2023 Research Priority Exercise

RSB Research Committee

Australian National University

ANU College of Science and Medicine

Research School of Biology

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School Overview

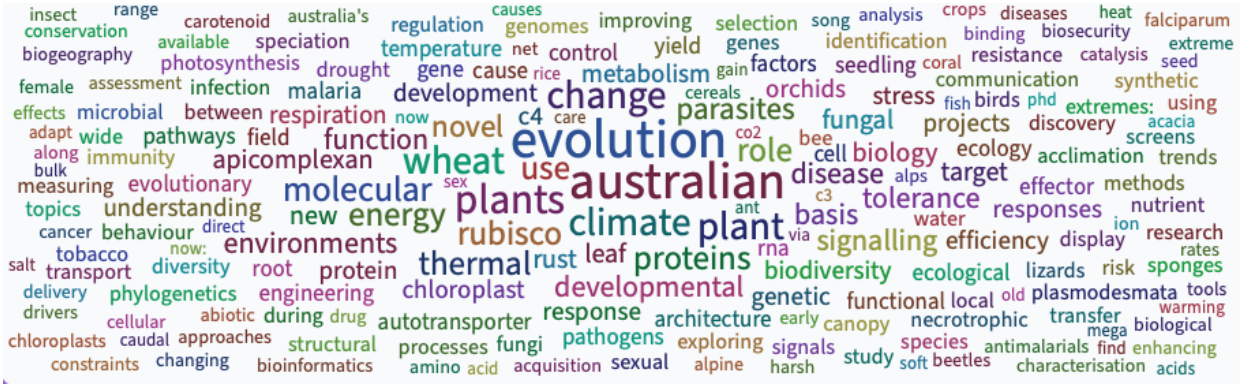

Figure 1: The breadth and depth of the Research School of Biology research program as captured from the titles of our HDR student project titles.

Research Mission

The Research School of Biology (RSB) undertakes fundamental research to understand the function, diversity and evolution of animal, plant, fungal and microbial life. Our research is driven a passion for discovery and application of new knowledge. Working at the cutting edge of modern biology, we combine experimental, field-based and comparative approaches with the latest advances in 'omics and computational biology. RSB has a large and diverse body of early-career researchers who enrich our intellectual environment and are trained in high-level experimental, analytical and communication skills.

Organisation

RSB is the largest School at ANU and is structured into 3 Divisions - Biomedical Science and Biochemistry (BSB), Ecology and Evolution (E&E) and Plant Sciences (PS). Following a large number (11) of retirements in 2021, many of whom remain active in research and teaching, RSB has 50 group leaders in ongoing positions; 15 in BSB, 18 in E&E and 17 in PS. These researchers are supported by approximately 60 postdoctoral scientists and 140 PhD students. RSB benefits from the expertise of more than 70 technical staff (approximately half are RSB-funded and half are external funded).

RSB researchers work closely with researchers and staff across the ANU, including Fenner School for Environment and Society (FSES), Research School of Chemistry (RSC), Mathematical Science Institute (MSI), Centre for Public Awareness of Science (CPAS), and John Curtin School of Medical Research. RSB has close connections to the Biological Data Science Institute (BDSI), the Centre for Entrepreneurial Agri-Technology (CEAT), Shine-Dalgarno Centre for RNA Innovation, and the Synthetic Biology Initiative (SBI).

Table 2: Continuing RSB Group Leaders

Position	Overall Male/Female	BSB	E&E	PS
Professor	21/6	6/1	8/4	7/1
A/Professor	4/5	1/2	2/1	1/2
Senior Lecturer	3/6	0/2	1/2	2/2
Lecturer	2/3	1/2	0/0	1/1
Total staff numbers	**30/20**	**8/7**	**11/7**	**11/6**

Research & Training performance

ANU is one of Australia's foremost research universities with a global reputation for excellence in research and innovation, particularly in the Biological Sciences. The high quality of biological science research at ANU is indicated by the 2018 Excellence for Research in Australia (ERA) assessment awarding ANU the maximum score of 5.

