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Towards an Inclusive and Representative Academic Landscape

LINN LEPPERT*, KATALIN SOLYMOSI** & YVONNE GALLIGAN†

*MESA+ Institute for Nanotechnology, University of Twente, Enschede, the Netherlands. Email: l.leppert@utwente.nl

**Department of Plant Anatomy, ELTE Eötvös Loránd University, Budapest, Hungary

†Equality, Diversity and Inclusion Directorate, Technological University Dublin, Dublin, Ireland

This article is a summary of a panel discussion entitled 'Towards an inclusive and representative academic landscape', held at the Building Bridges Meeting of Academia Europaea and the Young Academy of Europe on 26 October 2022. The panellists were Professor Yvonne Galligan, director of Equality, Diversity and Inclusion and Professor of Comparative Politics at the Technological University Dublin, Dr Katalin Solymosi, plant biologist, assistant professor at Eötvös Loránd University and vice-chair of the Young Academy of Europe, and Professor Stephen Curry, Assistant Provost for Equality, Diversity and Inclusion and Professor of Structural Biology at Imperial College London. Dr Linn Leppert, Associate Professor of Computational Chemical Physics and board member of the Young Academy of Europe chaired the discussion.

Introduction

The role of researchers and educators in academia is crucial, as these people are responsible for performing innovative and impactful scientific research, as well as educating future generations of researchers, entrepreneurs, policy- and other decision-makers (Kyvik 2013; Nogrady 2023). However, a lack of equality, diversity, and inclusion (EDI) in academia can limit the recruitment, recognition and retention of talented individuals, leading to missed opportunities for significant scientific and

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societal progress (Directorate-General for Research and Innovation 2021; European Institute for Gender Equality 2022).

The problem of a lack of EDI in academia is fed forward to future generations because of the limited diversity of visible role models for the current crop of students (who may themselves, because of access barriers, not be representative of the populations from which they are drawn). Progress has been made in the last few years, and diversification and internationalization efforts have significantly changed the demographics of students and staff at European universities (Directorate-General for Research and Innovation 2021; European Institute for Gender Equality 2022). Nonetheless, there is still a profound lack of diversity, in particular in university leadership positions (European University Association 2022), and an insufficient focus on equality and inclusion of underrepresented groups in academia.

The lack of diversity in academia has a variety of adverse consequences. For example, a number of studies have shown that when underrepresented groups are absent from a field, it can perpetuate stereotypes and biases about those groups (Nosek et al. 2009; Llorens et al. 2021; Markle et al. 2022). This can limit the types of research questions that are asked, the types of methodologies that are used, and the types of solutions that are proposed. In addition, inattention to EDI in academia can limit the ability of underrepresented groups to access educational and career opportunities, which can lead to missed opportunities for scientific and societal progress (Baumeister et al. 2002). Finally, universities are educating the decision- and policy-makers of the future, implying that problems with EDI are self-propelling and unlikely to decline 'by themselves'.

However, it is important to note that diversity strategies have to go beyond hiring or recruitment strategies. While these strategies are important, they are not enough on their own (Milkman et al. 2015). Regardless of whether students or staff at universities are concerned, the internal dynamics of inequality at universities can create hostile environments for minoritized groups. The retention of people from these groups by creating an inclusive environment needs to be a core goal of EDI strategies and has to be ensured by the institutional leadership (Wolbring and Lillywhite 2021).

Many knowledge institutions have recognized the lack of diversity as a problem and have developed actionable EDI plans to counteract its effects. Two of the panellists in this discussion session titled 'Towards an inclusive and representative academic landscape', Professor Yvonne Galligan and Professor Stephen Curry, have been deeply involved in the development of such plans. The panel discussion was aimed at broadly mapping out the current landscape of measures for improving EDI at European universities, identifying roadblocks, and providing examples for best practices than can be implemented by universities and research institutes.

