

Online submission

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Australian Academy of Science EMCR Forum submission on the Pathway to Diversity in STEM Review: draft recommendations

The Australian Academy of Science's Early- and Mid-Career Researcher (EMCR¹) Forum welcomes the renewed focus on identifying systemic areas of STEM that need to change. The EMCR Forum has a strong focus on diversity and inclusion and represents over 6,000 of Australia's early- to mid-career researchers across STEM fields and thus offers a unique perspective from the future leaders of STEM research.

We strongly agree that a nuanced approach to diversity and inclusion in STEM will expand opportunities and facilitate progress in STEM by including people from historically underrepresented backgrounds. To create further impact, the EMCR Forum recommends that the following be addressed in the final report:

- The inclusion of a recommendation to redesign workload models
- The inclusion of definitions for diversity and intersectionality
- The inclusion of concrete recommendations, targeted to underrepresented groups and their intersectionalities
- The extension of incentives and accountability mechanisms in STEM-employing organisations to include workplace safety measures

Redesign workload models

An in-depth articulation of this point would benefit theme 4, Workplace, and would complement Recommendation 9a: *"STEM-employing organisations and governments should apply policies like anti-bullying and harassment, flexible work, **sustainable workload models** and pay transparency to create safe and inclusive environments. They should invest in programs to accelerate progress for underrepresented groups, like career development, fellowships, job customisation or mentoring"*.

The report does not mention the unsustainable workload in many STEM positions driven by unrealistic performance expectations (qualitatively and quantitatively). While this problem affects the whole STEM workforce, underrepresented groups suffer most due to their circumstances that impede their output relative to unimpeded colleagues. This can result in mental health and performance issues, burnout and leaving the STEM sector, either voluntarily or through being "pushed out".

Most workload models rely on rigid principles that no longer represent the needs and values of our workplaces, lack flexibility and are based on a one-size-fits-all approach, with only a superficial commitment to accommodate a diversity of needs. This creates a barrier to organisational change amplified by the common belief, popular among senior managers, that certain STEM careers (e.g. research, academic teaching) require a 24/7 commitment to succeed. With the increasing need for STEM skills in the foreseeable future and their

¹ An EMCR is an individual between 0 and 15 years (0-5 for early career, 5-15 for mid-career) of graduating from a PhD or equivalent (discounting career interruptions) who actively engages in research, either as a researcher or in a role that substantially supports the delivery of research and that requires substantial research training and experience. This includes researchers in academia, industry, government, public, commercial or not-for-profit sectors. Researchers without a higher degree but with equivalent professional experience can identify as EMCR, typically in circumstances of non traditional career pathways and/or of belonging to underrepresented intersectionalities.

expected shortage, it is imperative that Australian workplaces transition to innovative policies that attract and retain world-leading scientists and other STEM professionals, regardless of their intersectionality.

A definition of diversity and intersectionality

The report would benefit from the inclusion of a comprehensive definition of diversity. Not all underrepresented groups are listed (e.g., people with caring responsibilities, people of colour). There is no acknowledgement that some groups are dynamic and that life circumstances can lead to anyone belonging to an underrepresented group(s) permanently or for a period of time (e.g., a debilitating health condition that resolves after several years). We need a dynamic definition of diversity while simultaneously developing clear policies that assist people through appropriate rescaling of workload, expectations, benefits, and performance indicators.

The impact of overlapping disadvantage arising from intersectionality is not adequately addressed in this review. The Victorian government defines intersectionality as *“the ways in which different aspects of a person's identity can expose them to overlapping forms of discrimination and marginalisation. Aspects of a person's identity can include social characteristics such as: Aboriginality, Gender, Sex.”* We refer the panel to recent research presenting data-driven evidence and discussion on intersectional disadvantages in STEM.²

Concrete recommendations, targeted to underrepresented groups and their intersectionalities

The draft recommendations demonstrate a thorough and commendable focus on Women's and First Nations people's initiatives while only briefly mentioning a subset of other underrepresented groups and with no mention at all of intersectionality. It falls short of thoroughly acknowledging and tackling the unique challenges encountered by LGBTQIA+ individuals or those with disabilities within STEM. We recommend including recognition of the perspectives of underrepresented groups with intersectional identities and their representing organisations. Neglecting to explicitly tackle the challenges they face and implicitly absorbing them into other programs without specifying their unique needs could detrimentally impact their pursuit of STEM careers.

We support the introduction of recommendations on:

- Active engagement with intersectional communities (e.g., through consultations), to initiate a two-way dialogue within an environment of acceptance and respect to achieve lasting systemic change.
- Providing consistent support to underrepresented groups and their intersectionalities throughout their STEM journey, from early education to long-term retention. This requires creating a culture and environments that value and support underrepresented people while providing equitable and accessible opportunities for advancement. This also requires adequate resourcing. For example, lack of funding should not be an excuse to exclude a researcher with a disability from getting the help of a research assistant.
- Introducing structural changes in the selection of senior leadership/boards of workplaces that employ STEM professionals. If there is no diversity at the senior and board levels, it will likely never permeate to other levels.
- Establishing leadership and mentorship opportunities, showcasing role models belonging to different intersectionalities and diverse paths to success.
- Providing a vision and a direction for actions that impact multiple intersectionalities such as promoting a digital-first approach in designing events and re-evaluating the need for travel. This would benefit several underrepresented groups, including people with disabilities, people with parental and caring responsibilities, LGBTQIA+ people (who experience safety issues in certain

Erin A. Cech, The intersectional privilege of white able-bodied heterosexual men in STEM. *Sci. Adv.* **8**, eabo1558 (2022). DOI:[10.1126/sciadv.abo1558](https://doi.org/10.1126/sciadv.abo1558)

countries), people from low socio-economical background and people in regional Australia (due to travel costs).

- Recognising and rewarding the work of under-represented groups and individuals who are leading diversity, inclusion, and community-building initiatives in STEM.
- Advancing the recognition of Indigenous Knowledges in STEM. This is key to creating meaningful inclusion and demonstrating that we value these ways of knowing and knowledges. In so doing, we should not be simply extracting knowledge but uplifting and authentically collaborating with First Nations communities.

Extension of incentives and accountability mechanisms to include workplace safety measures

Objective 9 is about the implementation of incentives and accountability mechanisms in STEM workplaces to increase diversity and inclusion. We recommend extending such accountability measures to other workplace safety issues, such as workload, psychological safety, and cultural safety. In this context, we recommend:

- Co-design of workplace safety in consultation with underrepresented groups.
- Strengthening the proposed central office and independent council by creating a national-level monitoring framework to identify and correct negative trends. This would provide the data and enable all levels of government to work together to plan the STEM workforce and commit funding to focus on diversity and safety. Annual surveys in STEM education and workplaces would function as a "health check" and clearly indicate which sectors or organisations need improvement. A coordinated national system would eliminate the problem of individual workplaces engaging in diversity box-ticking exercises.
- STEM-employing organisations and funding bodies should recognise all forms of bullying, harassment and discrimination as scientific and academic misconduct. This type of misconduct would be a reason to deny or withdraw funding. Furthermore, creating accountability on meeting workplace diversity and safety standards as a requirement for STEM organisations to access public funding would be a good mechanism to ensure results.

Prepared on behalf of the EMCR Forum by the Executive team. To discuss or clarify any aspect of this submission, please contact Dr Mari Kondo, EMCR Program Manager at emcr@science.org.au