Over the past 10 years, RSB has hosted 21 DECRA and 9 Future Fellows and has supported them to realise their potential and to be as competitive as possible for continuing positions. Of the 23 of these ARC Fellows who are not still on Fellowship at ANU, more than 70% went on to such jobs, in RSB or elsewhere.

Exploring RSB research strengths -current and emerging

To capture a current assessment of research strengths and directions we conducted a consultative strategic development process between the end of 2022 and late 2023. A workshop at the December 2022 Faculty Retreat asked group leaders to identify the areas of research in their fields that they wanted to explore in the coming years. Their answers were used to identify areas of sustained research excellence as well as emerging research themes within and among the three divisions.

Subsequently a school-wide Research Themes survey was conducted in March 2023 to ensure that we had represented the breadth of research foci across the school, including professional staff, non-continuing academic and HDR student insights. The survey further served to develop a picture of the individual motivations of RSB staff and to identify opportunities to better support the RSB community to achieve their goals.

An awareness to the cynicism that often accompanies university level strategic plans led to research on why university strategies often fail across the sector. We took inspiration from *Playing to Win, How Strategy Really Works* and other material by Roger Martin[1]. Their framework on developing winning strategies, namely *Where to Play* and *How to Win* was adopted and shared across the divisions through presentations and discussions. The framework resonated with some and encouraged dynamic, forward-thinking discussions on strategic choices, in an iterative process (Roger refers to this as the *strategy choice cascade*). A great strategy cannot be everything for everyone, a central tenet of the framework is to make choices that enhance the alignment and robustness of pairings of *Where to Play* and *How to Win*.

Reflecting the specific cultures within each division, independent approaches were taken to collect input and draft the Divisional Research Strategy Statements that follow. Over the course of 5 months (May-Sept, 2023) input was collected through one-on-one interviews, divisional meetings, and small focus groups. Draft divisional documents were shared extensively within divisions to solicit feedback and refine the research foci and strategy. The exercise identified 3-4 areas of emerging research foci in each division, and we used the *Where to Play* and *How to Win* framework to explore each of these.

In recognition of the increasingly interdisciplinary flavour of science we also used our exploration of RSB research priorities and strategy to identify opportunities for cross-divisional research initiatives. RSB is a large school, and while group leaders generally have a reasonable understanding of what colleagues in their own division do, our understanding of what is going on in other divisions is often patchy, opportunistic or reflects historical connections. For EMCRs, non-continuing and professional staff it is harder to be aware of opportunities for innovative and interdisciplinary collaborations. We seek to use this planning exercise to highlight a few research foci that are timely and for which our internal diversity and broad external collaborative networks hold greatest potential. By encouraging cross-divisional interactions in this space we hope to support the development of new collaborations and emergence of new research programs, small and large.

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[1] Lafley, A. G., & Martin, R. L. (2013). *Playing to win: How strategy really works*. Harvard Business School Publishing.

Opportunities for cross Divisional initiatives

Three areas stood out to the RSB Research Committee as having the strongest potential for cross-divisional interaction. We see these areas where school support and investment has the greatest potential to yield major initiatives and scientific advances.

Table 2: Cross Divisional Research Interest Overlap

Three areas were identified with considerable overlap in interest among the divisions. We see great potential in exploring the opportunities for complementarity in perspective and expertise.

Cross Divisional Themes	Related Research Foci
Understanding and Applying Interactions Between Organisms: Individuals and Species	• Social Interactions in Dynamic Environments • Plant-Microbe Interactions • Animal-Microbe Interactions
Applying Ecophysiological Perspectives for Global Climate Change Adaptation and Response	• Species Thermal Tolerance • Plants, Carbon and Water • Future Crops and Biomes
Evolution for Engineering Biological Systems	• Molecular Biotechnology • Future Crops and Biomes • Biodiversity Discovery and Analysis: Assessing risk and informing management

Understanding and applying interactions between organisms: individuals and species

In all three divisions we have cutting edge research that examines how organisms interact. In BSB that work sits in the space of animal-pathogen interactions and scales from elegant studies of mechanisms of transport and infection at the cellular level to the organismal level. In PS research examines microbe/plant interactions, both mutualistic and pathogenic. In E&E studies of interactions include evolutionary studies within species (including social interactions and behaviour), ecological studies of competition, and cross species studies including plant/animal interactions. These areas of interest in the respective schools are clear in the emerging foci identified above. By bridging from the molecular insights in BSB to the evolutionary drivers of E&E RSB can be a major contributor to understanding how interactions have evolved and work and how they can be harnessed for application in health, crop science, conservation and management and global change adaptation.

