Beyond the Usual Species: Cultivating Diversity in Biology Award Nominations

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Abstract

Improving diversity among award recipients is a key focus in the scientific community. The Society of Experimental Biology, which historically awarded over 65% of its prizes to men, established the Awards Nomination Taskforce in 2023 to proactively improve representation amongst its nominations and awardees in terms of both gender balance and underrepresented groups. The taskforce identifies and nominates scientists from diverse backgrounds, with nominations reviewed by an independent panel of judges. Here, we discuss the motivations and significance of forming such task forces alongside the outcomes of the first nominations in 2023-2024. From our first-year results, we conclude the activity of the task force was successful in recognising marginalised individuals and improving diversity among award recipients. We also highlight future goals for the task force and how its activities expand to the wider scientific community.

Keywords: nomination; awards; diversity; biology prizes; prizes, science awards.

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Introduction

The Society for Experimental Biology (SEB) is an international learned society for animal, plant and cell experimental biologists based in the United Kingdom. With over 100 years of existence, SEB has been connecting and awarding scientists, supporting and promoting experimental biology within the community and the broader public and demonstrating impact in tackling real-world issues. SEB is committed to diversity, equality and inclusion (DEI) and has shown leadership in DEI by launching an Awards Nomination Task Force to highlight the breadth of diverse talent across the scientific community. The primary aim of the task force is to ensure that members of the experimental biology community who, to date, have been underrepresented amongst award recipients are recognised and nominated for bioscience awards. The task force's work increases the nominations for these awards, ensuring there is a diverse pool of nominees for consideration without impacting the merit or judging criteria for these awards. By broadening the pool of nominees and, therefore, the diversity of potential award recipients, the SEB aims to ensure equitable access to the awards and the honours and benefits from the opportunities that follow, such as speaking engagements, collaborations, and outreach. This will showcase the diversity of the bioscience community and celebrate visible role models to inspire future generations of biologists. With a focus on diversity, the task force seeks to address the underrepresentation of marginalised groups in science awards and ultimately influence the diversity of awardees in the coming years. The Awards Nomination Task Force began this work in 2023, starting with the SEB's own annual awards.

Origins and rationale for the Task Force

The concept of the SEB Awards Nomination Task Force emerged during the Society's Centenary celebrations in 2023. The idea was inspired by a conversation with physicist Dr Jess Wade (personal communication), a leading advocate for diversity in STEM, who has contributed a significant amount of work in ensuring Wikipedia biographies better represent the diverse make-up of the scientific community (Wade and Zaringhalam, 2018). During a collaboration on an edit-a-thon event aimed at increasing the visibility of biologists from historically marginalised groups on Wikipedia, it became clear that recognition is a key factor in ensuring fair representation. Wikipedia's subjective "notability criteria" make it difficult to establish biographies for individuals with little to no public accolades (Wade and Zaringhalam, 2018), limiting opportunities for women and scientists from other

marginalised groups being discovered and having their work recognised by both scientists and non-scientists alike (Thompson and Hanley, 2018). Mirroring societal biases, a systemic lack of award nominations for marginalised scientists further exacerbates their underrepresentation (Le et al., 2021). With these insights, the SEB realised that one of the ways to drive change was to nominate more scientists from marginalised communities for awards.

The SEB saw the potential to adapt successful diversity initiatives from other scientific fields to the bioscience community. Drawing inspiration from the successful model implemented by the American Geophysical Union's Space Physics and Aeronomy (SPA) Nomination Task Force (https://connect.agu.org/spa/committees/ntf), SEB decided to establish its own task force with a similar mission. The creation of the Awards Nomination Task Force represents yet another step in the SEB's ongoing journey towards greater inclusivity.