In the next section, we start our discussion with an overview of gender representation in the current academic landscape of Hungary, for which extensive data on the effects of female underrepresentation on wage and recognition gaps

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between male and female researchers at universities and research institutes exists. While the situation in Hungary is not necessarily representative of that in other European countries, we note that female representation in university leadership positions is among the lowest in Western European countries such as Germany, the Netherlands, and Belgium (Directorate-General for Research and Innovation 2021). For our summary of best practices, in the third section, we primarily draw on the examples of the UK and Ireland, where almost two decades of experience with the Athena SWAN scheme and gender equality and EDI plans allow for the identification of measures with proven efficacy. In the fourth section, we briefly discuss the problem of resistance against EDI plans, and we summarize our main conclusions in the fifth section.

Gender Wage Gaps and Female Representation in Academia in EU13 Countries:[a] The Case of Hungary

In 2018 (Alpár et al. 2018, 2019) and 2021 (Németh et al. 2022), the Hungarian Young Academy conducted comprehensive surveys among early-career researchers (defined as researchers below the age of 45) in academia. Both surveys collected responses from >1000 respondents. The second survey was more detailed and contained data related to salaries and publication practices. This study also covered all early academic career stages and scientific areas and included 45% female and 55% male respondents. The results showed a strong gender wage gap, which was significant, even after normalization of the data with respect to factors such as academic rank, scientific performance, discipline, and leadership position. The survey found a clear correlation between the appearance of the wage gap and the age of respondents. In the traditional family model that is prevalent in Hungary, women are expected to take over the majority of child-caring responsibilities and stay at home for longer periods (parental leave can be up to three years per child) and men are expected to act as financial providers.

Additionally, the survey analysed publication records of respondents and found that only women with children under the age of ten publish less than men. Moreover, the data showed that this publication gap – and potentially other, not studied factors, such as lower visibility of female researchers – later resulted in a citation gap between men and women, because women who did not publish during this period got fewer citations than men.

It is important to note that female representation in academia and engineering in Hungary is among the lowest within Europe (below 35%; Eurostat 2023). This might be correlated with the strong traditional family model and the long parental break and is in strong contrast with data observed in other EU13 countries, in which the representation of women is relatively high in academia. However, salaries of researchers at universities and in research institutes are comparably low in all EU13 countries (Eurostat 2022), which complicates the comparison with other European countries.

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Identifying Best Practices

The case study of Hungary described above highlights that a thorough analysis of the underlying dynamics of inequality is crucial for developing tailored responses, and that systemic and cultural changes promoting equality and inclusion sometimes even beyond academia are important to help underrepresented minorities to thrive in the scientific landscape. The responsibility for implementing systemic changes and SMART (Specific, Measurable, Achievable, Relevant and Time-bound) plans for inclusion rests with the dominant group, i.e., those who make decisions in universities. The implementation of these plans requires full commitment, implementation, and accountability at all levels of the university. While networks of underrepresented groups are important for crystallizing their priorities and shaping institutional discussion, these groups should not be expected to fit into structures that do not currently represent them (League of European Research Universities 2019).

Equally important to this shared responsibility approach, where every student and staff member has a role to play in promoting EDI, are formal oversight processes and active involvement of senior university leadership in delivering the EDI strategy. An important point highlighted throughout the panel discussion was that addressing EDI challenges is complex and requires multifaceted approaches. Here we mention several initiatives undertaken by Imperial College London to promote EDI, including shaping conference policies to ensure gender balance, the need for data-driven approaches and listening to staff experiences in developing action plans, introducing reverse mentoring schemes for senior leaders, providing appropriate and accessible facilities such as toilets, and examining the university's historical links to British colonialism (Imperial College London 2018; Ball 2022).

Measurable outputs and data availability are particularly important in promoting diversity in academia. For example, at Imperial College London, external benchmarking schemes, requiring extensive data collection from the institutions were used to hold the institution accountable and create deadlines. Specific measures are now being implemented around recruitment, including a policy called 'Know Your Pool' which encourages talented women to apply to the university. The policy involves extensive efforts at identifying suitable candidates and diversifying the recruiting panels to include women. Interview processes have been re-engineered to be non-adversarial and to explore the candidate's contributions to the department beyond their research. Data collection is intensive and involves the determination of gender and ethnicity ratios, who applies, who gets short-listed and hired, grievances and disciplinary issues, admissions, and graduation rates. The data collected have revealed gaps and underrepresentation in certain ethnic groups, and highlighted the need for more interventions in areas such as engineering, physics, and computing, which are still male-dominated. The success of these measures has been shown in some departments and in recruitment numbers. However, the challenges do vary between disciplines, and the institution continues to work towards making the academic landscape more inclusive and representative.