Applying ecophysiological perspectives for global climate change adaptation and response

Both PS and E&E have strong theoretical, empirical and applied grounding in ecophysiology or environmental physiology, in BSB such questions sit within the host/parasite space and have a different flavour, but still potential for productive alignment. Questions around how our changing climate, particularly the increased incidence of extreme heat events and more frequent drought in much of the country (and world), are at the forefront of much of the work we do. In PS those questions are often considered through the lens of food security: understanding and harnessing ecophysiological variants to improve crop productivity under drier, warmer and more variable climates. In E&E, work on plant and animal ecophysiology takes an evolutionary view in assessing ecological strategies of thermal ecology, nutrition/assimilation, water relations and habitat use in contemporary and simulated future climate scenarios. Our work spans the breadth of natural and managed ecosystems, such that bridging these research strengths provides exciting potential to explore how we can adapt and respond to our changing climate across the Australian continent.

Evolution for engineering biological systems

All three divisions have fundamental research expertise and capabilities that underpin emerging strengthens in synthetic biology and directed evolution. Each division approaches questions in this area with a unique lens to questions, approaches, methods, and outcomes. Benefiting from research discoveries and methods arising from E&E including; genomics, phylogenetics, bioinformatic and biodiversity analysis. At time the more translational research in PS and BSB seek to harness and engineer biology to address central questions and challenges close to their core research interests. Emerging opportunities will benefit from leveraging cross-divisional expertise and multi-disciplinary capabilities at the ANU, reaching into law and policy, social sciences, and engineering. The use of biology-inspired technologies are transforming how we eat, work, play, recover from diseases, and manage ecosystems. RSB researchers are leveraging recent advances in multi-omics and protein and cellular engineering, to develop solutions to address global challenges, including food security, health, industrial biochemistry, and climate resilience.

Summary of emerging areas in each Division

Below we summarise the themes and directions that emerged from our *Where to Play and How to Win* exercise. Where there is alignment with the Opportunities for Cross-Divisional Initiatives we have indicated as such with coloured icons, blue for **Understanding and applying interactions between organisms: individuals and species**, green for **Applying ecophysiological perspectives for global climate change adaptation and response**, and yellow for **Integrating evolution for applications in synthetic biology**.

