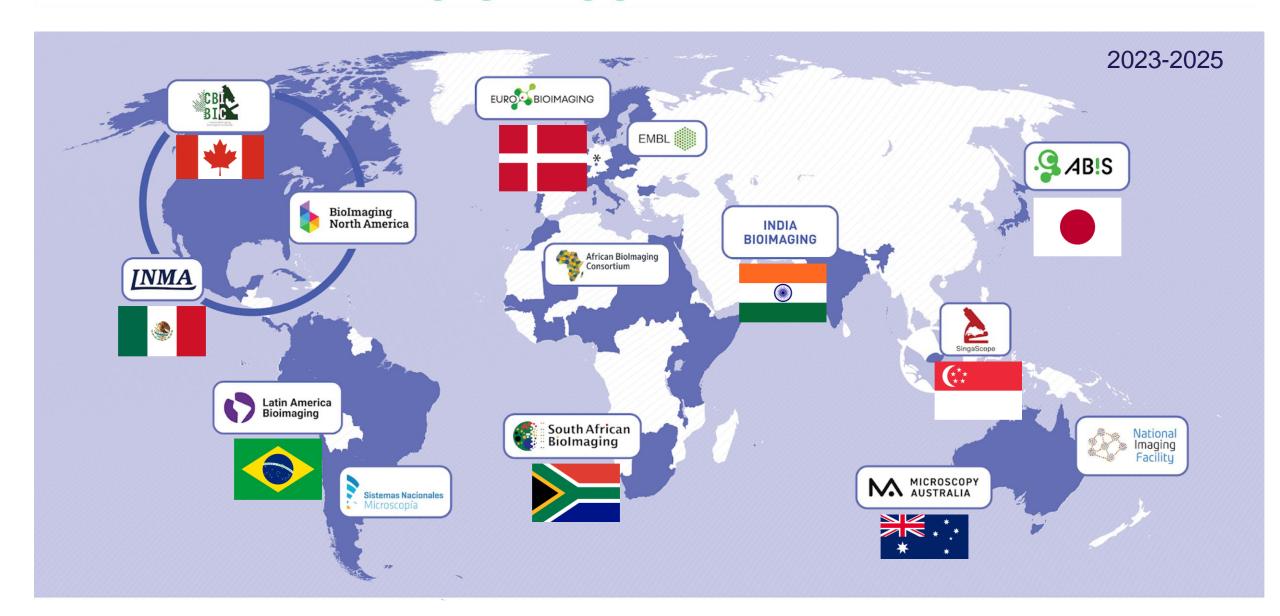
The international network of cutting-edge bioimaging facilities and communities



# **Global Biolmaging**







### TRAINING ACTIVITIES



### INTERNATIONAL TRAINING COURSES by GBI

- Organized in collaboration with Global BioImaging partner organizations
- Target audience: imaging core facility professionals
- Open to international participants from around the globe

### INTERNATIONAL JOB SHADOWING via GBI

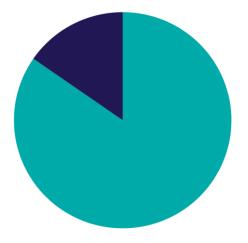
- An on-the-job training opportunity
- Available in Australia, Canada, Europe, India, Japan, Mexico, Singapore, South Africa, Uruguay and USA
- 65 job shadowing applications
- Varied offer depending on facility focus and expertise as well as the target audience, technical or managerial staff



Global BioImaging course Mexico in 2023

# Attendance of virtual and in-person GBI training events since 2020:

- 2177 by virtual participation
- 395 by in-person participation





### **INTERNATIONAL TRAINING COURSES 2023-2024**

### GLOBAL BIOIMAGING INTERNATIONAL TRAINING COURSES

**2023 (MEXICO):** Facility Management

2023 (JAPAN): Image Data

2023 (CANADA): Train-the-trainer (LM)
2023 (SOUTH AFRICA): Facility Management

2024 (MEXICO): Image Data

2024 (ARGENTINA): Train-the-trainer (LM)

2024 (BRAZIL): Facility Management

2024 (DENMARK): Imaging Technologies (LM & Biomed)