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A demonstrable commitment from the highest decision-making levels of the institution is crucial to making change happen. One example given by panellist Professor Yvonne Galligan was how the TU Dublin achieved a gender-balanced governing body and senate, which then led to the expectation that every decision-making committee of the university would be gender-balanced. Although there was resistance at first, including from women who viewed the initiative as a tokenistic gesture, it has now died away. Gender balance in the Academic Council, followed by a gender-balanced distribution among Heads of Schools after a reorganization, has brought about more inclusive decision-making teams. It is now unthinkable for TU Dublin to have a decision-making group solely composed of one gender or identity.

Another topic of discussion was the European Council's requirement for institutions applying for Horizon or European funding to have (gender) equality plans in place. It is highly important to implement unbiased control mechanisms to ensure that these equality plans do not remain only tick-box exercises to secure EU funding, but receive enough attention, tailored and dedicated funding and human resources to initiate real changes in academia in countries where EDI policy measures have not been adequately addressed institutionally before (Clavero and Galligan 2021). In this respect, learning from universities and research institutes across Europe, and working with policymakers can help create change in such situations. Policymakers can exert leverage on the sector to change expectations for higher education.

The panellists also discussed the need for social and structural changes to promote gender equality, including the availability and affordability of childcare facilities. They also discussed the need for institutional measures to ensure that maternity leave is respected, and that re-integration into the academic workforce on return is supported in a positive manner.

Regarding research assessment, the panellists highlighted the differences between the number of papers published by male and female researchers and differences in how often these papers are cited (Dion et al. 2018; Larivière et al. 2013; King et al. 2017). They suggested that a change in mindset is needed to address the issue of gender inequality in research funding. They suggested further that consideration should be given to parenting times and other times spent on care responsibilities which disproportionately affect female researchers (Swider-Cios et al. 2021), and highlighted that research excellence is a question of quality and impact, not quantity.

Finally, the panellists discussed the variability in teaching activities across different European countries and universities, which should also be taken into consideration in promoting gender equality.

In conclusion, the panellists suggest that creating a more inclusive and representative academic landscape requires extensive data for identifying tailored measures that address various areas such as recruitment, promotion, maternity leave, and institutional culture. A demonstrable commitment from the highest decision-making levels of the institution is critical to making change happen. Learning from other universities and working with policymakers can also help create change in academia.

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Resistance against Implementation of Change

The panel also addressed the topic of resistance towards discussions on EDI inside and outside of academia. One of the examples cited was a recent survey on EDI, conducted at several Dutch universities, which was intentionally hijacked by internet trolls to render the data unusable (U-Today 2022). Another issue discussed was how political players are politicizing the conversation on EDI for their own purposes. The panellists discussed how to deal with these types of resistance, emphasizing the importance of having constructive conversations and the need for universities to stand for free speech. The panellists agreed that universities cannot shy away from these conversations and that those who work in EDI should build capacity throughout the university and among all staff and students to enable self-reflection and critical analysis. Overall, the panel discussion highlighted the importance of having respectful and constructive conversations on EDI in universities and research institutions and the need to address resistance in a proactive and reflective manner.

Summary

The panel discussion 'Towards an inclusive and representative academic landscape' stressed that bringing social justice into academia is necessary for achieving excellence. Therefore, institutions should incorporate strategic goals centring on equality, diversity, and inclusion in their strategies. To achieve this, collecting data to identify the real problems and areas of underrepresentation is crucial. The panellists suggested that institutions should take measures in response to these issues, explicitly address accountability in their EDI plans, and involve all students and staff members in promoting EDI, while firmly placing the burden of responsibility and accountability on decision-makers and the dominant groups.

