

# The Value of Diversity in the Robotics and Automation Society

By Karinne Ramirez-Amaro, Daniel Leidner, and Georgia Chalvatzaki

In 2022, a new team was formed to lead the Women in Engineering (WiE) Committee of the IEEE Robotics and Automation Society (RAS). The new team is led by Karinne Ramirez-Amaro from the Chalmers University of Technology as the new chair, with the fantastic support of two co-chairs: Daniel Leidner from the German Aerospace Center (DLR) and Georgia Chalvatzaki from the Technical University of Darmstadt. Together, we are committed to encouraging and making a significant advance in a diverse environment within the Society to promote an inclusive and equitable culture.

## Diversity and Its Benefits

Diversity is a well-studied subject that is sometimes misinterpreted and questioned. For example, you may be wondering, “Do we need diversity in our technical committees or in our research teams?” This has been studied from different perspectives in different fields [2]. In all cases, the results indicate that yes, we need diversity in teams because it promotes an increase in the collaboration of group members; furthermore, a diverse team influences perception, decision making, creativity, and performance [1].

## Unconscious Bias

What is the main challenge to promote diversity? Typically, we are prompt to work in homogeneous groups since we

unconsciously tend to seek out and collaborate with people similar to us [1]. In other words, we tend to like people who look like us. This is known as *unconscious bias*. This unconscious bias contributes to the lack of diversity in teams. Unconscious bias is not limited to ethnicity and race, but it extends to age, gender, nationality, physical abilities, and so on [3]. Unfortunately, everyone holds unconscious beliefs about various social and identity groups, and such biases are strengthened under stress. Why should we increase awareness regarding these biases? Because they have a great impact when hiring, collaborating, and mentoring. Such biases are the most significant barrier to achieving diversity, equity, and inclusion.

## Vision and Mission of the New IEEE RAS WiE Committee

It is very challenging to eliminate bias, but we should work together to minimize its effect by promoting and encouraging greater empathy and compassion. We gathered the reflections of the new leaders of the RAS WiE Committee, and here are their thoughts:

“My mission as chair of the new RAS WiE Committee is to bring awareness of the importance of the positive effects of diversity and inclusion in teams, which I believe will increase the performance of the different committees within the Society,” said Ramirez-Amaro.

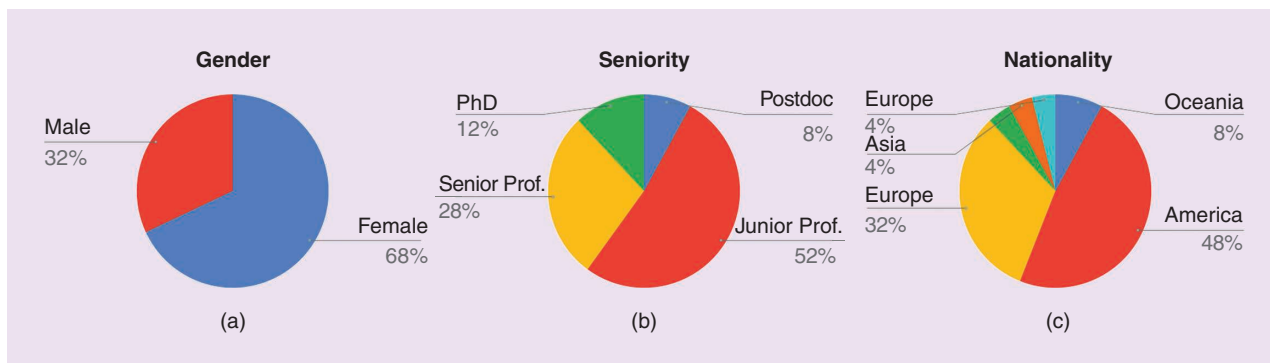
“My vision as cochair of this committee is to reach parity; therefore, we are no longer required to encourage diversity, but preserve it. There is still a long way before this is achieved, and I

would like to contribute to this topic, which is often overlooked by my male colleagues. I like to imagine that, at this stage, the committee may even have a role in inspiring the RAS technical committees in their scientific work,” said Leidner.