**2024 (SINGAPORE):** Facility Management







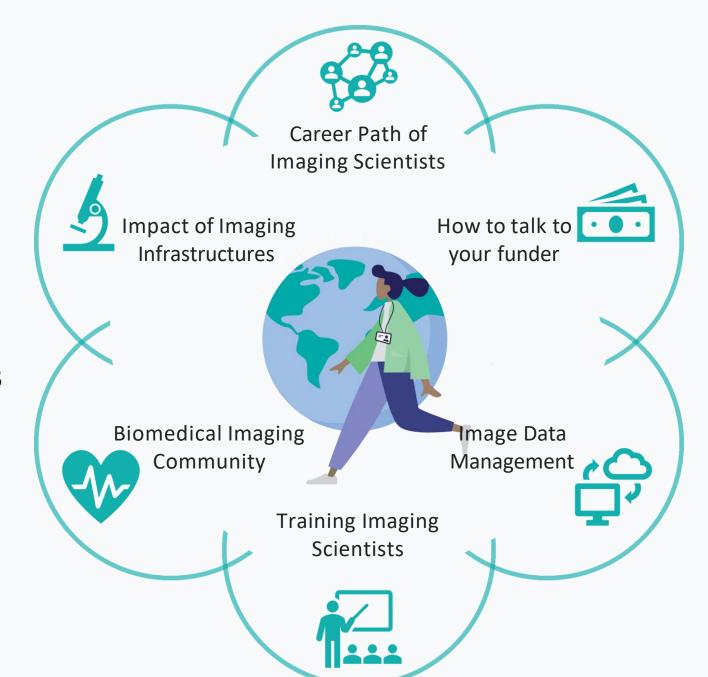


















# GBI Exchange of Experience (EoE) Meetings



### **Annual EoEs since 2016:**

2016 (EMBL, Europe): Best practices in imaging facility operation

2017 (Bangalore, India): Open user access policy

2018 (Sydney, Australia): Quality Management

2019 (Singapore): Career Path for Facility Staff

2020 (Virtual): Pre-publication image data

2021 (Virtual): Imaging infrastructures in a time of change

2022 (Montevideo, Uruguay): Imaging Impact and the UN SDGs

2023 (Cape Town & Stellenbosch, South Africa): Training









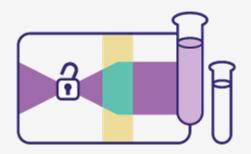






# Funding opportunities for imaging scientists from low/middle income countries by Global BioImaging











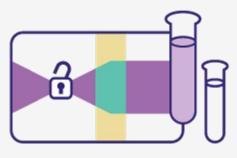


# **Imaging 4 All**

https://globalbioimaging.org/i4a



- A Wellcome Trust-funded grant, administered by Global BioImaging
- Addressing the lack of access to imaging facilities & training for researchers based in low- and middle-income countries (LMIC)
- Pilot Project = 3 years
- 3+ Open Calls for funded user access (up to EUR 20k/access)



