

# Health research mentorship in low-and middle-income countries (HERMES)

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A TDR Global practical guide to spur mentorship institutionalization



Cover: Dr Kidisit Bobosha (mentor), Senior Scientist at Armauer Hansen Research Institute (AHRI) and TDR Global Ethiopian node member and right, Dr Abenezzer Derje (mentee), medical doctor, assistant researcher at AHRI who aspires to become a physician scientist.

Image credit: Zeredawit Getu

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Health research mentorship in low- and middle-income countries (HERMES): a TDR Global practical guide to spur mentorship institutionalization

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# Contents

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<b>I. FOREWORD</b>	iv
1. Foreword by the Director of TDR	iv
2. Foreword by the Ethiopian Minister of Education	v
<b>II. PREFACE</b>	vi
<b>III. ACKNOWLEDGEMENTS</b>	vii
<b>IV. EXECUTIVE SUMMARY</b>	viii
<b>V. AN INTRODUCTION TO RESEARCH MENTORSHIP</b>	1
<b>VI. DEFINING INSTITUTIONALIZING RESEARCH MENTORSHIP</b>	1
<b>VII. NURTURING A ‘PAY-IT-FORWARD’ CULTURE</b>	2
<b>VIII. GENERAL PRINCIPLES TO INSTITUTIONALIZING RESEARCH MENTORSHIP</b>	3
<b>IX. USING THIS PRACTICAL GUIDE</b>	4
<b>THE PROCESSES INVOLVED IN A RESEARCH MENTORSHIP PROGRAMME’S LIFE CYCLE</b>	4
1. Exploration	5
2. Preparation	5
3. Implementation	6
4. Sustainment	7
<b>X. HOW TO MEASURE AND ITERATIVELY IMPROVE</b>	8
<b>XI. CONCLUSION</b>	9
<b>XII. OPEN ACCESS RESOURCES</b>	10
<b>XIII. ANNEXES</b>	11
<b>XIV. REFERENCES</b>	12

# I. Foreword

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## 1. Foreword by the Director of TDR

Research mentorship is fundamental to science. Mentorship bridges the generational gap and ensures that young scientists can build on the wealth of knowledge and wisdom of their experienced colleagues. TDR has trained over 15000 researchers on all continents over the last few decades, especially in low- and middle-income countries (LMICs). With the rise of virtual technology and online courses, demand for mentoring is increasing, and so are the opportunities and challenges in building fruitful collaborative relations.

We see research mentorship as nurturing research impact, by leveraging recognized expertise to strengthen individual scientists and institutional capacity, while also addressing important aspects of equity in health and education. I know how important mentorship can be to spark an initial research interest, catalyze a scientific career, and champion partnerships between professionals with similar interests.

Despite the well-recognized importance of research mentorship, many researchers still encounter obstacles that existing resources do not address. Resources often focus on individual factors such as how to be a strong mentor or mentee, while paying less attention to the broader institutional ecosystem supporting mentorship. In addition, some guides have been tailored for high-income country settings, with more abundant institutional resources. So, how do we make sure that TDR's focus, researchers working in low- and middle-income countries, are also part of the mentorship solution?

This practical guide responds to these gaps. It provides tools, open access resources, and advice for research institutions, tailored for LMIC's settings. The guide is informed by 123 proposals received from 40 countries following an open call for proposals; most of these came from LMICs. Based on these proposals and two systematic reviews, the experts we convened through [TDR Global](#) worked together with the Armauer Hansen Research Institute ([AHRI](#)), and Social Entrepreneurship

to Spur Health ([SESH](#)) to develop, pilot, and test this guide, mapping out several pathways to institutionalizing research mentorship.

I hope the extensive open-access resources on institutionalizing research mentorship will prove useful to guide you in your endeavour. Several toolkits, guides, and published manuscripts have been developed explicitly for LMIC researchers. These open-access resources can help build strong communities focused on research mentorship in resource-constrained settings.

I invite you to explore the novel ideas presented in this guide and build your own testimony as you advance on the path of creating a nurturing environment for mentorship in your own institution.

**Professor John Reeder**  
- Director, TDR



## 2. Foreword by the Ethiopian Minister of Education

Training and research are fundamental tools for human development. Literate, competent, and passionate members of the community are essential resources to chart and lead their country's development agenda. During the last three decades, Ethiopia has made a huge investment in training its citizens to play a pivotal role in the development of the country. As such, higher training institutions have grown from a handful in the early 1980s to over 50 public higher training institutions to date and approximately 40 research institutions in various fields across the country. In addition, there are private and non-governmental research institutions.