The SPA Task Force, formed in 2017, aimed to increase the representation of women and international scientists in space physics awards (Bashir et al., 2023). Their structured approach has resulted in over 50 nominations for various awards and fellowships, contributing to the diversity of award recipients. Learning from this, the SEB tailored its task force to focus on the biosciences, aiming for a similar impact across all its awards. However, the SEB also recognised that simply diversifying nominations would not be enough; the entire awards process needed scrutiny and reform. While the SEB awards have contributed to the recognition of excellence within the field, the SEB acknowledges that the award process has not always been inclusive. Since 2021, the SEB has been reassessing the criteria for all its awards to ensure they reflect the modern scientific landscape. As such, the SEB sought to make its application, decision, and award processes more transparent by providing easily accessible and clear indications of the criteria necessary for each award and outlining the parameters by which each award would be judged (https://www.sebiology.org/grants/award-listing/seb-plenary-lecture-award.html).
Other changes included expanding eligibility criteria to account for career breaks and transitions, thus offering more flexibility for individuals with non-traditional career paths.

Why the Task Force is Needed

Forming the SEB Awards Nomination Task Force is crucial in addressing historical imbalances in experimental biology. The SEB has a long-standing tradition of

honouring excellence in scientific research. Founded in 1923, the Society for Experimental Biology has been at the forefront of advancing biosciences for over a century. The SEB's awards have long served as a platform for recognising outstanding contributions to the field, with the first *Annual Lectures* introduced in 1969. These lectures, delivered by distinguished members of the Society, have grown to include the *G.P. Bidder Lecture*, the *Woolhouse Lecture*, and the *Cell Annual Lecture.* Over the years, SEB has also instituted other prestigious awards, such as the *President's Medal*, introduced in 1985, which honours the next generation of experimental biologists, and the *Irene Manton Poster Prize,* introduced in 1974, to recognise exceptional poster presentations by young scientists at the annual conference, and the *Young Scientist Award Session (YSAS)* established in 2002, to offer a platform for early careers researchers to showcase their work. In 2024, an Outreach, Education and Diversity Award was created, which recognises work in the field of Experimental Biology in these areas, the award includes a plenary lecture as part of the prize.

However, recent internal reviews of award data from 2012 to 2022 have shown a significant gender disparity, with 65% of the SEB's awardees being male. This underrepresentation of women, as well as the absence of data on ethnicity, highlights the urgent need for a more proactive and transparent approach to nominations. The SEB Awards Nomination Task Force aims to address this inequality by actively identifying and nominating individuals from underrepresented groups, including women, international scientists from ethnic minorities, and those from resource-limited settings. The task force also seeks to ensure that the nomination process itself is transparent, inclusive, and free of bias. By doing so, SEB hopes to contribute to long-term changes in how awardees are selected, with the ultimate goal of making awards reflective of the diverse global experimental biology community.

Task force organisation

Task force members are placed into one of two principal roles: a lead nominator or an assistant nominator (Figure 1). A lead nominator from the task force prepares the individual award package, working along with the assistant nominator and the nominated scientist to be put forward for the specific named prize and lecture. Assistant nominators provide support to the lead nominator in various tasks along the course of the process, such as the preparation of documentation. Other task force members can also contribute to the work outside of these assigned roles.

Interested persons act as proofreaders and scribes and provide elements of organisational and administrative support. One further detail about the task force is its internal commitment to diversity. Members of the task force come from 5 countries, representing a wide geographical spread, and encompassed all career stages ranging from graduate student to professor, as well as coming from different areas of experimental biology (animal, cell, plant biology). Furthermore, the task force comprised both members and non-members of the society. It is hoped that fostering such diversity on the task force leads to greater diversity in the nominees the task force puts forward. At present, the task force receives award nominations from a portal on the SEB webpage and from the task force members. These members are matched to suitable awards, and the nomination packages are prepared by the deadline (Figure 1).