### i4A - Access

Access to an imaging core facility



i4A-Pro

Personalized
extended
research access
in an accredited
core facility



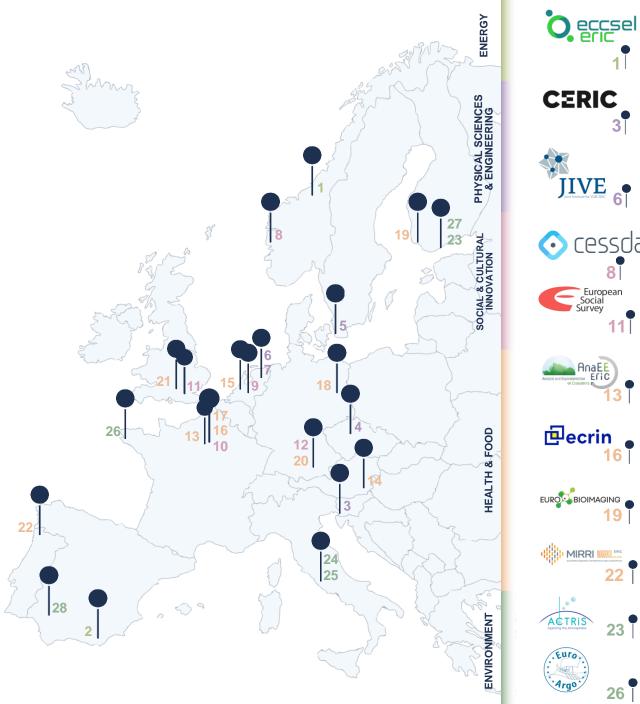
**i4A - Training** 

Attendance in a training course

# THE ERIC FORUM

Antje Keppler ERIC Forum Chair





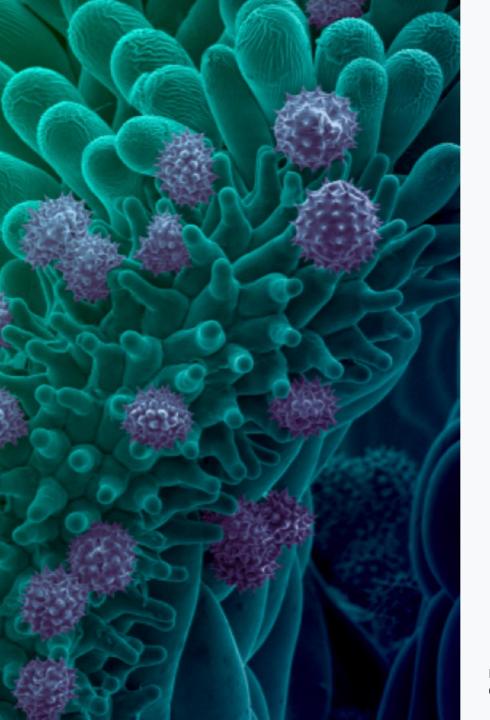




2011 FIRST ERIC ESTABLISHED

# today 28 ERICs

with an average of 12 Member Countries







## Thank you for your attention!

Join our newsletters to stay up to date:





/Global BioImaging



www.globalbioimaging.org

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Session 13: The skillsets needed today and for the future: Developing the next generation of research infrastructure leaders

### **Graham Wright PhD MBA**

Director, Research Support Centre, A\*STAR

International Conference on Research Infrastructures (ICRI) 2024 3-5 December 2024 Brisbane, Australia



CREATING GROWTH, ENHANCING LIVES













### Authors:

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**GBI Working group 2024** co-chairs:



**Kerry Thompson** GBI Career Path Working Group Co-chair Assistant Professor in Anatomy and CZI Imaging

Scientist - University of Galway, Ireland



Yara Reis GBI Career Path Working Group Coordinator External Relations Manager

# Microscopy





### Recognising the importance and impact of Imaging Scientists: Global guidelines for establishing career paths within core facilities

Graham D. Wright, Kerry A. Thompson, Yara Reis X, Johanna Bischof, Philip Edward Hockberger, Michelle S. Itano, Lisa Yen, Stephen Taiye Adelodun, Nikki Bialy, Claire M. Brown, Linda Chaabane, Teng-Leong Chew, Andrew I. Chitty, Fabrice P. Cordelières, Mariana De Niz, Jan Ellenberg, Lize Engelbrecht, Eunice Fabian-Morales, Elnaz Fazeli, Julia Fernandez-Rodriguez, Elisa Ferrando-May, Georgina Fletcher, Graham John Galloway, Adan Guerrero, Jander Matos Guimarães, Caron A. Jacobs, Sachintha Jayasinghe, Eleanor Kable, Gregory T Kitten, Shinya Komoto, Xiaoxiao Ma, Jéssica Araújo Marques, Bryan A. Millis, Kildare Miranda, Peter JohnO'Toole, Sunday Yinka Olatunji, Federica Paina, Cora Noemi Pollak, Clara Prats, Joanna W. Pylvänäinen, Mai Atef Rahmoon, Michael A. Reiche, James Douglas Riches, Andres Hugo Rossi, Jean Salamero, Caroline Thiriet, Stefan Terjung, Aldenora dos Santos Vasconcelos, Antje Keppler ... See fewer authors A

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Graham D. Wright, Kerry A. Thompson and Yara Reis contributed equally to this work.