The rapid growth of research institutions has contributed to an expanding group of research scientists. In view of government's interest in winning over poverty and ensuring comprehensive development, we expect much more from our academics and researchers. Yet, much remains to be done to inspire current academics and researchers as well as students in different fields. The goal is for them to conduct more research that can have a direct impact on human health. Although research culture is relatively recent in Ethiopia, we recognize the increasing trends in research outcomes. Nonetheless, the country has a long way yet to go in terms of quality, relevance, and number of research outcomes.

We understand that research culture in our country is just emerging and thus has limited resources to offer. In addition, the research partnerships we have with individuals, groups and institutions in developed nations are not well guided and limited in terms of lining up with Ethiopia's focus on development and with appropriate skill transfer.

Although government has taken steps to give prominence to evidence generation and use, allocation of resources is limited. Investment is needed in high tech equipment for laboratories, fostering of community engagement as well as consistent capacity building of researchers and closer mentorship opportunities. Successful research undertaking benefits from institutionalized mentorship opportunities that guide and nurture junior researchers. This has powerful leverage in encouraging and facilitating research within our capacity and interest. In view of

this, I recognize the role of this practical guide, "HEalth Research MEntorship in Low and Middle-Income Countries (HERMES)", developed, piloted and tested by [TDR Global](#). I believe that this guide will improve our research culture both at academic and research institutions in LMICs.

I am happy that Ethiopian colleagues under the leadership of the Armauer Hansen Research Institute ([AHRI](#)) have played a leadership role in this process and hope to see us roll out the guide in our academic and research institutions quickly.

I would like to thank all who were involved in the process, TDR Global as well as its sponsors the UNICEF/UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases.

