

Blueprints for Discovery: The Anatomy of a Global Medical Student Research Conference

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Introduction

Evidence-based Medicine is the clinical manifestation of new avenues explored through research, from novel treatments to individualized approaches of care. As medical students, we observe this changing landscape of clinical practice as the physicians we shadow engage in the lifelong learning process and adopt these new ways of service delivery. Research holds a myriad of direct benefits for medical students, such as increasing one's competitiveness for specialty training, improving one's understanding of medical literature, and developing new insights that advance precision medicine. However, certain barriers impede research accessibility and pose a threat to the current development of physician-scientists. Research experience has become an expected component for many residency program applications; in Canada, 81% of anesthesiology residency programs require research. Therefore, it is critical that medical students are supported in their efforts to engage in research so that they can adjust to these increasing expectations to engage with research prior to residency training.

Perceptions within medical education in relation to research difficulty, complex methodology, and time limitations contribute to reduced student involvement in research.¹ The International Journal of Medical Students (*IJMS*) aims to change these perceptions by allowing medical students a space to gain skills in research through opportunities to engage in peer review, conference coordination, and presentations. Among such efforts is the World Conference of Medical Student Research (WCMSR), an annual virtual conference held by *IJMS* involving works from topics in Surgery, Pharmacy, Internal Medicine, and more. Medical students are provided with the opportunity to coordinate, plan, and execute the conference while they amplify the voices of their global peers who present their recent research discoveries. Conferences such as the WCMSR have been shown to boost networking skills, support the exchange of information, foster future collaborations, and engage students in a socialization process pertinent to their development as young researchers. In a study in Germany, a survey was conducted to investigate the benefits of attending academic conferences for

doctoral and postdoctoral students. Among the 325 doctoral respondents, 57.5% indicated that they learned new information on alternative research methodology and 27.1% found job opportunities or vacancies from attending academic conferences.²

By creating events like medical student research conferences, students engage with the research process, celebrate new findings, and network with global peers. These experiences prepare medical students to respond to the increasing need for research experience in their applications to residency training. The purpose of this editorial is to provide guidance on the makings of a medical student research conference like that of the *IJMS* WCMSR that will support student-led initiatives to bridge the research accessibility gap ([Figure 1](#)).

The Foundations of a Conference

To coordinate a medical student research conference, one of the first things to consider is the vision and aim of such an event. The purpose of the conference must be outlined to allow identification of the target audience and define the scope. If a conference is catered towards supporting medical student success, then naturally, the target audience could be academics, physicians, and medical and pre-medical students. Activities should be tailored towards medical students, and the keynote speakers should be relevant experts in the topics presented. Participants may be students or recent graduates who wish for their research to be presented to their peers. The central idea is to have selection criteria that aligns with the purpose of the conference. Similarly, the scope of a conference is further determined by the types of research abstracts accepted and the fields of study covered. For instance, a conference could accept abstracts from a single specialty or vary to include research topics in more than one specialization.³

Another factor to account for is the format of the conference in which information is disseminated. The choice of conducting the event virtually or in-person largely varies on the scope of the conference. Traditional in-person conferences allow for more

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networking opportunities, workshops, and engagement with a live audience. This allows presenters to interact directly with the audience without the constraint of their scheduled presentation time. However, costs such as travel, accommodations, and catering limit attendee participation. Online conferences, on the other hand, are more likely to mitigate costs, promote inclusivity, such as bypassing travel restrictions for persons with disabilities and permit attendance from anywhere in the world. The primary limitation of the virtual conference format is the reduction of opportunities for face-to-face interactivity.⁴

No matter the format, gaining organizational involvement or medical school affiliations can help boost student morale, networking connections, and resources. For example, a study from Singapore found that co-hosting a conference between nursing and medical students positively impacted student attitudes towards interprofessional education.⁵ This highlighted the multi-disciplinary nature of a healthcare team as medical students were exposed to other healthcare professionals with whom they will work alongside in the future, which fostered the early development of interpersonal and interprofessional skills of collaboration. In this way, affiliations between various healthcare professions can increase conference accessibility and reinforce a strong partnership between physicians and other healthcare professionals.

Creating a Conference Team

Creating a successful international medical student research conference begins with assembling a well-rounded team. The first step is to identify key roles and clearly define responsibilities. The core organizing committee should include conference chairs to manage the overall vision and team tasks, an abstract review committee to assess the abstract submissions, a logistics team to manage the venue or virtual platform and day of conference technical operations, and a marketing team to promote the event to the potential presenters and audience. Additional conference team members to consider including are financial coordinators, conference hosts, and judges. These roles ensure high-quality programming and execution, but they may vary in appropriateness depending on the conference structure.