“My mission as cochair of this committee and as a young researcher is to increase the outreach activities of our community. In particular, I am very interested in reaching out to people from underrepresented groups, who may even have not yet been involved in the field of robotics and artificial intelligence, to give them opportunities and information about their options for a career in robotics,” said Chalvatzaki.

## New Members of the IEEE RAS WiE Committee

Our new committee is composed of 25 new members who were chosen to form a diverse and inclusive team. We all have different technical backgrounds, genders, nationalities, and seniority (from Ph.D. degrees to full professors). Figure 1 shows an overview of the diversity of our new team with respect to gender, seniority, and nationality. The current members of the committee include Stephany Berrio Perez (University of Sydney, Australia); Maru Cabrera (University of Massachusetts Lowell, United States); Oscar Carbajal Espinosa (Tec de Monterrey, Mexico); Amir Aly (University of Plymouth, United Kingdom); Marwa ElDiwiny (Vrije Universiteit Brussel, Belgium); Angelica Lim (Simon Fraser University, Canada); Lioba Suchenwirth (DLR, Germany); Amir Yazdani (University of Utah, United States);



**Figure 1.** The overall distribution of our new RAS WiE team with respect to (a) gender, (b) seniority, and (c) nationality.

Heni Ben Amor (Arizona State University, United States); Efi Psomopoulou (University of Bristol, United Kingdom); Ana Paiva (University of Lisbon, Portugal); Nadia Figueroa (University of Pennsylvania, United States); Henny Admoni (Carnegie Mellon University, United States);

Patricia Alves-Oliveira (University of Washington, United States); Sylvia Herbert (University of California, San Diego, United States); David Vernon (Carnegie Mellon University Africa, Ruanda Africa); Tamim Asfour (Karlsruhe Institute of Technology, Germany); Tobias Fischer (Queensland University of Technology, Australia);

Lisset Salinas Pinacho (University of Bremen, Germany); Serena Ivaldi (Inria Nancy Grand-Est, France); Katja Mom-baur (University of Waterloo, Canada); Chie Hieida (Nara Institute of Science and Technology, Japan); Eloise Matheson (European Organization for Nuclear Research, Switzerland); Vandi Verna (California Institute of Technology, United States); Lydia Kavradi (Rice University, United States).

Our current activities as the IEEE RAS WiE Committee include the organization and management of the WiE Luncheons/Aperó events at the IEEE

RAS International Conference on Robotics and Automation (ICRA), the IEEE RAS/Robotics Society of Japan (RSJ) International Conference on Intelligent Robots and Systems (IROS), and the IEEE RAS International Conference on Automation Science and Engineering (CASE). Our main target with these events is to reach out to as many people from our community as possible. As a starting point in our activities, we organized two events as part of the ICRA 2022 conference:

- An online panel discussion addressed career paths, opportunities, milestones, and difficulties in the academic journey to become a plenary or keynote speaker at big international robotics conferences such as ICRA or IROS. We had the fortune to have as panelists three very prominent women in engineering: Lydia E. Kavradi (Rice University), Katherine J. Kuchenbecker (Max Planck Institute for Intelligent Systems), and Vandi Verma (NASA Jet Propulsion Laboratory).
- A physical panel discussion in Philadelphia during the ICRA conference addressed the topic of diversity and inclusion to promote and embrace diversity in research teams. We had the insights of two very distinguished leaders within our community as panelists: Aude Billard (Swiss Federal Institute of Technology) and Tamim Asfour (Karlsruhe Institute of Technology).

Another important activity of our WiE Committee is to prepare periodic

columns about different topics of interest regarding diversity for *IEEE Robotics and Automation Magazine*. In the next columns, we will provide reflections on and highlights of the events we organized at ICRA, IROS, and CASE.

All of these activities will be complemented with new initiatives to promote the improvement of diversity within the different technical committees of our Society. As a new committee, we are looking forward to hearing your suggestions and feedback about our activities. Please feel free to introduce yourself to any of the team members of our RAS WiE Committee—we are here to support each other. You can obtain more information about our latest activities on our website at <https://www.ieee-ras.org/women-in-engineering>, and please feel free to contact us at any time [ieee-ras-wie@ieee.org](mailto:ieee-ras-wie@ieee.org).

## References

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