**Dr Samuel Kifle**

*- State Minister of Education, Ethiopia*

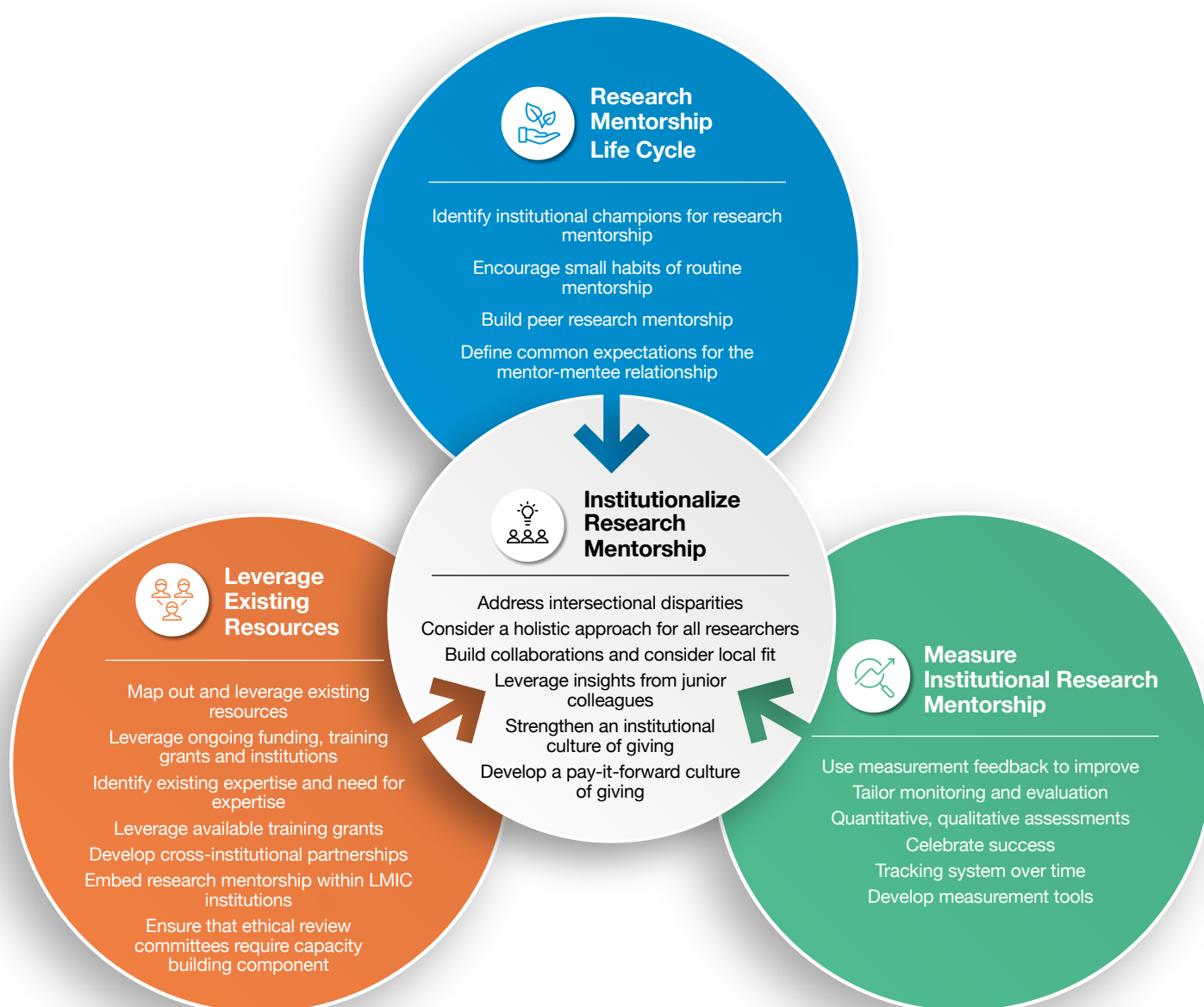


## II. Preface

Research mentorship is a powerful tool. It has the ability to mould generations of researchers, positively influencing their career development by instilling a culture of learning through research, generating knowledge, and communicating findings.

It is easy to find research mentorship frameworks and tools these days, but more often than not, they are designed for high-income settings. As a result, these are difficult to use in low and middle-income countries (LMICs) where there are differences in institutional tradition, structures, cultures, and capacities. These gaps call for practical guidance to build and further institutionalize research mentorship in LMIC organizations.

In this guide, institutionalizing research mentorship is defined as the nurturing of research capacity in organizations (e.g., universities, professional associations, or research institutes) to improve research effectiveness and health equity. This guide was developed through a crowdsourcing open call, a scoping review of evidence, and an adapted Delphi method. It does not explain how to be a good mentee or mentor as there are numerous other resources available covering these topics (see open access resources section of the guide). The guide is aimed at institutional leaders, funders, and others interested in institutionalizing research mentorship in LMICs or other resource-constrained settings.





# III. Acknowledgements

This practical guide was developed through a collaborative process led by TDR Global. TDR Global is a worldwide community of passionate scientists and experts who have been working with TDR on infectious diseases of poverty research.

The core team included Eneyi Kpokiri, Mirgissa Kaba, Alemseged Abdissa, and Joseph Tucker. The working group included (in alphabetical order) Alemseged Abdissa, Yoseph Gebreyohannes Abraha, Olaoluwa Pheabian Akinwale, Barbara Castelnuevo (subgroup lead), Alejandra Chamorro, Noah Fongwen, Franklin Glozah, Andres Jaramillo, Mirgissa Kaba, Fiona Kennedy, Eneyi Kpokiri (subgroup co-lead), Zewdie Birhanu Koricha, Qinyi Liu, Yuka Manabe (subgroup co-lead), Kamryn McDonald, Maria Isabel Echavarria Mejia, Tilak Chandra Nath (subgroup co-lead), Lyda Osorio (scoping review lead), Simon Rayner, Victor Talavera-Urdanivia, Weiming Tang (subgroup co-lead), Joseph Tucker (subgroup co-lead), Delenasaw Yewhalaw, and Daniel Yilma (subgroup co-lead).

**For questions or feedback, email Joseph Tucker at [jdtucker@med.unc.edu](mailto:jdtucker@med.unc.edu) or Alemseged Abdissa at [alemseged.abdissa@ahri.gov.et](mailto:alemseged.abdissa@ahri.gov.et).**

We would also like to acknowledge the assistance of the following individuals who served on our crowdsourcing open call steering committee, contributed to the scoping review, Delphi process or otherwise provided assistance: Abraham Aseffa, Huanyu Bao, Belquis Abdullah Ahmed Farea, Derbew Fikadu Berhe, Kidist Bobosha, Dawn Comeau, Phyllis Dako-Gyeke, Elisabetta Dessi, Govinda Prasad Dhungana, Martha Isabel González Duque, Chinyelu Ekwunife, Tina Fourie, Larry Han, Mia Hoole, Kiya Kedir, Alice Matimba, Azeb Mekonnen, Michael Mihut, Vita Mithi, Irene Richard Moshi, Andargachew Mulu, Ajibola Ogunsola, Mogaji Hamed Oladeji, Ifedola Isimeme Olojo, Judith Omumbo, Barbara Sina, and Shufang Wei. Thanks to external peer reviewers Mary Ann Lansang, Rosanna Peeling, and Beatrice Halpaap.

This practical guide resulted from a collaboration between TDR Global, SESH (Social Entrepreneurship to Spur Health), and AHRI (Armauer Hansen Research Institute). The guide received support from TDR, the Special Programme for Research and Training in Tropical Diseases, co-sponsored by UNICEF, UNDP, the World Bank, and WHO.