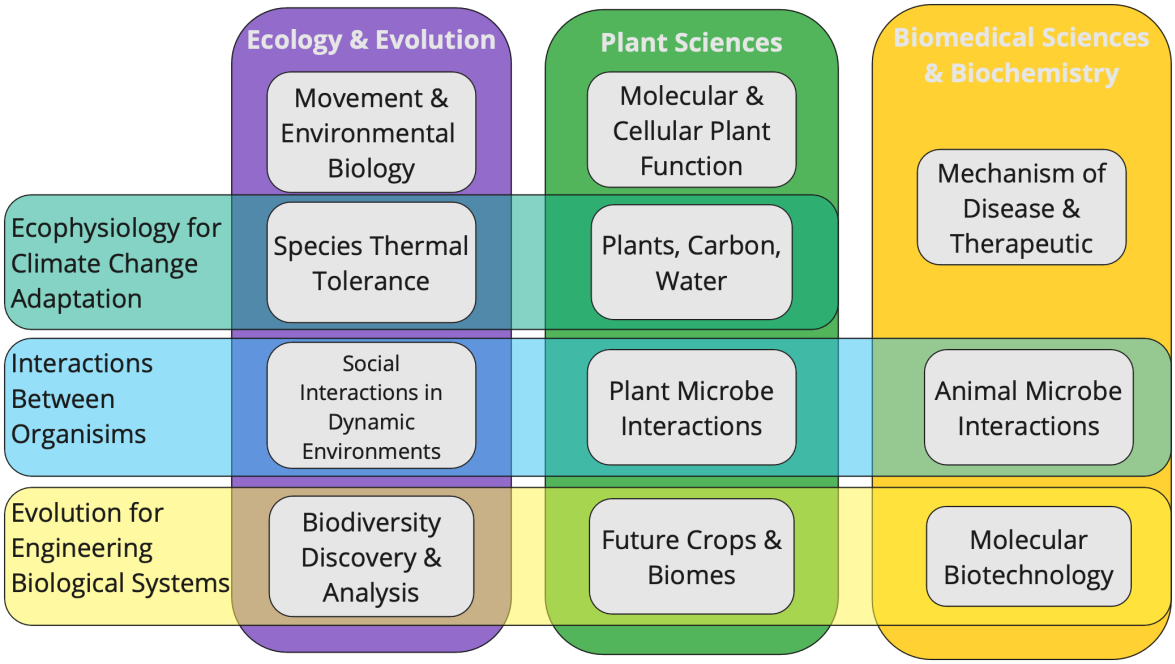


Figure 2: RSB Research Themes and Directions

Biomedical Science and Biochemistry

The Division of Biomedical Sciences and Biochemistry (BSB) at ANU is a vibrant, collegial environment with a commitment to excellence in research and teaching from both academic and professional staff. The Division currently includes 15 permanent group leaders (7 females), and Emeritus staff. The Division has been supported through a diverse range of sources, including ARC Discovery Projects and Linkage Projects, NHMRC Ideas Grants, and a large variety of Category 2 and 3 grants (e.g. from the Medicines for Malaria Venture, Cancer Council ACT, Diabetes Australia, Merck Biopharma, Sanofi-Aventis, Medical Advances Without Animals Trust,)

BSB benefits from campus collaborations and shared access to state-of-the-art molecular and biochemical facilities based at RSB and other Schools, specifically the Research School of Chemistry (RSC) and John Curtin School of Medical Research (JCSMR). Facilities include the Precision Fermentation Facility, Joint Mass Spectrometry Facility, Biomolecular Resource Facility, and Centre for Advance Microscopy.

The division's focus lies at understanding the molecular functioning of cells, particularly in relation to human disease. Much of the research is covered by two broad and overlapping themes, membrane biology and host-pathogen interactions, but we also cover other areas such as genetics, developmental biology, immunology, and synthetic biology. While addressing basic biological questions underpins much of our work, we strive to translate the knowledge gained into practical applications.

Animal-Microbe Interactions, Microbe and Parasite Membrane Proteins

This area includes cross species interactions including both parasitic and mutualistic systems. Approaches span genomic, cellular, organismal and ecological levels and provide insights into host cell biology, immunology, microbiology, and infectious disease.

We have a particular expertise in studies of biological membranes that control the nutrient uptake, waste removal and ion regulation. We seek to become a world-leading hub for functional investigation of microbe and parasite membrane proteins. Multiple groups investigate transporters in apicomplexan parasites, including Plasmodium and Toxoplasma gondii.

Continued success in this area relies on integrating biochemical and cellular approaches for heterologous protein expression, advanced biophysical characterisation, and computational approaches. Infrastructure investment in cell culture, advanced microscopy and technical capabilities are key to future sustainability. Enhanced collaboration and global profile raising would benefit the area.

Our research focus on cross species interactions, including both parasitic and mutualistic systems, are revealing insights into host cell and membrane biology, immunology, microbiology and infectious disease.