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Note

a. EU13 designates the group of member states admitted to the EU since 2004: Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic, Slovenia, Bulgaria, Romania and Croatia.

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References

Alpár D, Dékány É, Máté Á, Neumann E, Toldi G, Barnaföldi GG, Kubinyi E, Balázs M, and Solymosi K (2018) Fiatal kutatók Magyarországon – felmérés a 45 év alatti kutatók helyzetéről, karrierterveiről, nehézségeiről. Survey report. Available at https://mta.hu/data/dokumentumok/fiatal_kutatok_helyzete_felmeres_eredmeny.pdf (accessed May 2023).

Alpár D, Dekany E, Máté Á, Neumann E, Toldi G, Barnaföldi GG, Kubinyi E, Balázs M, and Solymosi K (2019) Fiatal kutatók Magyarországon – felmérés a 45 év alatti kutatók helyzetéről. *Magyar Tudomány* **180**, 1064–1077, doi: 10.1556/2065.180.2019.7.13.

Ball P (2022) Imperialism's long shadow: the UK universities grappling with a colonial past. *Nature* **610**, 593–596.

Baumeister RF, Twenge JM and Nuss CK (2002) Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology* **83**, 817–827.

Clavero S and Galligan Y (2021) Delivering gender justice in academia through gender equality plans? Normative and practical challenges. *Gender, Work & Organization* **28**, 1115–1132.

Dion ML, Lawrence Sumner J and McLaughlin Mitchell S (2018) Gendered citation patterns across political science and social science methodology fields. *Political Analysis* **26**, 312–327. Available at https://www.cambridge.org/core/journals/political-analysis/article/gendered-citation-patterns-across-political-science-and-social-science-methodology-fields/5E8E92DB7454BCAE41A912F9E792CBA7 (accessed May 2023).

Directorate-General for Research and Innovation (European Commission) (2021) *She Figures 2021: Gender in Research and Innovation: Statistics and Indicators*. Publications Office of the European Union. Available at https://ec.europa.eu/research-and-innovation/en/knowledge-publications-tools-and-data/interactive-reports/she-figures-2021 (accessed May 2023).

European Institute for Gender Equality (2022) *Gender Equality Index 2022: The COVID-19 pandemic and care*. Available at https://eige.europa.eu/publications/gender-equality-index-2022-covid-19-pandemic-and-care (accessed May 2023.

European University Association (2022) *Women in University Leadership – Some Progress but More to Do*. Available at https://www.eua.eu/news/841:women-in-university-leadership-%E2%80%93-some-progress-but-more-to-do.html (accessed May 2023).

Eurostat (2022) *New Indicator on Annual Average Salaries in the EU*. Available at https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20221219-3 (accessed May 2023).

Eurostat (2023) *Proportion of Women Scientists and Engineers, 2021*. Available at https://ec.europa.eu/eurostat/documents/4187653/16022092/10.02-girls-science-v2.png/6924908d-bc07-e80d-16cd-1f5655660cb9?t=1675950257881 (accessed May 2023).

Imperial College London (2018) *Equality, Diversity and Inclusion Strategy*. Available at https://www.imperial.ac.uk/admin-services/equality/governance/strategy/ (accessed May 2023).

King MM, Bergstrom CT, Correll SJ, Jacquet J and West JD (2017) Men set their own cites high: gender and self-citation across fields and over time. *Socius* **3**, 2378023117738903.

Kyvik S (2013) The academic researcher role: enhancing expectations and improved performance. *Higher Education* **65**, 525–538.

https://doi.org/10.1017/S1062798723000108 Published online by Cambridge University Press

Larivière V, Ni C, Gingras Y, Cronin B and Sugimoto CR (2013) Bibliometrics: global gender disparities in science. *Nature* **504**, 211–213.

League of European Research Universities (2019) *Equality, Diversity and Inclusion at Universities: The Power of a Systemic Approach*. Available at https://www.leru.org/publications/equality-diversity-and-inclusion-at-universities (accessed May 2023).