Recruitment of the team members should take place early to allow time for training, calibration, and coordination, especially if team members are serving from different time zones. A shared communication platform is essential to help streamline collaboration efforts and ensure vision alignment among the team. Establishing a detailed planning timeline is equally critical, and the timeline should be communicated during the recruitment process to ensure team members are available to serve for the duration of their role.

Ideally, the core team should be formed around six months before the event to set dates and secure the venue, with abstract submissions opening three to four months prior. This will provide ample time to curate the vision and execute the conference. Abstract review may be carried out on a rolling basis if standardized grading schemes are in place to assess submission

appropriateness for presentation. Abstracts should not be selected before the review of all submission as this could jeopardize the fairness of the submission process for late submissions. The selection process should occur one to two months before the conference, which would give presenters enough time to construct their posters, slides, and other presentation materials. Once the presenters are selected, the schedule can be finalized. During the one-month countdown to the conference, judge and moderator training should commence, along with any last-minute logistics concerns. This structured, stepwise approach to conference team curation will hopefully enable future global, student-led conferences to be organized, equitable, and impactful.

Building the Conference

Building a successful medical student research conference starts with a transparent abstract submission and peer review system to ensure fairness and integrity. Clear evaluation criteria and a structured process must be set in place to maintain the quality and credibility of events.⁶ Equally important is the consideration of the presentation formats. Offering a range of presentation styles, such as oral presentations, posters, and the Three Minute Thesis, broadens participation and allows students to share their research in diverse ways that play to the strengths of different topics. Defining thematic tracks can also help structure submissions and align presentations with conference goals.⁷

Beyond content, the structure of the conference itself must be carefully considered. A well-designed schedule that balances academic sessions with adequate breaks supports sustained attention, networking, and informal discussions between participants.⁸ Incorporating keynote lectures, workshops, and networking opportunities alongside research presentations can enrich the overall experience.⁹ Consider whether having keynote speakers is appropriate given the scope of research topics presented. For example, the decision not to include a keynote speaker for our upcoming *IJMS* WCMSR 2025 was intended to allocate additional time for medical students to present their work. This was informed by the *IJMS* strong focus on celebrating medical student achievements in research. The design of the conference avoids focusing deeply on a singular academic voice or topic; rather, it is committed to represent a diverse collection of expertise and fields of interest. However, consider including a keynote speaker at research conferences with specific topics of focus within a narrow field of inquiry.

Medical student involvement in the conference organizing committee is critical to the success of such events. By engaging medical students in the planning, logistics, and decision-making processes of conferences, it not only gives them ownership in the process but also fosters the development of leadership, teamwork, and organizational skills that are highly valued in medical education and clinical practice.^{7,10} This participatory approach transforms conferences into experiential learning platforms where students move beyond passive attendance into active contribution. Previous studies have shown that such

engagement improves communication skills, strengthens social networks, and deepens students' understanding of academic culture and research dissemination.^{9,10} Furthermore, peer-to-peer collaboration in organizing roles can enhance confidence and create a sense of belonging within the professional community, which is especially important for early-career researchers.¹⁰

Logistical considerations must not be overlooked. Whether physical or virtual, the choice of venue or platform largely determines the accessibility of engagement. Physical events require careful attention to space, circulation, and facilities while virtual and hybrid conferences must address the considerations of time-zone inclusivity and technical support.^{9,11} Structuring the program with clear time frames, including breaks and thematic sessions ensures a good flow. Budgeting, securing sponsorship, and setting affordable fees are central factors that determine accessibility, particularly for students from low-resource backgrounds. Transparent communication around costs and available waivers can reduce such barriers to participation.¹⁰ Finally, judging and award systems should be clearly defined, with prior calibration of evaluators to ensure fairness. Recognition of excellence motivates presenters and contributes significantly to the academic profile of the event.¹² These key elements create the foundation of an inclusive and impactful conference.