Mechanisms of Disease and Therapeutic Intervention

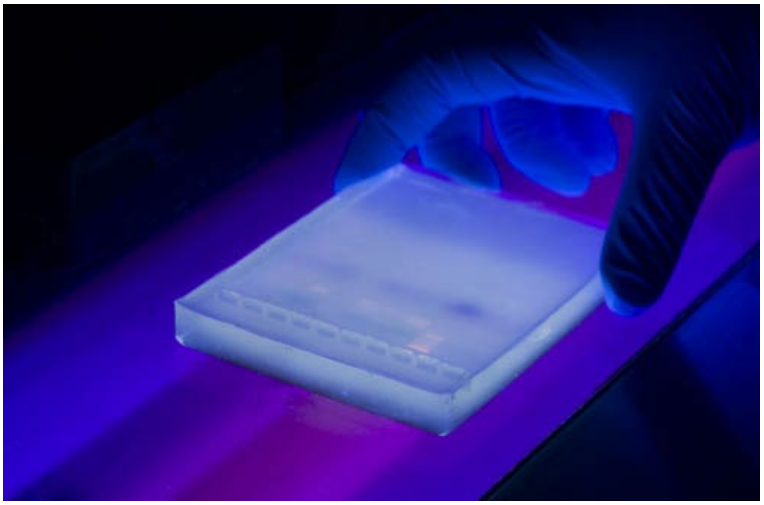
This area aims to explain and combat disease and infection at the molecular and cellular level, centred on three areas: infectious diseases, immunology and diseases of membrane transport. We seek to understand specific animal and human conditions and create therapeutic opportunities. Research spans biochemical and physiological assays to whole organism studies. Through collaborations with several pharmaceutical companies our research spans the identification of novel drug targets, understanding drug mechanisms of action and resistance, improve the design of existing compounds, as well as developing novel immunotherapies.

Additional divisional engagement may be required to develop shared techniques to address a common goal and/or develop joint grant applications. The ability to integrate machine learning and data science into this research area is a growing priority.

Molecular Biotechnology

This area integrates biochemical, systems biology and engineering-based thinking to improve industry-relevant processes and to produce future products inspired by biology.

Cross-school and external collaborations, together with joint-appointments and the ANU SynBio Initiative strengthen the foci spans both medical and non-medical applications. Key industry engagement pathways for collaborative research agreements, workforce training, and commercialisation opportunities are growing both locally and globally.



Molecular biotechnology integrates expertise and approaches from across the university, with applications in therapeutic intervention and biomanufacturing.

Ecology and Evolution

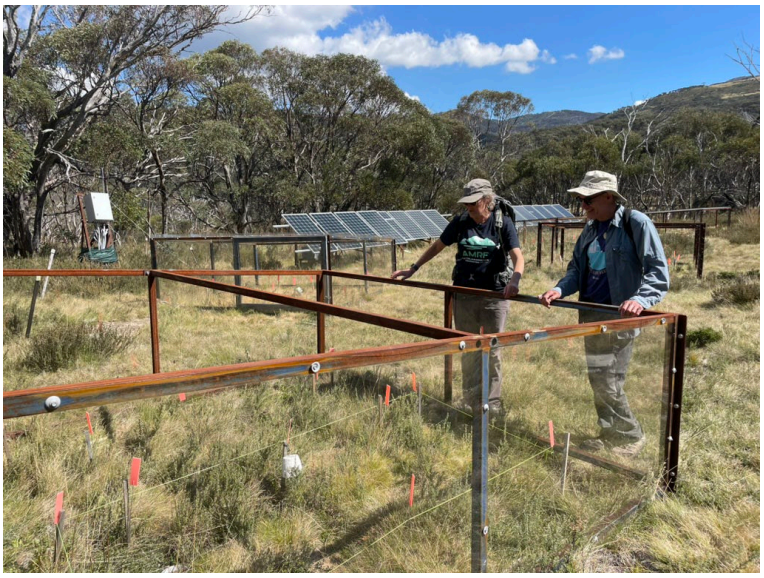
The Ecology and Evolution (E&E) Division is renowned for its research success and global impact. E&E has 18 permanent group leaders (7 females), additional Emeritus staff, and a diverse community of Ph.D. students and postdoctoral researchers. The division collaborates on a global scale and regularly secures Category 1 grants (ARC, GRDC) and both national and international fellowships. Equipped with state-of-the-art facilities, including the Ecogenomics and Bioinformatics Laboratory (EBL) and off-campus field stations, E&E publishes over 200 papers annually in esteemed international journals, consistently achieving top ERA scores in various biology categories.