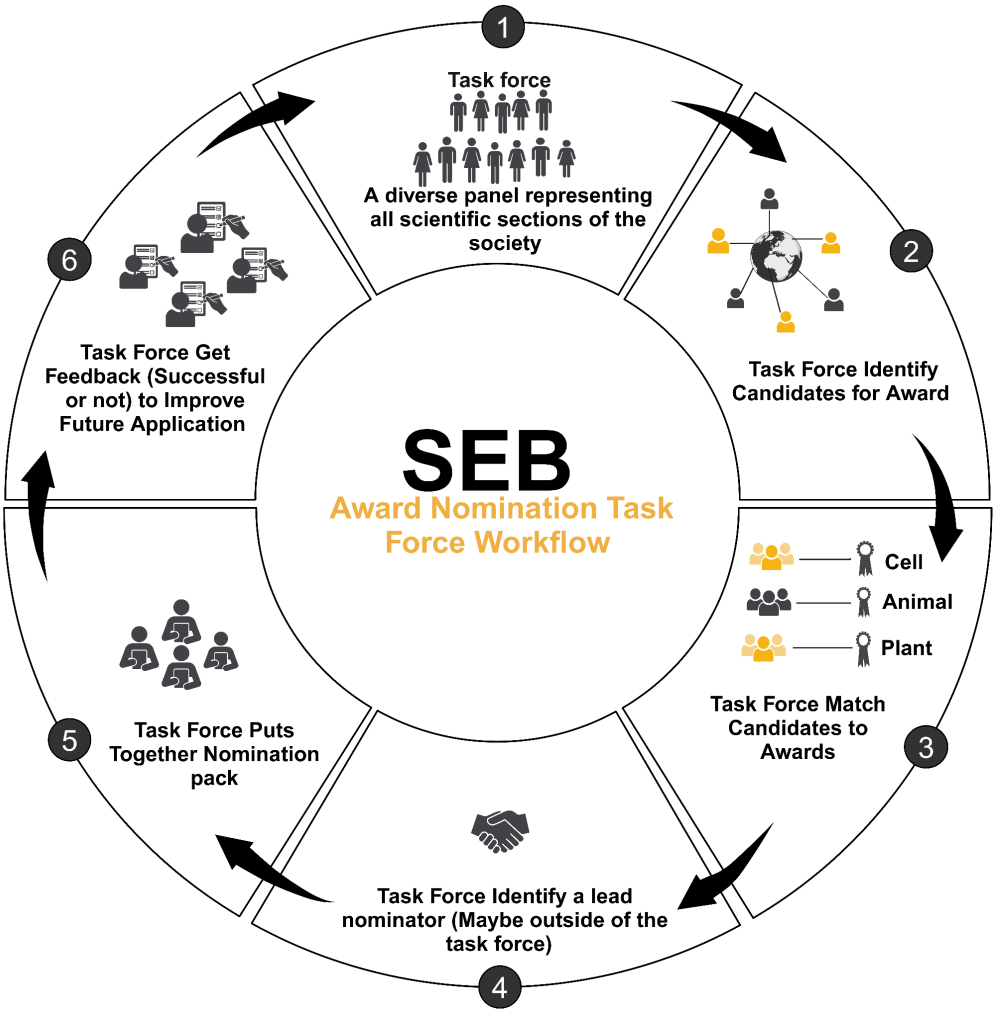

Figure 1- SEB Nomination Taskforce Workflow. The SEB award nomination task force workflow, follows 6 key stages: 1. Initial Task Force Formation, 2. Candidate

Identification, 3. Award Matching, 4. Lead Nominator Selection, 5. Nomination Package, 6. Feedback Collection. Each stage is briefly described in the figure. Created in BioRender. Audu, D. (2025)

The submitted nominations are reviewed by judging panels in each of the award areas (animal, cell and plant biology). Importantly, judging panels remain independent and consist of the section chair, convenor and other members of the section; in any case, at least three SEB members and the respective section chair constitute the panel, but no members of the task force are involved in the judging process. The nominees were assessed on their scientific excellence and impact, emerging leadership skills in the scientific community, contribution to the SEB or experimental biology community, outreach and advocacy activities, and ability to inspire the next generation.

First-year results

In the first year, the SEB nomination task force put forward nine names of persons to be nominated for the society's awards. Of the nine individuals, all came from diverse geographical backgrounds, with persons currently working in the United States, United Kingdom, Nigeria, and Brazil (Figure 2). Four of the nominees were women, and the remaining five were men. The task force proposed nominees for each area of expertise of the SEB: animal, cell, and plant biology. The task force proposed a nominee for the President's medal and Plenary lecture awards for almost all prizes. The preparation of award nomination packages started in June 2023 and was completed by the deadline date of the end of September 2023.