Fig.1. Practical guide development meeting in Addis Ababa, Ethiopia, 23-24 June, 2022

# IV. Executive summary

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Research mentorship is critical for health research, but many mentorship resources focus on high-income countries and neglect institutional factors that are important for research mentorship in low- and middle-income countries (LMICs). Institutionalizing research mentorship is nurturing research capacity in organizations to improve research effectiveness and health equity. The purpose of this guide is to provide practical advice for institutionalizing research mentorship in diverse settings, especially LMICs.

This TDR Global guide was developed in partnership with the Armauer Hansen Research Institute, Social Entrepreneurship to Spur Health, and individuals identified through a crowdsourcing open call. This guide was developed based on data from a global crowdsourcing open call, a scoping review of evidence from LMICs, and an adapted Delphi method. This culminated in an in-person meeting in Ethiopia where the draft was refined. All items that received greater than 80% agreement among the consensus panel members were included in this guide called “HEalth Research MEntorship in Low and Middle-Income CountrieS” (HERMES). The open call solicited 123 practical strategies from 40 LMICs that formed the foundation of the guide. The scoping review identified 77 relevant studies on enhancing research mentorship. The adapted Delphi process ultimately resulted in consensus on three main sections, including working across the mentorship life cycle, leveraging existing research and training resources, and monitoring and evaluating mentorship.

Key suggestions to enhance research mentorship include the following: acknowledge power imbalances to enhance equity; consider a holistic approach to career development and mentorship; recognize research mentorship as an institutional responsibility; identify the research and training resources available locally and more broadly; give generously to others without an expectation of personal benefit (i.e., pay-it-forward). Other key suggestions include: leverage insights from junior colleagues and promote peer mentorship; ensure that research ethical review committees require capacity

building in protocols; ensure that grant applications include resources for research mentorship; develop context-appropriate plans for comprehensive monitoring and evaluation using qualitative and quantitative data; celebrate exceptional research mentorship within teams; develop tools to measure the institutionalization of research mentorship. Some LMIC institutions already have strategies to institutionalize research mentorship which can be scaled up. Research is needed to enhance the uptake of HERMES in diverse resource-constrained settings and optimize research mentorship practices.

# V. An Introduction to Research Mentorship

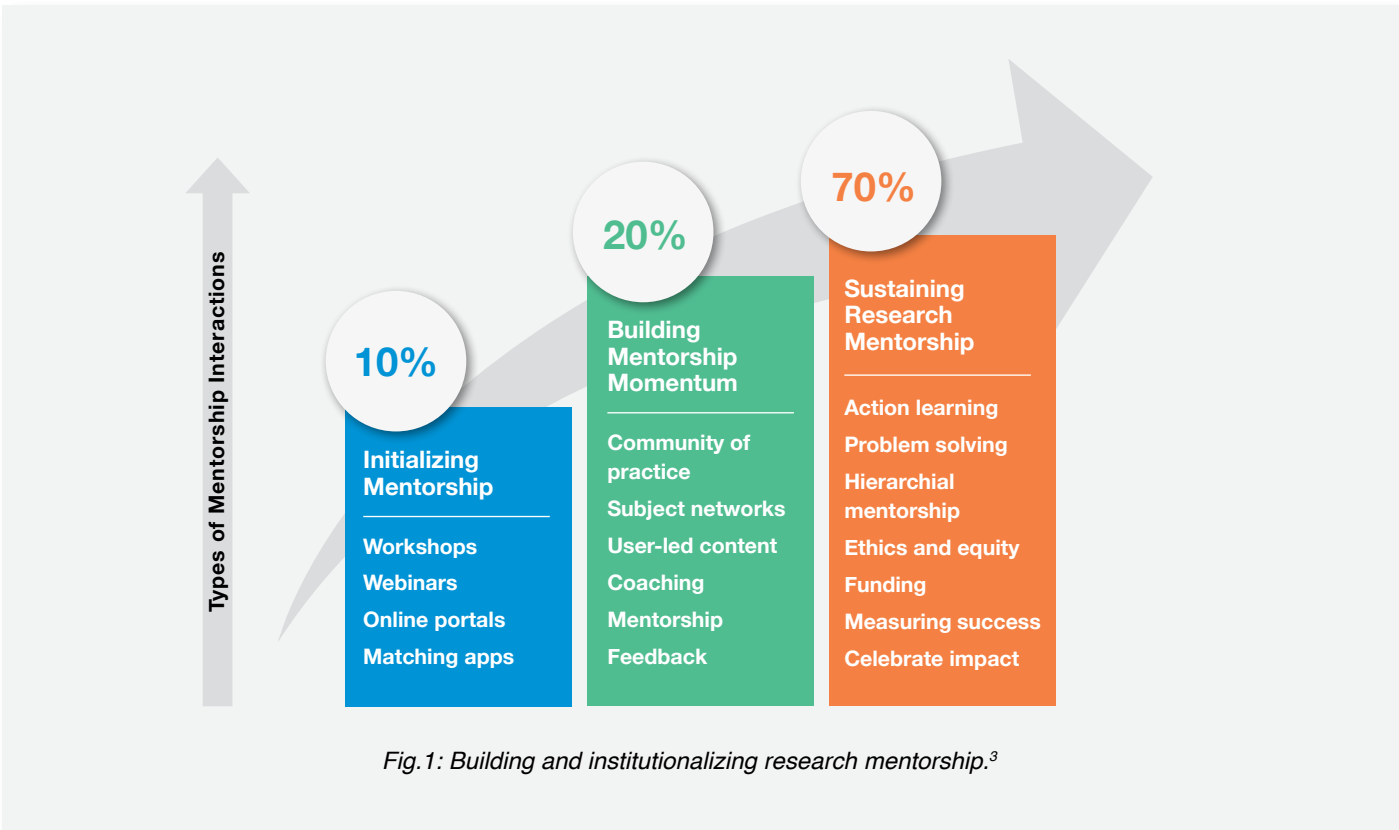
Learning and mentorship are fundamental to effective research around the world. In organizations such as universities or research institutes, experiential learning can play a key role in institutionalizing research mentorship (Fig.1). The life cycle for mentorship in this context can take the form of structured activities (e.g., short-term workshops), learning from others