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# Microscopy



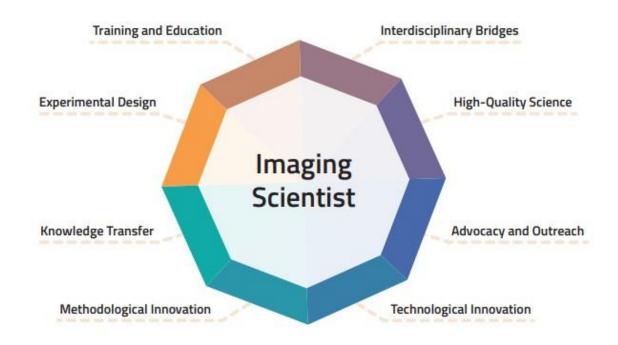
THEMED ISSUE ARTICLE 

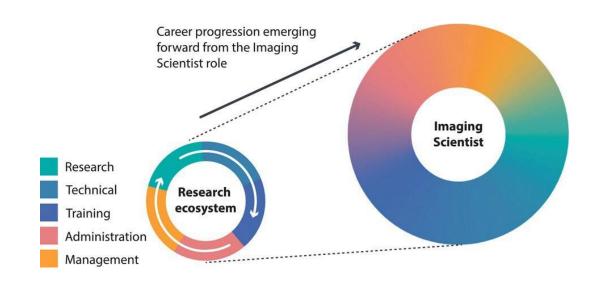
Open Access

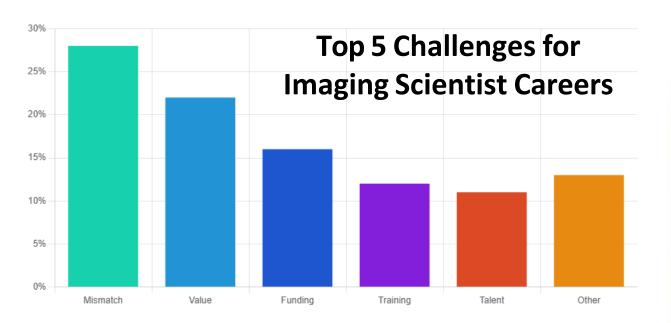


Recognising the importance and impact of Imaging Scientists: Global guidelines for establishing career paths within core facilities

- What is an imaging scientist?
- Highlighting the value and impact of the imaging scientist in a core facility **FACILITIES**
- Recruiting and retaining personnel
- Training and professional development of imaging scientists







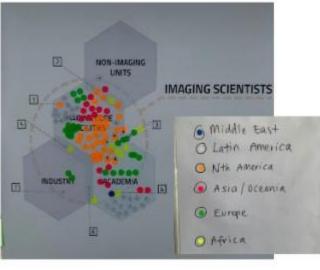
## Have your Say!!



215 responses to date (Nov 2024). Closing at the end of the year.













Mapping and influencing career pathways for Core Facility Staff in Australia



Microscopy Australia



30th May 8-9 am CEST & 5-6 pm CEST

Register at tinyurl.com/gbispotlight

Sach Jayasinghe Oueensland Cyber Infrastructure Foundation

# GLOBAL BIOIMAGING Spotlight Series

Charting an imaging science career path in **Africa** 



University of Cape Town

Michael Reiche

University of Cape Town

Africa Microscopy Initiative

HHMI Janelia

Spotlight Series

From Trainee to Trainer:

**Building Networks and Opportunities in** 

**Bioimaging** 

Teng-Leong Cher

& 28 June 8-9 am CEST Register at tinyurl.com/gbispotlight

27 June 5-6 pm CEST

GLOBAL BIOIMAGING

HHMI Janelia

## GLOBAL BIOIMAGING Spotlight Series



(Why) Is an MBA useful for a microscopy core facility manager?