The division's focus lies in applying ecological and evolutionary approaches in biodiversity sciences. E&E's molecular genetic research spans population genetics, conservation genetics, and phylogenetics. Together with our work in behaviour and ecophysiology we work to improve understanding speciation, biogeographic history, and conservation efforts. Recent turnover allowed E&E to recruit exceptional staff, propelling the division into uncharted research directions within Evolutionary and Physiological Ecology.

Species Thermal Tolerance as a Key Mediator in Climate Change Resilience

This area leverages our expertise in functional ecology and aspires to develop tools for measuring, predicting and maximising thermal tolerance of native species to enable better preparedness, management and conservation of Australia's biodiversity and ecosystems in the face of rapid climate change. We seek to provide insights into how to manage (or even engineer) novel ecosystems that arising as a result to climate change, thus enabling us to maintain biodiversity, ecological, social and economic values.

We will build this area by enhancing infrastructure for controlled experiments, field research, and monitoring systems and through establishing strong outreach and governmental engagement as a basis for major initiative investment and impact.



Research infrastructure provides opportunities to simulate future climate conditions and assess organism responses, Australian Mountain Research Facility (AMRF). Research is enabling better preparedness, management and conservation of Australia's biodiversity and ecosystems in the face of rapid climate change. ***Photo credit: Anne Reich.***

Movement and Environmental Biology at Landscape Scale

We aspire to build understanding how Australia's unique environments have shaped animal movements and been shaped by their movements. The initiative seeks to elevate Australia's reputation in movement science and explore the distinctive nature of its fauna. It aims to identify key gaps and predict future impacts of environmental changes on animal movements. E&E expertise in this area includes marine mammals, fish, terrestrial mammals, reptiles, and birds, as well as modelling capacity.

Strategic initiatives involve setting up ecological labs, enhancing citizen science, and establishing partnerships with national initiatives and government agencies. This collaboration aims to expand the understanding of animal movements to inform conservation actions.

Social Interactions in Dynamic Environments

This area examines social interaction that mediate ecological and evolutionary processes in animals, including disease spread, information flow, predation rates and opportunities for reproduction. It aims to create an integrated understanding of social systems from individual to population level scales and across environments that then inform when social interactions will help or hinder behavioural response to a range of anthropogenic changes, ranging from urbanisation to climate change.

The study of social interactions in dynamic environments requires bringing together knowledge of social behaviour with an understanding of how the environment influences it over time. By building collaborations across the Research School of Biology, Fenner School, and School of Engineering we position ourselves to compete for major initiatives in this space. Success will depend on field sites and field system establishment with appropriate hardware.

Social interactions mediate ecological and evolutionary processes in animals. For example, we rely on citizen scientists to contribute data that helps us understand how these sulphur-crested cockatoos are adapting to life in urban environments. ***Photo credit: Julia Penndorf***

Biodiversity Discovery and Analysis: Assessing risk and informing management

This area focuses on both conducting fundamental science and training the next generation of scientists that improves our ability to assess risk to, and inform management of, Australian biodiversity. Biodiversity management relies on effectively handling and interpreting vast amounts of data, facilitating a deeper understanding of complex ecological systems. Activities focus on discovery, analysis and synthesis and encompass our expertise in monitoring, systematics and taxonomy, biogeography, phylogenomics, ecology and computational biology.

We are well placed to compete for major initiatives like an ARC Training Centre, ARC Linkage Grants, and other applied funding sources in this area. Success will depend on continued investment in field services, mobile labs and field sites, technology development and bioinformatic and statistical support. Ongoing strengthening of partnerships with government, conservation and management groups across multiple strata will be key.

Plant Sciences

The PS Division currently includes 17 permanent group leaders (6 females), seven active Emeritus group leaders and two Honorary group leaders. After recent retirements five new appointments (3 females) have been made in the areas of molecular genetics, cell biology, cell signalling, plant-pathogen interactions and physiological responses to climate change. The Division's research encompasses the whole spectrum of plant sciences, from molecular processes to whole plant physiology and ecosystem function.

