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Editorial

# Empowering Global Collaborative Research

Réka Sebestyén-Dósa,[1] Praveen Bharath Saravanan,[2] Mihnea-Alexandru Găman,[3] Juan C. Puyana,[4] Francisco J. Bonilla-Escobar.[5]

The hidden problem of toxic research culture looming over today's evidence synthesis was highlighted in our previous issue.[1] As a young researcher, if you felt heard after reading that, this article is for you. The intense pressure to publish for career prospects among younger researchers is helping propagate the prevalent toxic research culture. Some of the strategies that were discussed include;

- Increasing standardized workshops that are hands-on and emphasize the harm done by falsification and poor integrity among medical researchers due to poor ethics. The utilization of the skills taught in these workshops can be rewarded with ease of publication and mentor support and penalized if otherwise.
- New researchers are to be measured qualitatively by their interest in niche topics and encouraged to try different research fields within their discipline of interest. However, adequate exposure in both clinical and laboratory setups is required to spark interest in certain fields, which may not be available in low-resource regions.
- The order of authorship must reflect efforts in the research. Seasoned researchers shouldn't feel required to include their names in research of early-career principal investigators (PIs), as the criteria shouldn't measure the same at their senior cadre. This comes with a caution that published researchers with 'n' number of publications may feel their efforts are made equivalent to an early career researcher with their first few papers if the criteria still measure the number of publications.

## Think Global, Act Local

By surpassing a few of these challenges, global student research initiatives have facilitated a better research environment. New platforms and societies have been on the rise since the pandemic. Research collaborations have been associated with better productivity.[2] Now who do we look for to collaborate as a student? Academic social networks are a good lead for future research collaborations. It can start from your institution, fellows through a conference dinner, mutuals through an online platform and what have you. The Cancer Research UK funded the international collaboration CanTest in 2017, which helped in capacity building to gear research toward the early detection of cancers. It made a pipeline that helped academic centers from different continents and care levels to interact and mentor new early-career researchers.[3] It was also found that research collaborations were at a slower steady pace among junior researchers compared to senior researchers who had an easier time publishing co-authored papers.[3] Now what are other benefits one may wonder.

## Exchange of Talents and Resources

Current literature suggests that individuals who pursue studies or research abroad often stimulate future collaborative efforts in their home countries and play a key role in facilitating knowledge transfer.[4] The rapid development and widespread adoption of remote and online tools in recent years have significantly enhanced access to global partnerships.[5] However, research infrastructure remains underdeveloped in low- and middle-income countries (LMICs). Implementing these technologies could be advantageous for fostering international collaborations between high-income countries (HICs) and LMICs, thereby boosting research capacity and improving prospects for health equity.[6]

## Innovation

Building a collaborative team involves allowing ideas to confluence and consensus to arise from discussions. People have different lived experiences and students have different exposures. Research questions can be answered more efficiently from different standpoints. It becomes more valid when thoughts are shared between similar resources but different backgrounds, as they come together to discuss possible avenues. Through this exercise, students from lower resource settings will have access to better mentors, instruments, and methodologies. Students from high-resource settings will have access to a varied clinical set-up and constraints that have led to innovative uses of existing infrastructure.

## Better Researchers

Conflict resolution and troubleshooting are essential for research collaborators and principal investigators together. However, this isn't something one learns in classrooms but rather through

[1] MD student, George Emil Palade University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, Târgu Mureș, Romania

[2] MBBS. K.A.P. Viswanatham Government Medical College, Tiruchirappalli, India.

[3] MD, PhD, Faculty of Medicine, "Carol Davila" University of Medicine and Pharmacy, 050474 Bucharest, Romania & Department of Hematology, Center of Hematology and Bone Marrow Transplantation, Fundeni Clinical Institute, 022328 Bucharest, Romania. Scientific Editor, IJMS.

[4] MD, FACS, School of Medicine, Department of Surgery, Professor of Surgery, Critical Care Medicine, and Clinical TranslationalScience, Director for Global Health-Surgery, University of Pittsburgh, Pittsburgh, PA, USA. O'Brien Professor of Global Surgery for Royal College of Surgeons in Ireland (RCSI). Editorial Board Member, IJMS.

[5] MD, MSc, PhD, Department of Ophtalmology; University of Washington, Seattle, WA, USA. Fundación Somos Ciencia al Servicio de la Comunidad, Fundación SCISCO/Science to Serve the Community Foundation, SCISCO Foundation, Cali Colombia. Grupo de investigación en Visión y Salud Ocular, VISOC, Universidad del Valle, Cali, Colombia. Editor in Chief, IJMS.