(e.g., peer-based strategies), and workplace learning (e.g., instilling learning into daily routines of work). This practical guide focuses on institutionalizing research mentorship in low and middle-income countries (LMICs) using some of the tools listed above. We define LMICs according to the World Bank framework.<sup>1</sup>

# VI. Defining institutionalizing research mentorship

In this guide, institutionalizing research mentorship is defined as nurturing research capacity in organizations such as universities, professional associations, and research institutes in order to improve research effectiveness and health equity. Many existing resources

have focused on high-income country contexts<sup>2</sup> with different research cultures, capacities, and outputs to LMICs. This guide aims to offer practical guidance in institutionalizing research mentorship in LMICs.



## VII. Nurturing a ‘pay-it-forward’ culture

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A common theme that emerged in the development of this guide was that of cultivating a pay-it-forward culture. The concept of paying something forward refers to the recipient of an act of kindness giving back to others, rather than to the initial benefactor.<sup>7</sup> For example, an individual receiving help on a research manuscript would then in turn help others to write research manuscripts. This approach creates a virtuous circle where goodwill is passed on through networks. The principle is based on

the upstream reciprocity theory which holds that people who are helped will develop a sense of social obligation, making them more likely to help others. A pay-it-forward culture increases team solidarity, reduces financial barriers, and helps to ignite a passion for research within the team. In resource-constrained settings such team unity is helpful as it ensures that resources are shared, and use is maximised.





# VIII. General principles to institutionalizing research mentorship

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When aiming to institutionalize research mentorship in a broad range of LMIC settings, the following general principles should be applied:

## Consider a holistic approach

Many exceptional trainees and mentors are busy with competing priorities, including their social and family lives. Personal aspects of mentorship should be acknowledged as part of a holistic approach to personal growth and leadership development.

✓ **Pay genuine interest to people's overall well-being, moving beyond a mere professional development focus.**

## Recognize research mentorship as an institutional responsibility

Everybody involved in research needs mentorship, support, and guidance.

✓ **Take responsibility to guide such support, ensuring all researchers benefit from mentorship resources.**

## Consider local fit

There is no one size fits all pattern to institutionalize research mentorship in LMICs. Research mentorship can be introduced and grown in a wide variety of ways.

✓ **Adapt and translate this practical guide based on your local needs.**

## Embrace the digital world, but never lose the personal touch

The digital world offers many opportunities to grow research mentorship, including intra-country and inter-regional connections. At the same time, no electronic engagement could, or should, ever replace in-person meetings.

✓ **Make provision for both electronic and in-person sessions.**

## Build an institutional culture of mentorship

By institutionalizing research mentorship with defined structures and plans, it becomes more sustainable, not depending on a single individual champion.

✓ **Formally consider mentorship as a core function, including mentorship in tenure and promotion policies.**

## Be collaborative and inclusive

Research mentorship has a specific intersectional context affecting people. It is important to address intersectional disparities, encouraging disadvantaged people to serve as mentors, and to receive mentorship.