Our research spans gas exchange measurements to isotope determination of key plant metabolites, thermal imaging, architectural (2D and 3D imaging), hyper-spectral imaging, advanced microscopy, genomics and other –omics tools. While the Division lacks an ANU-funded field site, we have controlled plant growth facilities and fantastic professional staff. Long term funding from NCRIS through the Australian Plant Phenomics Facility (APPF) and the Centre for Entrepreneurial Agri-Technology (CEAT) supports enhanced research opportunities and collaboration with industry, and can build a new funding basis for a range of projects.

Our overarching vision is to combine fundamental and applied science to understand how plants function in their environment, from cells to the ecosystem level, with the aim to predict and improve plant and (agro) ecosystem functioning in a changing climate.

Molecular and Cellular Plant Function

To link our understanding of molecular and cellular function to whole plant performance in changing environments we use a wide suite of molecular and cell biology tools. This broad area underpins our fundamental understanding of the genetic regulation of plant responses to stresses. Using state-of-the art approaches (e.g., high-resolution microscopy, single cell

technologies) we draw on our expertise in plant cell biology, from plasmodesmata function, to aquaporins, retrograde and ROS signaling during stress, and microbial interactions, as well as genetics and gene regulation.

Success is reliant on continued infrastructure investment in plant culture, single cell imaging and other microscopy and the technical capabilities to support such landmark instrumentation.

Plant-Microbe Interactions

In recent years we have built our strength in biosecurity and pathogen surveillance with an emphasis on understanding mechanisms of plant-pathogen recognition and resistance, and the mechanisms determining symbiosis compared to pathogenesis. We seek to advance both fundamental and applied science on pathogen and symbiont recognition, immunity, and biosecurity.

Continued success will require strong industry collaboration, expanding to new crop systems, and integrating the plant/microbe biology with physiology. We have an enviable network of collaborations and partnerships in this space to draw on.

Continued investment in transformation facilities and plant growth facilities suitable for disease studies, including at 'cropatron' scale will be crucial.

Plants, Carbon and Water

This area has been a traditional strength in RSB that has resulted in seminal discoveries that are the basis of our understanding of carbon and water relations in plants. Our strengths in photosynthesis, respiration, and water relations are the foundation for improving plant performance whole plant and ecosystem level in managed and natural ecosystems.

By retaining and reinforcing our research leadership we can undertake cutting edge research in the intersection of plant modelling, physiology/ biophysics, and crop physiology and position our team to lead the engineering of more efficient plants and more accurate models.

We require field sites, a Simulation facility or Cropatron, to test plant traits under semi-controlled conditions as well an continue renewal of foundational equipment like LICOR tools, MIMS and isotope capabilities.

Plants are grown, examined, and manipulated –from soil to leaves and from molecular pathways to spectral imaging –with implications for future crops and biomes.

Future Crops and Biomes

By combining synthetic biology, genomics and our knowledge of plant physiology we aspire to design improved crops for future climates. This could be foods with improved nutrition or a smaller agricultural footprint, as well as novel applications of plant science, e.g., in remediation of soil and water contaminants, using current or new crop species. It will also involve taking a landscape or agroecosystem perspective, understanding production in a complex biotic and abiotic environment.

Success in this space will require strong relationships with non-traditional funding schemes, embracing industry, GRDC and philanthropic sources. Infrastructure needs will be continued and renewal investment in plant culture on campus as well as in a 'Cropatron' facility and transformation capabilities and continued support of native ecosystem field research and facilities.

Our strengths in photosynthesis, respiration, and water relations are the foundation for improving plant performance whole plant and ecosystem level in managed and natural ecosystems

Translating strategy into action

The research priorities exercise across the school was a productive one in itself and led to many interesting conversations within divisions. Reflecting on the exercise, several points arose repeatedly that present opportunities for follow up actions. By pursing these we seek to continue to reinforce momentum in the areas of emerging research activity and the cross divisional areas of interest. Key areas for ongoing attention include:

1. Infrastructure review: In our 'Where to Play and How to Win' discussions each division considered infrastructure requirements to maintain and develop research productivity and progress. In every case discussion touched on a) maintaining and renewing existing important infrastructure, b) specific infrastructure needs to support emerging research, including new technologies, and c) the importance of professional staff to maintain bespoke equipment and train new users. In addition, a need for redundancy in expertise, so that all expertise does not lie with a single expert, was frequently mentioned.
    - The RSB is currently undertaking an infrastructure review that will address these issues.
        - In the 2023 RSB Faculty Retreat the RSB Research Committee will lead a session to more fully identify specific infrastructure (equipment, data infrastructure and staff expertise) needs associated with the research areas identified in this report.
2. Securing non-traditional funding sources: The exercise we have just completed yielded initial lists of potential partners and in some cases funding sources to support our research. The RSB Research Committee will work over the coming year to support researchers to build on this list and to establish these connections. Those efforts will rely on continued support within the school for our Research Development Strategist position and effective liaising with ANU Business Development and Advancement teams.
    - In the 2023 RSB Faculty Retreat the RSB Research Committee will lead a session to identify next steps for making these connections.
        - In particular we are interested to develop a set of targets for potential philanthropic investment in each of our research priority areas and to develop pitches for philanthropic engagement with the support of the Advancement Team.

3. ‘Grass roots development’ of cross-divisional initiatives: The RSB Research Committee is particularly interested to foster cross-divisional initiatives and to ensure that these extend to our talented EMCR community (e.g. non-faculty who were less directly involved in development of this strategy document).
    - At the 2023 RSB Faculty Retreat the RSB Research Committee will lead a session to brainstorm activities that would best serve as a springboard for each of the three cross-divisional areas (and associated topics).
    - The ideas arising from these discussions will be used to guide investment of the Research Committee funds in 2024.
    - The Research Committee envisions that activities might include:
        - synthesis working groups leading to perspectives pieces or grant proposals,
        - invitations for guest speakers, establishing lunchtime discussion sessions,
        - visits to explore technologies or facilities at other institutions.
    - Funding applications for such activities will be taken from January 2024 and criteria will be designed to encourage applications with cross-divisional engagement of both group leaders and EMCR colleagues.
4. Telling our Stories: Through this exercise we were reminded that there are a remarkable array of stories we could be telling about our fascinating research projects and their diverse impacts. Making the sorts of connections and forays into non-traditional funding sources described above requires a different sort of communication than the academic paper writing where RSB Faculty traditionally excel. An important first step will be to develop widely accessible stories about our work and its impact.
    - Working with RSB Exec and Admin teams the RSB Research Committee will explore ways to support our researchers to produce materials reporting on our discoveries and research underway.
    - At a school level there is ample potential to revitalise our research presence on the webpage to make it easier for people outside the school and ANU to learn about who we are and what we do. By adding more personal touches and visuals about our work we hope to increase our capacity to attract new partners and students.
    - Finally, the research priority report itself provides a rich backbone on which to develop a prospectus for research directions aimed at distinct external audiences, (1) academic school review and (2) external community members in the form of a glossy publication.

RSB students share their research with the Chief Scientist of Australia, Dr. Cathy Foley. ***Photo credit Derek Collinge.***

Our research-led teaching embeds our leading research into curriculum with benefits to student experience and researcher development.

RSB Research Committee members, 2023

The RSB Research Committee is comprised of the Associate Director Research RSB, the RSB Research Development Strategist and two representatives from each of our three divisions. We also have an EMCR rep who rotates roughly on an annual basis, and we aim to shift that position among divisions each year. Representatives of the College Research Management and Business Development Teams are regular attendees at our monthly meetings.

All Research Committee members contributed to development of this document, working closely with their Divisional Heads and faculty.

- Prof Adrienne Nicotra, Associate Director Research RSB
- Dr Charlie Morgan, RSB Research Development Strategist
- Prof Ben Corry, BSB Representative
- Dr Adele Lehane, BSB Representative
- Prof Rob Lanfear, E&E Representative
- Dr Megan Head, E&E Representative
- Prof Bob Furbank, PS Representative
- Assoc Prof Caitlin Byrt, PS Representative
- Dr Ondi Crino, EMCR Representative (to mid 2023)
- Dr Joe Kaczmarski, EMCR Representative (from mid 2023)