A\*Star - Agency for Science. Technology and Research



29 August 8-9 am CEST & 5-6 pm CEST

Register at tinyurl.com/gbispotlight



one voice through networks and communities

role of the Technician Commitment in career



UK Institute for Technical Skills & Strategy University of Nottingham



Andrew Filby Newcastle University

Institut Pasteur de Montevideo

Marcela Díaz



Register at tinyurl.com/gbispotlight



# GLOBAL BIOIMAGING **Spotlight Series**







Northwestern University

Northwestern University

**University-Industry Collaboration:** moving beyond simply providing services



19 December 5-6 pm CET & 20 December 8-9 am CET

Register at tinyurl.com/gbispotlight





The Technician Commitment:

A personal perspective on the progression



26 Sept 8-9 am CEST Register at tinyurl.com/gbispotlight

## **Distance Learning (blended) MBA**

- Flexibility with online & location (UK)
- > Ranked 1 st (2022) by Financial Times Online MBA Ranking
- Triple Accredited (AMBA, EQUIS, and AACSB)
- > \$\$ Cost
- > Requirement for 5+ years of managerial experience









### Modules undertaken (mix of mandatory & selected):

- ✓ Accounting & Financial Management
- ✓ Economics of the business environment
- ✓ Modelling & Analysis for Management
- ✓ Marketing
- ✓ Organisational Behavior
- ✓ Operations Management

- ✓ Digital Innovation Analytics for Leadership
- ✓ Innovation & Creativity in Organisations
- ✓ Management Accounting
- ✓ Operations Strategy
- ✓ Project Management
- ✓ Strategic Advantage
- ✓ Entrepreneurship and New Venture Creation

### **Research-based Dissertation**

Academic-industry collaboration: a study of core technology platform collaborations in the context of the UBC framework





### Leadership and Management in Core Facilities

How to meet the unique challenges of operating in a university setting

Running a core facility successfully requires both a strong set of business management skills and deep insights into the nuances of leadership in a university setting. This four-day executive learning experience focuses specifically on helping you enhance your business and management skills and developing the leadership capacity to run your operation more effectively.

In this hands-on program, you'll expand your knowledge and learn new approaches to leadership as you practice applying them to a challenge in your own organization. You'll develop a team orientation that will enable you to engage your teams more effectively. You'll leave this program with a deep understanding of your individual strengths and how to leverage them to meet difficult challenges and seize new opportunities.

### Who Should Attend



### **Key Benefits**



### **Program Content**



The curriculum will offer a rigorous and research-based classroom learning experience paired with relevant tools and business principles that can be put into practice immediately.

### Leadership Topics:

- · Enhancing persuasion and influence skills
- · Leveraging strengths-based leadership
- · Understanding and creating strong organizational culture
- Leading teams and collaborating for impact

### **Fiscal Strategy and Management Topics**

- · Marketing and consumer behavior
- · Pricing strategies
- Creating market value



In this practical course, designed specifically for core facility managers in the life sciences, you will learn how to:

- Balance your different roles
- Build a productive team culture
- Deal with conflicts constructively
- Manage your time better
- Delegate tasks more effectively
- Deal with different personalities in the team
- Position your facility in your organisation strategically
- Negotiate more effectively
- Hire the right people
- Manage your budget



# **Great supervisors, mentors and societies... providing opportunities and opening eyes to (alternate) options**









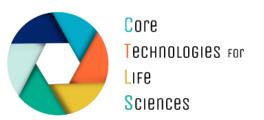












## Thank you - Keep in touch!



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Research Support Centre









### RI skills challenge from the point of view of an integrative science discipline











Food and Water Geohazards

Climate change adaptation

### Humanity relies on the services provided by the Earth's crust to survive and thrive

Energy



## **Export Share**

by type

Resources: 60.1% Services: 19.6% Rural: 10.1% Manufactured: 8.0%





- University funding models are often based on student numbers rather than strategic plans
- Many discipline areas are not represented in tightly packed secondary school science syllabus







- Lack of students entering undergraduate degrees with pre-existing interest is an existential threat to RI's and disciplines.
- Challenge of attracting numerate students into integrative science disciplines such at geoscience
- Role for RI's in delivering high quality STEM engagement programs at primary, secondary and tertiary levels
  - AuSIS Seismometers in Schools
  - GPS in Schools
  - Magnetometers in Schools
  - GPlates in Schools (app)
  - AusGeochem in the Classroom
- Hard to do on your own need for better integration into national STEM engagement programs