✓ **Create a collaborative system allowing junior colleagues to provide input including mentoring senior colleagues (e.g., reverse mentorship), identifying systematic bias, and increasing equity. Serving as a mentor has a wide range of benefits, including developing leadership skills, delivering feedback, gaining exposure to new perspectives, and increasing self-confidence.**

## Pay-it-forward culture

Giving can be contagious, helping to ignite a passion for research within teams.

✓ **Purposely cultivate a culture of cooperation rather than competition within research groups, encouraging members to give generously to others without any expectation of personal benefit.**

# IX. Using this practical guide

This practical guide is aimed at groups who plan to institutionalize research mentorship in order to improve research process and outputs. Institutions with a research mandate, including academic institutions, should set up a structure to launch and sustain measurable mentorship activities. Given the diversity in local contexts across LMIC institutions, we would encourage a flexible approach, where this guide could be adapted to the local context.

## The processes involved in a research mentorship programme's life cycle

In getting started, we encourage researchers to identify research mentorship champions within their institution, to identify one or more key areas of focus, and to develop a plan for improving research mentorship within their context.

There are a few key processes for promoting institutional research mentorship within a program. These processes stretch from the early stage of **exploration** into **preparation** and **implementation** and ending with **sustainment** which includes measurement feedback and evaluation (Table 1).

**Table 1. Stages and corresponding activities in implementing institutional mentorship**

Stage	Activities
 Exploration	Exploring existing programs, habits, practices, resources, and potential mentorship programs. For example, in this stage, potential mentors and mentees with interest will be identified.
 Preparation	Planning to launch the mentorship program, defining the purpose and its goals. Devising steps to adapt/adopt existing programs within the institution for mentorship. Consider assigning an office to take lead on mentorship and establish a mentor database.
 Implementation	Matching mentees to mentors, mentorship meetings and trainings, monitoring and evaluating progress.
 Sustainment	Identifying areas for improvement, continuous organisational support, mentees becoming mentors and paying it forward.

Now, let's explore these stages in greater detail:

## 1. Exploration

In this initial stage you will explore existing programs, resources and investigate habits and practices that might help or hinder your research mentorship.

### Identify institutional champions

Institutional champions can help improve research mentorship across the life cycle of a training program. Examples of these include researchers, leaders, and trainees interested in improving research mentorship within the institution. In the context of an institutional environment, champions within the administration are critical.

## 2. Preparation

This is your planning stage where you will define the purpose of your mentorship program and its goals.

### Map and leverage existing resources

Identify, map, and use existing institutional training, research, and resources (especially within the country and region) to support institutional research mentorship. This will help you as you explore how to conduct successful research mentorship but will also extend into your preparation stage as you decide how to leverage the resources you already have.

Examples of existing resources:

- ✓ Local people (e.g., funded investigators)
- ✓ Research grant opportunities (e.g., listservs)
- ✓ Organizational support (e.g., previously funded proposals)
- ✓ Experiences (e.g., training workshops)

Once you start looking, you'll find many open-access tools and resources. National, regional, and global training programs can provide practical strategies to advance institutional research mentorship. Once up and running, someone should be made responsible for curating your online resources.

### Identify existing institutional expertise and gaps in expertise

Compile a list of potential mentors and their relevant expertise, post it online and put systems in place to ensure that it stays updated. This information can be used as a resource for mentees to approach potential local mentors.

### Identify organizations that enhance research mentorship

Identify networks, professional associations, universities, government groups, and other organizations that promote research mentorship. This can help advance existing structures, competencies, and research infrastructure.

### Leverage ongoing research funding

The availability of ongoing institutional research grants can provide a strong foundation for cultivating research mentorship by including trainees. Research funds can be used to provide mentored research opportunities and cultivate mentor-mentee relationships. Identify strong research projects with potential. These projects are often collaborative efforts.

### Define common expectations for the mentor-mentee relationship

This could include expectations about the goals of mentorship, meeting frequency and accountability mechanisms. Defining these expectations will improve relations and avoid potential conflicts.

### Encourage and reward small habits of routine mentorship

When planning, develop and include mechanisms to track, promote, and reward mentorship habits and practices within institutions. Focus on engaging undergraduates in this so that they learn habits of routine mentorship early on.

### Encourage peer research mentorship

Peer research mentorship is when a researcher provides practical research advice to someone at a similar career stage. Plan to introducing peer mentorship early on in research careers (e.g., junior scientists and graduate students). This will help institutionalize research mentorship in ways that last over time.