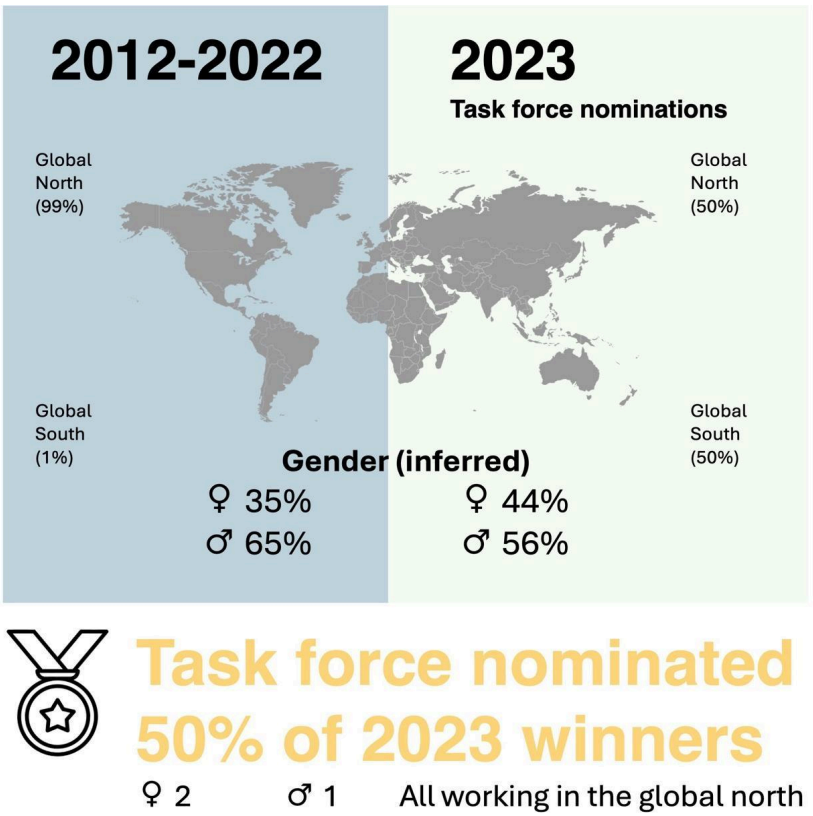

Figure 2- Impact of the Awards Task Force on Nomination Trends (2012–2023). SEB prize (plenary and President's medal) nominations received from 2012-2022 compared to the 2023 nominations proposed by the SEB award nomination task force. Percentages of nominations received for persons from both the Global North and Global South are in each panel, along with the inferred gender of nominees for each time period. Since biographical information of nominees is not available, we used genderize.io to infer the gender of nominees based on publicly available name and/or pronoun data as self-reported data on gender identity or biological sex was not available. Prior to the establishment of the Awards Task Force (2012–2022), 100% of nominees were based in the Global North (left). Following the introduction of the Task Force, 50% of nominations were for individuals based in the Global North and 50% Global South (right). Gender representation also changed, with an increased percentage of women nominated by the task force (44%) in 2023 compared to 35% women nominees between 2012–2022. In 2023, 50% of the SEB award winners were nominated by the taskforce, with 2 being women and one man, with all the awardees working in the global north at the time of the award.

Therefore, the most tremendous success came when the task force's nominees won half of the six prizes offered by the Society in 2024. These medals and awards were presented to the winners at the SEB Annual Conference held in Prague. The profiles of the persons nominated demonstrate that science from persons not traditionally represented in the scientific award space must now be centred. Clearly, the proposed individuals had careers and scientific backgrounds that met the rigour and excellence expected for these awards. Research has shown that winning one scientific prize makes it more likely for the winner to go on to win another award through increased opportunity (Ma and Uzzi, 2018), leading to improved visibility within the scientific community (Holgate, 2017). Sometimes monetary gain is obtained from prize-winning, and this can boost an individual's profile and support their career at a pivotal stage (Jin et al., 2021), with that said, it is also well established that there is an awarding gap in terms of prize monies and gender in the sciences. The SEB task force has, therefore, taken the first stride towards achieving its primary goal of rewarding individuals from diverse backgrounds for the excellent scientific research they undertake and, in doing so, moved towards a more inclusive practice of awarding prizes within the field.