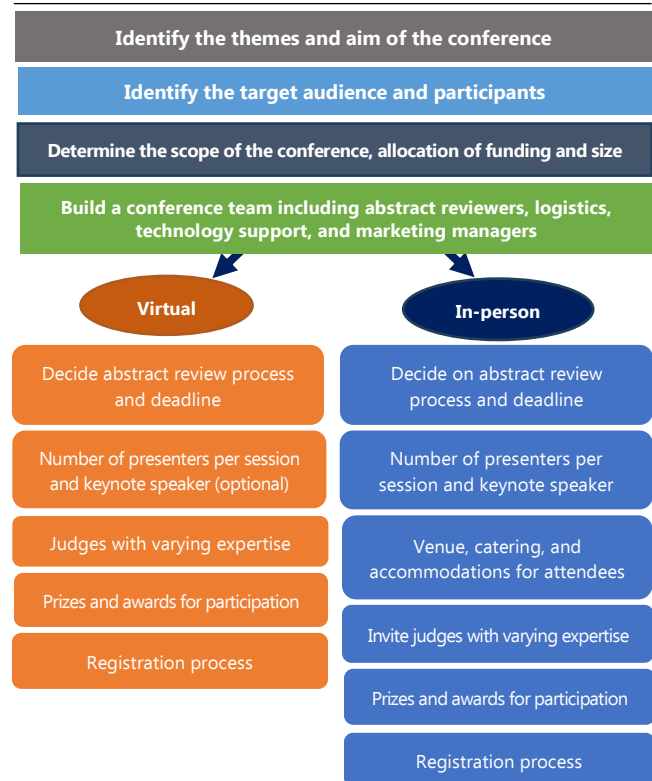
Promoting the Conference

Any conference has stages involved in managing the external affairs, one of which is the "get to know us" stage where the team contours the vision and the objectives for the conference. It is the stage of selling the conference to the participants, the partners, and other stakeholders.

Once this vision is established, it is time to disseminate the conference details. To start a promotion strategy, it is imperative to identify the target group of presenters and audience members. Then, understand where they get their information. For a medical student research conference targeting medical students and 1st and 2nd year residents, the typical age is twenty two to twenty eight, so consider reaching this audience primarily through social media. TikTok, Instagram, X, Facebook, and LinkedIn are the most popular platforms in this age group, so these platforms would be appropriate to consider posting conference promotions on. The frequency used for posting should be daily, but daily posting in medical student social media pages can sometimes receive negative feedback from group admins or members. Consider also how the pacing of posting can strengthen or weaken the message being sent.

If the conference is being held by an organization, utilize the membership base that is already established by adapting communications to reflect expected engagement. If email lists or webpages are an already established form of communication, engage with these members regularly in this familiar format. This will make sure that heavily invested community members who are more likely to participate are given the opportunity to support the conference.

Figure 1. Stepwise Planning of a Medical Student Research Conference.



Additionally, be aware that partnerships and co-promoting are often at the core of how medical student conferences operate. However, partnerships based on funds, products, or media exposure are also often utilized and could be useful. The partnerships with other conferences are vital to the conference development since ideas can be expanded upon, and co-promoting each other's conference can boost audience reach. Lastly, post-conference marketing is also crucial because it can provide a nostalgic feeling about the conference and reminds the participants of their engagement, which can help maintain a following for the next conference. Extending acknowledgement of contributions made to the conference as well as sharing conference day footage should be considered as sources for the content.

Implementing the Conference

Achieving a medical student research conference requires careful attention to logistical details, which will help create a rewarding experience for attendees. The process begins with identifying and reserving a venue that meets the conference's needs, including adequate space for oral and poster presentations, a convenient location, and accessibility for participants. It is important to consider whether a conference should be held virtually. Virtual conferences are better able to accommodate a diverse presenter pool and audience across time zones and to avoid the financial and logistical burdens of traveling.

For in-person conference venues, organizers must obtain essential presentation support tools such as poster boards, digital display screens, poster hanging supplies, projectors, microphones, audio-visual equipment, judging tables, chairs, and a podium for

speakers and hosts. Recruiting of catering services for meals or refreshments and, if necessary, partnerships with local hotels for accommodations should be considered.

For virtual conferences, the platform selected must be appropriate to support all conference needs, including live streaming, breakout rooms for parallel sessions, and digital poster presentation capabilities. Technical requirements should be confirmed early, with arrangements for reliable internet connectivity, backup hosting options, and day-of technical support. Arranging a conference schedule with consideration of coordinating time zones for presenters, judges, and hosts will help maximize impact and engagement. Providing training sessions for presenters, judges, and moderators in advance ensures smooth navigation of the platform and a professional experience for attendees.

For hybrid conferences, which are becoming more common in the post-COVID era, organizers must coordinate both physical and virtual elements. The venue should be equipped with reliable audiovisual technology to stream sessions live, support virtual Q&A, and display remote presenters on-site. A robust online platform should allow virtual attendees to access talks, poster sessions, and networking opportunities in real time. Careful scheduling is essential to accommodate multiple time zones, and moderators should be assigned to manage both in-person and online engagement. Providing clear instructions, technical support, and contingency plans ensures that neither audience feels secondary and that the event maintains a unified, professional atmosphere.