Peer mentorship may involve:

- ✓ Transfer of knowledge
- ✓ Transfer of skill
- ✓ Providing encouragement
- ✓ Informal support

Peer mentorship can offer opportunities for non-academic support such as coping skills within a research environment or maintaining a healthy life-work balance.

Peer mentorship is not restricted to the local context. ‘Twinning’ is a concept where trainees at similar levels from LMICs and HICs are matched to establish longer-term partnerships to allow for mutual capacity strengthening.

### **Ensure that research ethical review committees require capacity building as part of protocols**

Research ethical review committees should require consideration of local capacity building and mentorship in study protocols submitted for review. This could include formal technology transfer, capacity building workshops, pairing of scholars, and other mechanisms.

## **3. Implementation**

This is when you will launch your research mentorship program.

### **Piloting the program**

Start relatively small and keep it simple. Robust mentoring often happens in an informal way. Over structuring the process will not necessarily give you the results you desire. That being said some leadership and organisation will be needed to ensure that the program gains momentum.

### **Pairing mentors and mentees**

Matching pairs (mentor/mentee or peer mentor pairs) can be done in different ways. Either the team leader can pair people using the knowledge they have of different individual strengths and weaknesses, or individuals can assess their own strengths and/or weaknesses and approach potential mentors/mentees

### **An Individual Development Plan<sup>11</sup>**

This plan can help mentees assess their own strengths and skills and clarify their career goals. It will help them to identify short-term, medium-term, and long-term goals following a discussion with their mentor. Mentees can then use the plan to guide conversations with potential mentorship groups, choosing the research mentorship most suitable to them.

### **Set rules**

Some guidance might be needed in the format, frequency, and length of meetings. Peer mentorship can be informal, where one person contacts the other when there is a need. Alternatively, you might find the need to factor in some ground rules to help the program gain traction.

### **Meeting structure**

Meetings can be virtual or in person. Although in-person mentorship has many advantages, the option of virtual meetups allows people to be paired based on more specific techniques, methods, or approaches, and not just logistics. In either case, setting rules can facilitate research mentorship.

### **Develop cross-institutional partnerships and networks**

Initiate and foster links between key institutions that support research mentorship. Allow mentorship to be an important part of collaborative partnership. These partnerships offer opportunities for information exchange, transferring ideas, professional development, and capacity building.

Some ways to do this:

- ✓ Organise brief talks on research mentorship at prominent conferences or related research events.
- ✓ Consider the inclusion of networking during international meetings at your institution or in your country by organizing a ‘breakfast or lunch with the experts’
- ✓ Provide opportunities for experienced individuals to conduct training sessions to share their knowledge and skills.
- ✓ Take full advantage of senior researcher visits to an institution by providing opportunities for them to share their knowledge and skill.



### **Ensure that research grants support research mentorship**

Pre-award budget details should explicitly include key direct costs associated with research mentorship (e.g., graduate research assistants, salary support for mentors).

Engaging and networking with senior researchers across the world can also create opportunities. They often have established relationships with funders or other potential mentors in different institutions.

### **Direct financial strategy toward research mentorship**

Alternative financing strategies (e.g., crowdfunding), in addition to financial support from training grants and local institutions, can help to sustain research mentorship over time. To learn more, visit the Public Engagement and Crowdfunding in Health Research Guide.<sup>23</sup>

Institutions can encourage staff to apply for mentorship fellowship opportunities and provide incentives or in-kind support for studies that have an explicitly capacity building or research mentorship.

## **4. Sustainment**

This is when you monitor and evaluate your progress to gain valuable insights that can inform your ongoing strategy, and ultimately ensure the longevity of your mentorship.

Monitoring and evaluation of institutional mentorship can demonstrate impact, help iteratively improve, and ultimately sustain programs over time. This is a key process that will determine the success or failure of your efforts. In the next section of the guide, we look at this in more detail.

# X. How to measure and iteratively improve

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Measurement and evaluation of research mentorship are essential components to demonstrating success, rewarding effective mentorship, identifying areas for improvement, and sustaining institutional mentorship over time. Evaluating outcomes provides feedback for research groups, mentors, and mentees on their own personal growth and also how they can help the program improve.

## **Tailor monitoring and evaluation based on the stage of research mentorship**

Appropriate tools for monitoring and evaluating research mentorship depend on the stage of establishment and the local context. Institutions with greater research mentorship may benefit from more detailed metrics.