Future Direction

After one successful iteration of the task force, the SEB plans to broaden its reach by helping the nomination of awards for other esteemed bioscience societies. The task force has entered into its second round of SEB awards nominations, and the outcome is still awaited. So far, some improvements and streamlining have already occurred during the second iteration of the process. These changes include clearly outlining the roles of each individual on the nominating team, preparing standard template emails to potential awardees, and establishing a timeline for the award session, which acts as a standard operating procedure. Additionally, the names of nominees who were not successful in the prior year will be put forward again with the nominee's agreement, allowing the task force to make necessary updates and additions to the package to reflect the nominees' recent achievements. Furthermore, to better align nominations with the expectations of the judging panel, the task force has solicited feedback from the judging panels on the quality and appropriateness of nominees for the respective awards. In time, the task force will be able to provide the public with information on effective nomination package preparation and submission.

The expansion of the task force to other bioscience awards seeks to promote the greater inclusion of diverse scientists and foster partnerships with other societies, ultimately creating a more extensive pool of potential nominees. As mentioned, increasing the pool of prospective nominees will only broaden the opportunities for underrepresented minorities to be recognised in the award schemes of the SEB and other societies. Additionally, the task force continually seeks to enhance the participation of scientists from under-represented groups in the task force's activities, providing guidance on the nomination process, and equipping individuals to take on leadership roles to nominate other scientists with similar rigour. The maintenance of the task force's diversity is a key point and provides scope for persons in underrepresented groups to gain critical administrative and outreach responsibilities. These responsibilities assist both early career and underrepresented scientists in building strong community outreach, administration and networking skills.

A key next step is to gather demographic information on award recipients to capture the impact of this diversity initiative better. To date, we have been unable to collect basic demographic information from awardees. Thus, we rely on rudimentary searches to infer gender, location and underrepresented status. On reflection, this could be improved by seeking to have awardees self-identify their demographic characteristics. For instance, an awardee may be currently working at an institution in the UK or Europe but may be a citizen of another country; therefore, the location metric would be skewed. Obtaining more information related to the identities that awardees may associate would better allow us to fully assess the impact the task force is having on the awardees. Additionally, such information may help us better reflect other dimensions of diversity that are currently difficult to capture, for instance, race, sexual orientation, disability, career breaks and parental leave, provided the awardees are willing to disclose these details.

Finally, we will continue disseminating our success stories through various channels, including social media outlets, public speaking engagements, and academic conferences, to motivate future scientific professionals. Engagement of experimental biology and the broader scientific communities increases the diversity of the task force, provides new ideas for improvement, and ensures its sustainability as an initiative.

Conclusion

Significant success and progress have been made in improving the diversity in science awards since the establishment of the SEB award nomination task force through the recognition of marginalised scientists, which has shown that a more inclusive nomination approach would not only enrich the science community but also elevate marginalised individuals. This impact will soon be felt in other biological societies as the task force continues to evolve and plans to spread its horizon.

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About the Authors

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Clare Taylor is Head of Culture & Inclusion for School of Applied Sciences, Edinburgh Napier University and a Senior Lecturer in Medical Microbiology. Clare's research has focused on understanding host-environment-pathogen interactions of the intracellular bacteria Salmonella enterica and Listeria monocytogenes as well as applied work on antimicrobial therapies and infection control. Clare's work extends beyond microbiology and includes advocacy for equality and diversity in the life sciences, as well as working to improve the understanding of science within policy-making bodies.