Achievement awards are an important component of a successful conference as they recognize excellence and encourage participation. Organizers should coordinate with judges well in advance to determine evaluation criteria and establish whether judging will occur prior to the conference, during live presentations, or both. Clear guidelines and standardized scoring rubrics help ensure fairness and consistency.

Providing tangible recognition, such as certificates, medals, or plaques, not only celebrates the winners but also adds prestige to the event and motivates participants to strive for high-quality research and presentations. It would be prudent to consider the attendance model of the conference when selecting what recognition type would be appropriate. For virtual conferences, personalized, digital certificates can be released immediately following the conference. For in-person conferences, ribbons and medals may be more appropriate as they can be given to the awardees on the day of the conference, but consider providing generic award memorabilia if judging occurs on the day of the conference. On the other hand, digital and delayed physical awards may be more suitable if the conference team decides on awards customized to the awardees.

Post-Conference Wrap Up

After the conference ends, it is essential to formally thank and recognize everyone who helped contribute to the conference, including the organizers, presenters, judges, and audience

members. Announcing the awardees at the end of the conference and later issuing certificates or trophies based on award categories adds gravitas and shows appreciation. Recognizing winners publicly on social media, the conference website, and newsletters is also important to expand conference visibility and motivate future participation. In addition, the sharing or publishing of the abstracts presented through conference supplements, online repositories, or journals is crucial as this allows the presented research to gain traction beyond the event. This not only acknowledges the effort of the presenters but also contributes to dissemination, academic profile building, and increases the likelihood of full publication of presented work.¹³

Feedback is another critical element in wrapping up a conference. Gathering attendees' evaluations and presenter reflections right after the event provides insights into successes and areas for improvement. Studies in medical education have shown that timely and structured feedback significantly improves knowledge, skills, and learner satisfaction underscoring the importance of timely feedback in conference settings.¹⁴

Invitation to the IJMS WCMSR 2025

We invite all who are curious about international medical student research to join us for our fourth annual virtual World Conference of Medical Student Research (WCMSR) on **November 15th and 16th, from 8 AM to 5 PM EST**. The WCMSR 2025 will be held virtually and streamed to our YouTube @IJMS and is free to attend.

We welcome outstanding medical students and recent medical graduates (within 2 years) to submit abstracts for original research, case reports, and meta-analyses on topics ranging from clinical medicine to public health.

Selected abstracts will be either chosen for a 10-minute oral presentation (Day 1) or a digital poster presentation (Day 2). This is a unique opportunity to showcase research to a global audience of peers, world-leading physicians, and industry leaders. Presenters will compete for awards and have their work published in the *IJMS* Supplement.

Submit your abstract now at <https://ijms.info/IJMS/submission/wizard>. The abstract submission deadline is **September 30th, 11:59 PM EST**. Presenting researchers will be contacted with their results by October 20th.

For further information regarding the submission process and guidelines, please visit the conference webpage of the *IJMS* website: <https://ijms.info/IJMS/Conference/welcome>.

For those with questions about the conference or submission process, the conference team may be contacted via email at conference@ijms.info. To stay up to date on the upcoming conference preparations, consider following our socials. The *IJMS* may be followed on LinkedIn @International Journal of Medical Students (IJMS), X @TheIJMS, YouTube @IJMS, Instagram @ijms.official, and Facebook @ijms.official.

Conclusion

Medical student research conferences play a critical role in early physician-researcher professional development by encouraging networking, critical appraisal, and staying up-to-date on research innovations. Medical students should be encouraged to participate, coordinate, and present at such conferences to further enhance their preparation for their careers after medical school. Conferences are prevalent during and after residency for healthcare providers to retain knowledge of the most recent advancements in their subspecialties. These events bring together various healthcare professionals and trainees and

inspire collaborations, novel treatments, and continuous improvements to patient care.

This guide aims to assist medical students when coordinating a research conference of their own, and it was made to provide a brief overview of considerations and recommendations using our own fourth annual WCMSR as inspiration. The International Journal of Medical Students (*IJMS*) remains committed to fostering scientific thinking, inquiry, and engagement among medical students across the world. By conducting a student-led virtual conference, the journal hopes to shed light on the beauty of research, celebrate early clinician scientists' contributions, and support efforts in bridging the research accessibility gap.

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