**Correspondence:** Francisco J. Bonilla-Escobar. Address: 750 Republican St, University of Washington, Seattle, WA, USA. Email: editor.in.chief@ijms.info

experiencing them via projects. The more chaos in the beginning, the better clarity arrives at the end of that exercise. Exposing global and communal collaborations, to early-career researchers and medical students will allow them to learn the 'know-how' of these skills. The more trans-continental relationships they develop, the more seasoned they tackle future issues and become better in both their professional and personal lives.

## Drawbacks

These cons aren't listed to drive away collaborations, but rather to plan future issues accordingly in an earlier phase of the collaborations and to curate a troubleshooting manual.

The online nature of collaborations often disrupts the collegiality among the researchers. Matching appropriate tasks, meeting deadlines, and writing skills frequently determine the student's character. Delayed responses, poor communication skills, and time zone mismanagement often put down the morale of the organizers.

Mentoring medical students online with little exposure to research involves a head phase of capacity building for them to learn the techniques and get familiar with the research field. The students in turn should have goals of learning the methodology with their first few projects when they observe and seek authorship when they meet the International Committee of Medical Journal Editors (ICMJE) standards. If the goal happens to be receiving a publication through the collaboration, often they are disappointed by the time it takes to reach conclusions following their career timelines and worried if the findings will assist in leveraging their career prospects.

The absence of an institution to provide the students with accountability adds to the attrition of collaborators as the project progresses. Since students involved often are chosen from different institutions, it requires a central source of funding from a source that is accepting of the nature of the collaboration. Frequently difficult to find, added to the fact that these students aren't full-time researchers.

With the flow of the project, it is also important that the roles and contributions of the collaborators to the project are determined. As long as the order of authorship still regards the position of different values, the contributions will have to reflect the order. Measured scoring systems are available and should be informed beforehand.[7] The occurrence of this practice isn't widespread among student researchers.

## Call for Action

As virtual conferences and classes have become widespread due to COVID-19, it's time to rethink the traditional model of medical research mentoring, which has been limited to local settings. One important step in aiding global collaboration is embracing the power of virtual mentoring, as it can encourage active participation in international research. This has been demonstrated by initiatives like the Cardiovascular Analytics Group, which includes 63 active members from 14 different countries.

***Table 1.*** **Global Research Exchange Opportunities for Students.**

| Global research opportunities | Description |
|---|---|
| Fulbright Program | Scholarships and opportunities for diverse institutions and regions across the United States and the world to share expertise, and collaborate on research with international partners.[5,9] |
| IFMSA Research Exchange | The largest medical student exchange platform globally, providing a structured exchange experience.[10] |
| ERASMUS + | The leading study abroad program for higher education in Europe[11] |
| Danish-American Research Exchange (DARE) program | Binational collaboration between the United States and Denmark, focusing on clinical research[12] |

***Table 2.*** **Organizations Offering Benefits to Support Student Researchers.**

| International Organizations | Benefits | Student Membership |
|---|---|---|
| European Association for the Study of Liver | Schools and Masterclasses<br>Fellowships and Mentorships<br>Online access to the Journal of Hepatology | Free for undergraduate students: https://easl.eu/join-the-community/#undergraduatestudentseur0 |
| European Society of Medical Oncology | Educational Resources<br>Fee Reductions for ESMO Meetings<br>Community and Collaboration | Free for undergraduate students: https://www.esmo.org/membership/membership-categories-annual-fees |
| European Society of Pathology | Professional development and networking opportunities<br>Free access to the online ESP Educational portal<br>Access to the "Virchows Archiv" Journal | Free for undergraduate students: https://www.esp-pathology.org/membership-benefits/ |
| Society for Neuroscience | Reduced registration rates for the SfN annual meeting<br>Getting involved in a variety of SfN Initiative Programs | Reduced fee for undergraduate students: https://www.sfn.org/membership/membership-fees |
| International Society for Infectious Diseases (ISID) | Access to Career Connections<br>Discounted rates on ISID meetings<br>Exclusive ICID travel awards | Reduced fee for undergraduate students https://membervillage.isid.org/general/register_member_type.asp |
| European Hematology Association | Educational Resources,<br>Junior membership is available for med students at reduced costs,<br>Dedicated training opportunities for med students interested in hematology (Lighting the Flame program) | https://ehaweb.org/education/lighting-the-flame/<br><br>https://ehaweb.org/membership/eha-member/ |
| International Society on Thrombosis and Hemostasis | Education Resources,<br>Free membership for med students/trainees | https://www.isth.org/page/Membership |
| Society of Hematologic Oncology (SOHO) | Educational Resources, Free membership for med students, non-oncology residents, members in training | https://sohoonline.org/SOHO/SOHO/Membership/Membership.aspx |

Serving as a model, it shows that online space can provide various opportunities, especially for mentees from less developed countries who may have limited access to research and

international networking.[8] We encourage establishing such research groups as they can foster diversity, equity, and inclusion, values that we, as a journal are committed to.