Nicola Veitch is a Professor of Bioscience Education and Parasitology in the School of Infection and Immunity at the University of Glasgow. Her research background is molecular parasitology and genetics, and she is a co-deputy Director of Education, the Programme Coordinator of the Microbiology degree and a Senior Adviser of Studies. Nicola is a Senior Fellow of the Higher Education Academy, and has many interests in terms of Scholarship of Learning and Teaching, including publishing on blended learning strategies, embedding employability and the use of digital technology to enhance learning, with a focus on mobile apps and virtual reality. Over the past 4 years she has held grants to collaborate with colleagues and student interns to develop Equality, Diversity and Inclusion strategies to enhance the student experience.

David Audu is a postdoctoral researcher at the Hydrocephalus Research Centre, Biology Department, Indiana University, Indianapolis, USA. His work focuses on investigating the pathways of excessive reactive oxygen species (ROS) generation in animal models of hydrocephalus, contributing to the understanding of oxidative stress and its impact on neurobiology. He earned his MSC. And Ph.D. in Zoology (Animal Physiology) from the Federal University of Agriculture, Abeokuta, Nigeria, and a bachelor's degree in Zoology from the University of Jos, Nigeria. Before joining Indiana University, He was a lecturer at the Federal University of Agriculture, Abeokuta, teaching zoology and animal physiology while mentoring undergraduate students. He also conducted pivotal research on ROS in animal model of antimalarial drug toxicity and resistance. He expanded his expertise as a visiting researcher at the University of Westminster, UK, focusing on in vitro toxicity studies of antimalarial agents using liver cell lines. Beyond research, he is passionate about teaching, community service, and fostering the next generation of scientists.

Jordon Millward is a PhD student at Imperial College London, researching life science students' career paths. His work aims to support students' professional growth. He has held roles such as postgraduate research chair and school governor, contributing to career and mental health initiatives. Jordon supports career development through platforms like Threads, Instagram, and TikTok. He co-organized the SEB Outreach, Education, and Diversity Symposium and led a session at the SEB Annual Conference in Prague. He is dedicated to improving diversity in biosciences, part of the SEB Awards Nomination Task Force, and hosts the podcast “Sitting Down with Scholars.”

Robyn Emmerson is a postdoctoral researcher at the University of Birmingham, interested in plant epigenetics and environmental responses. Her current work focuses on understanding why mutating some plant epigenetic pathways results in reduced transgenerational fertility. Robyn obtained her PhD in 2023 from the University of Essex where she investigated how plants respond to naturally fluctuating light at a physiological and epigenetic level. She is also the Early Career Trustee for the Society for Experimental Biology (SEB), where she fulfils the responsibilities of a charitable trustee and ensures that the views and voices of early career researchers and students are heard and meaningfully included in the Society’s decision-making processes.

Rebecca Ellerington is the Outreach, Education, and Diversity Manager at the Society for Experimental Biology (SEB) She is responsible for delivering scientific education and outreach projects as well as promoting equality, diversity and inclusion across all areas of the Society. She is committed to advancing the impact and visibility of biological research, and empowering researchers to contribute to the public understanding of science. She is also passionate about promoting a diverse and inclusive scientific community that better reflects the makeup of wider society. Rebecca also acts as a deputy for the Chief Executive Officer of SEB leading team management and decision-making in the CEO's absence.

Ana Caroline Colombo is the Outreach and Engagement Officer at the Society for Experimental Biology (SEB). Her current work supports the experimental biology scientific community in collaborating and disseminating their research while supporting the scientists with their career development and improving diversity in science. She is also the founder of Sabia Semeando Ciencia Ltda, which offers administrative support services and assistance with projects adjacent to research to scientists and scientific organizations. She has an undergraduate degree in Biology (São Paulo State University - Unesp, Botucatu, Brazil), a master's degree in Psychobiology (University of São Paulo - USP, Ribeirão Preto, Brazil) and a PhD in Biochemistry (Federal University of Rio de Janeiro - UFRJ, Rio de Janeiro, Brazil). During her academic endeavours, her scientific research spanned from animal behaviour and neuroscience to fungal infection.