Llorens A, Tzovara A, Bellier L, Bhaya-Grossman I, Bidet-Caulet A, Chang WK ..., Dronkers NF (2021) Gender bias in academia: A lifetime problem that needs solutions. *Neuron* **109**, 2047–2074.

Markle RS, Williams TM, Williams KS, deGravelles KH, Bagayoko D and Warner IM (2022) Supporting historically underrepresented groups in stem higher education: The promise of structured mentoring networks. *Frontiers in Education* **7**, 674669.

Milkman KL, Akinola M and Chugh D (2015) What happens before? A field experiment exploring how pay and representation differentially shape bias on the pathway into organizations. *Journal of Applied Psychology* **100**, 1678–1712.

Németh B, Munkácsy B, Vida ZV, Fröhlich G, Hatvani IG, Tóth G Solymosi K, Máté Á, Lőrincz L and Lengyel B (2022) *A fiatalok helyzete az akadémiai pályán: Fiatal Kutatók Kérdőív: Az FKA 2021-ben készült felmérésének eredményei*. Available at https://mta.hu/fka/elkeszult-a-fiatalok-az-akademiai-palyan-2021-cimu-felmeres-kutatasi-jelentese-112472 (accessed May 2023). doi: 10.36820/fka.2022.

Nogrady B (2023) Academic employers seek research experience and teaching skills. *Nature*, doi: 10.1038/d41586-023-00630-z.

Nosek BA, Smyth FL, Sriram N, Lindner NM, Devos T, Ayala A ..., Greenwald AG (2009) National differences in gender–science stereotypes predict national sex differences in science and math achievement. *Proceedings of the National Academy of Sciences* **106**, 10593–10597.

Swider-Cios E, Solymosi K and Srinivas M (2021) Why science needs a new reward and recognition system. *Nature* **595**, 751–753.

U-Today (2022) *U-today stops data collection for diversity survey*. Available at https://www.utoday.nl/news/72029/u-today-stops-data-collection-for-diversity-survey (accessed May 2023).

Wolbring G and Lillywhite A (2021) Equity/equality, diversity, and inclusion (EDI) in universities: the case of disabled people. *Societies* **11**, 49.

About the Authors

Linn Leppert is Associate Professor of Computational Chemical Physics at the University of Twente, the Netherlands. After she received her PhD from the University of Bayreuth in 2013, she spent two years at the University of California, Berkeley, with a Feodor-Lynen fellowship of the Alexander-von-Humboldt foundation. Since 2017, she has been leading a research group focused on using first-principles numerical modelling techniques for describing, understanding, and predicting electronic excitations in complex light-converting systems. Since 2021, she has been member of the board of the Young Academy of Europe.

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Katalin Solymosi is Assistant Professor of plant biology at Eötvös Loránd University (ELTE), Hungary. She received her PhD at ELTE in 2005, and has been teaching plant-biology related subjects at ELTE, at Semmelweis University (Hungary) and as invited lecturer at the University of Burgundy (France) since then. Her research is focused on medicinally important metabolites produced by plastids, natural food colourings, as well as the effect of different stressors (e.g. drought, salt stress) on plastid structure and function. She is founding member and previous co-chair of the Hungarian Young Academy, and vice-chair of the Young Academy of Europe. She is strongly involved in the preparation of surveys, analyses and advocacy related to increasing equity, diversity and inclusion in academia.

Yvonne Galligan is Director for Equality, Diversity and Inclusion, and Professor of Comparative Politics in Technological University Dublin. She has held a range of leadership posts in professional associations, and currently chairs the Royal Irish Academy's Ethics, Politics, Law and Philosophical Studies Committee. Throughout her career, she has supported gender equality and inclusion in academia and public life. She chaired the Fianna Fáil Markievicz Commission (2015) on measures to implement the candidate gender quota. Prior to that appointment, she was a member of the UK Independent Commission of Inquiry on The Consequences of Devolution for the UK House of Commons (the McKay Commission, 2013). She is a Fellow of the Academy of Social Sciences, honorary Fellow of Trinity College Dublin, and recipient of an honorary doctorate in social science from the University of Edinburgh.

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