Variables for measuring the mentorship process include:

- ✓ Metrics for engagement (meeting frequency, duration)
- ✓ Number of staff engaged in mentorship (percentage of active faculty mentors)
- ✓ Self-evaluation surveys for mentors/mentees
- ✓ Mentorship experience and satisfaction using multi-dimensional Likert scales<sup>15</sup>

## **Use quantitative methods to measure research mentorship**

Given the lack of standardised scales to measure mentorship programs from an institutional perspective, any meaningful measurement will require a multi-indicator approach. Examples of such quantitative metrics in understanding the effectiveness of research mentorship may include: the number of trainees, the number of trainees retained in research over time, the number of trainees who secure independent research positions, the number of trainees who secure independent research funding and the number of research mentors.

## **Use qualitative methods to measure research mentorship**

Doing so will build an understanding of the disparities and related intersectional issues that serve as structural

and socio-economic barriers and facilitators to institutionalizing mentorship.

Potential qualitative methods include:

- ✓ In-depth interviews
- ✓ Key informant interviews (face-to-face, virtual)
- ✓ Participant observations
- ✓ Focus group discussions
- ✓ Survey
- ✓ Crowdsourcing open calls<sup>22</sup>
- ✓ Participatory activities

## **Celebrate success within research teams**

Recognize that research is a team effort. Provide incentives, awards, and formal recognition to the units, teams, and structures that nurture research mentorship. For example, when giving awards for mentorship, recognize the larger research group, department, or unit and not to individual.

## **Track and document mentorship activities at different levels of the training process**

Inputs, activities, outputs, and impacts at the respective levels (individual/mentor/mentee, institutional) are important to systematically measure research mentorship effectiveness.

## **Develop tools to measure the institutionalization of research mentorship**

Further work is needed in developing tools to measure research mentorship within research and academic institutions through formal curricula, assigning responsibilities to existing units, or creating new units.

Importantly, contact the HERMES team (see acknowledgements section) if you have any questions, suggestions, or feedback. This first iteration is meant to be further refined based on practical applications and experiences. Feedbacks from such experiences may help strengthen the guide.

# XI. Conclusion

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Institutionalizing research mentorship is essential for the growth and development of research in LMIC settings. This practical guide is meant to not only be a call to action for LMIC institutions to focus more attention and resources on cultivating research mentorship, but also

to provide these same institutions with useful guidance in enhancing research mentorship programs. Several practical steps that are outlined in this guide can help to pave the way for expanding research mentorship in diverse LMIC contexts.

# XII. Open access resources

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## Training Grants and Other Research Funding Opportunities

Fogarty International Center Global Infectious Diseases Grants: <https://www.fic.nih.gov/Programs/Pages/infectious-disease.aspx>

National Institute for Health and Care Research Career Development Support and Training: <https://www.nihr.ac.uk/researchers/career-development-support-and-training.htm>

Wellcome Foundation Career Development Awards: <https://wellcome.org/grant-funding/schemes/career-development-awards>

TDR/SESH/SIHI Crowdfunding Practical Guide: <https://crowdfundinghealth.org/>

## Mentorship Toolkits

Global Health Mentoring Toolkits: A Scoping Review Relevant for Low- and Middle-Income Country Institutions: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6329353/>

Influential Mentors: A Guidebook for Building Mentoring Skills and Capacity (Ethiopian Edition): <https://www.globalmentortraining.com/>

## Other Resources

Research Mentorship in Low and Middle-Income Countries: A Global Qualitative Evidence Synthesis of Data from a Crowdsourcing Open Call and Scoping Review. Pre-print here: <https://www.medrxiv.org/content/10.1101/2022.09.19.22280121v1>

Mentorship and how to conduct research: A research primer for low- and middle-income countries: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718449/>

Strengthening Mentoring in Low-and Middle-Income Countries to Advance Global Health Research: An Overview: <https://pubmed.ncbi.nlm.nih.gov/30430982/>

Conceptual Framework of Mentoring in Low- and Middle-Income Countries to Advance Global Health: <https://pubmed.ncbi.nlm.nih.gov/30430983/>

Science of Effective Mentorship in STEMM (helpful resources on equity in research mentorship): <https://nap.nationalacademies.org/resource/25568/interactive/>

## Institutional Resources

TDR Global: a platform at TDR Global to connect mentor and mentee: <https://tdr.who.int/activities/tdr-global>

Fogarty International Center: <https://www.fic.nih.gov/ResearchTopics/Pages/mentoring-mentorship-training.aspx>

The African Academy of Sciences: <http://aasciences.africa/mentorship-scheme>

The Global Mentorship Initiative: <https://globalmentorship.org/>



# XIII. Annexes

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List of Articles on Research Mentorship in LMICs from the scoping review:

<https://osf.io/n72kz>

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Finalist ideas from the crowdsourcing open call.

Each of these are proposals for LMIC research mentorship programs:

<https://osf.io/5rgj4>

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