

## EDITORIAL

# The persistent underrepresentation of women in academic leadership

Hans J. Hoyer\*

Volgenau School of Engineering, George Mason University, Fairfax 22030, VA, United States

The persistent underrepresentation of women in academic leadership roles within science, technology, engineering, and mathematics (STEM) fields poses a significant challenge to achieving gender equity and diversity in higher education. Despite making noteworthy contributions to the field, they continue to face substantial barriers when seeking academic leadership positions. The lack of women in academic leadership roles in STEM is a multifaceted problem with far-reaching consequences. This dearth of representation not only hinders the progress towards gender equality but also perpetuates gender biases and stereotypes, creating an unwelcoming environment that discourages aspiring female scholars from advancing into leadership roles.

Identifying and understanding the root causes of this issue is imperative to foster an inclusive academic ecosystem that empowers and nurtures the talents of all scholars, regardless of gender. This is critical to the future of the field and, most importantly, to engineering's contribution to the health and wellbeing of humanity and the planet.

Addressing the underrepresentation of women in academic leadership roles in STEM fields requires a comprehensive and holistic approach. To create meaningful change, it is vital for universities and academic as well as professional organizations to encourage, prepare, and support women by creating an equitable and supportive environment that values their contributions and acknowledges the potential of women in leadership roles. This is essential to foster a pipeline of diverse talent, drive innovation, and ensure that the leadership of STEM fields reflects the diversity of the global community it serves.

## OUR PROPOSED SOLUTION - INTRODUCTION AND STATEMENT

Engineers are innovators, problem solvers and change makers who play a critical role in improving the quality of life and solving the grand challenges facing humanity and our planet — a role that will be even more important in the coming decades. While engineering is most often seen as a male-dominated field, it is imperative that we do all we can to balance gender representation in the field and ensure engineering education and practice include all members of global society. Without this we simply cannot sustain or further all that engineering has contributed to our past. In 2019, the **International Federation of Engineering Education Societies (IFEES)** and **Global Engineering Deans Council (GEDC)** pledged commitment to inspire and motivate and create opportunity for women to pursue STEM studies and careers. Then, as proof of this stated commitment and in collaboration with global women leaders in engineering, organization partners and funders, IFEES and GEDC announced the **Rising to the Top** book series that currently features four volumes published in four years, with an additional volume in development. Thus far, the series includes 114 authors representing women from 56 different countries in engineering careers in academia, business/industry and government- each telling the story of her inspiration, motivation and advancement in engineering against the myriad challenges and embracing the opportunities presented to them. To date, approximately many of these books have been sold – a key indicator of the desire for true-life stories like these to serve as roadmaps and inspiration for others.

### \*Corresponding Author:

Hans J. Hoyer, George Mason University, Volgenau School of Engineering, 4400 University Drive, MS 4A3, Fairfax 22030, VA, United States.

Email: hhoyer2@gmu.edu. <https://orcid.org/0009-0002-6781-1038>

Received: 23 November 2023; Revised: 30 November 2023; Accepted: 1 December 2023

<https://doi.org/10.54844/eer.2023.0494>

 This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License, which allows others to copy and redistribute the material in any medium or format non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Soon thereafter the publications, it became evident the need for women leaders to unite and share their stories celebrating their achievements while also highlighting and dismantling the common challenges they face globally. Out of this need for honest conversation, IFEEES and GEDC created a virtual monthly space titled, **Beyond the Books**. This brought the global network of authors, young women engineers, and STEM IFEEES. net Rise Academy Proposal Page 2 students together to share and discuss experiences as they navigate and prosper professionally. The intention was to tackle the obstacles and bridge the gaps women in STEM fields face while inspiring interest in STEM for girls and women worldwide. The interest ratings for these webinars averaged at 80% and the global representation showed over 20 different countries represented in both the panelists/authors and attendees.

Among many common sentiments expressed by all the authors was the feeling of “under preparedness” in entering the professoriate or in assuming positions of academic leadership such as Deans, Provosts, Vice Chancellors/Presidents. It is, therefore, of paramount importance that these future leaders are prepared and supported while they navigate the academic pipeline and stay the course through the professoriate and into more challenging positions of academic leadership.

The more than 114 authors of the current series form a unique and powerful network of women engineers and leaders, and with approval of our grant request the women of this network are ready to take the next step. *Rising to the Top* network and the proposed Rise Leadership Academy make it clear those women engineering leaders are not only essential for the advancement of all societies—they are here to stay.

## SOLUTION STATEMENT

To address the underrepresentation of women engineers in academic leadership roles and to foster a more diverse and inclusive environment in STEM fields in general and engineering in particular, IFEEES/GEDC propose the establishment of the Rising to the Top Leadership Academy (Rise Leadership Academy, in short), a specialized academic leadership formation, support platform and community for women engineering academics/scholars by women engineering leaders from around the world.

The Rise Leadership Academy proposes to create a pipeline of learning and skills development/ advancement focusing on emerging academics in engineering to assist them in navigating through the academic system and to enable them to move

successfully though the pipeline reaching positions of leadership.

The Rise leadership Academy will draw inspiration from the *Rising to the Top* book series and will leverage and activate the already existing and connected network of the over 114 women engineering leaders who authored the four books currently in the series. In this way, the compelling stories told first in book format will now take shape as a vital action-oriented network moving off the static page and into an interactive digital and direct communication community of women leaders seen and heard around the globe.

The goal of the Rise Leadership Academy is to develop a platform of knowledge exchange, and offer a suite of programs, workshops, mentorship opportunities, and resources targeted at emerging academic leaders through to professors and higher academic leadership positions. The women leaders featured in the *Rising to the Top* book series will be an integral part of the initial cohort of members of the proposed Academy, and volunteering their time to inspire, motivate, and mentor younger academics and advancing the discourse of wider representation of women in academic leadership positions around the globe.

The Rise Leadership Academy represents an initiative of the IFEEES Secretariat, GEDC and leading likeminded stakeholder institutions and organizations. Hence, moving forward the Rise Leadership Academy will reach out to fuse partnerships with universities, research institutions, academic and professional associations, and industry and governmental agencies to contribute to quality offerings and outreach.

## DECLARATIONS

### **Author contributions**

Hoyer HJ developed the concept for the manuscript, reviewed the literature, formulated research questions, collected the data, conducted analyses and interpreted the data. The author read and approved the final manuscript.

### **Source of funding**

None.

### **Conflict of interest**

Hoyer HJ is a Co-Editor-in-Chief of the journal. The article was subject to the journal's standard procedures.

### **Data availability statement**

No additional data.