### Exchange Projects

Another step medical students can take toward global collaborative research is participating in various exchange projects. Several grants provide funding for students interested in international research or even international fellowships. ***Table 1*** illustrates some of the most popular options. These programs not only help build networks but also enhance research quality, promote cultural competence, and address shared global health challenges.

Last but not least, early career researchers and medical students with similar interests can engage in professional organizations that offer reduced or even free membership fees to facilitate student involvement in specific fields. See ***Table 2***. These organizations not only provide valuable educational resources, including courses, workshops, and symposia, but many of these have online platforms, enabling a global exchange of ideas, research, and experiences. They also support academic and career development by providing bursaries for members.

### Role of IJMS

The International Journal of Medical Students (IJMS) strives to amplify contributions from diverse regions in medical research. A recent cross-sectional study analyzing 22 medical student journals' editorial boards' adherence to the principles of diversity, equity, and inclusion (DEI) highlighted IJMS's commitment to these values. Remarkably, IJMS was the only journal to achieve the maximum score in the geographic diversity domain, emphasizing its dedication to ensuring global representation in its community.[13]

Through initiatives like the World Conference of Medical Students' Research, IJMS fosters an inclusive environment that connects students from diverse regions. Its virtual format ensures that participants from regions with limited access to international academic events can still engage in global discussions, share research findings, and form collaborative networks. By removing the barriers of physical travel, this year's conference allowed 40 students and early-career researchers from 20 different countries to connect and learn from each other regardless of their location.

### Conclusion

The world is becoming a global village. Talents and resources can be shared now better than at any time in history. The rightly organized brains with aligned resources can work wonders.

## References

1. Rajakumar Rajakumar HK, Gaman MA, Puyana JC, Bonilla-Escobar FJ. Transforming toxic research cultures: protecting the future of medical students and early career researchers – part I. Int J Med Stud. 2024;12(2):128-32.
2. Abramo G, D'Angelo CA, Di Costa F. Research collaboration and productivity: is there correlation? High Educ. 2009;57(2):155-71.
3. Vermond D, de Groot E, Sills VA, Lyratzopoulos G, Walter FM, de Wit NJ, et al. The evolution and co-evolution of a primary care cancer research network: from academic social connection to research collaboration. PLoS One. 2022;17(7):e0272255.
4. Rørstad K, Aksnes DW, Piro FN. Generational differences in international research collaboration: a bibliometric study of Norwegian university staff. PLoS One. 2021;16(12):e0260239.
5. Yao B. International research collaboration: challenges and opportunities. J Diagn Med Sonogr. 2021;37(2):107-8.
6. Saenz C, Krahn TM, Smith MJ, Haby MM, Carracedo S, Reveiz L. Advancing collaborative research for health: why does collaboration matter? BMJ Glob Health. 2024;9:e014971.
7. Masud N, Masuadi E, Moukaddem A, Omair A, Mohamud M, Al Dubayee M, et al. Development and validation of authorship order score (AOS) for scientific publication. Health Prof Educ. 2020;6(3):434-43.
8. Chan JSK, Lau DHH, King E, Roever L, Liu T, Shum YKL, et al. Virtual medical research mentoring. Clin Teach. 2023. Epub ahead of print.
9. Al-Dahir S. From the bayous to the sand dunes: one faculty member's year abroad as a Fulbright scholar. Am J Pharm Educ. 2012;76(1):Article 17.
10. D'Ignazio T, Lavoie G, Pomerani T, Lachapelle A, Gaucher N. Pre-exchange training: developing ethical and cultural competencies in medical students. Med Teach. 2019;41(12):1399-403.
11. Granato S, Havari E, Mazzarella G, Schnepf SV. Study abroad programmes and student outcomes: evidence from Erasmus. Econ Educ Rev. 2024;99:102510.
12. Mehta KM, Petersen KL, Goodman S, Sørensen HT, Bøgsted M, Olesen JD, et al. The Danish-American Research Exchange (DARE): a cross-sectional study of a binational research education program. BMC Med Educ. 2023;23:402.
13. Manan MR, Nawaz I, Komer L, Salam A, Chiruţă II, Abidin ZU. Diversity, equity, and inclusion on editorial boards of medical student journals. Asian Bioeth Rev. 2024.

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