

14th Annual Strategic Leaders Global Summit on Graduate Education



The Evolving Role of Mentors and Supervisors in Graduate Education

November 6-8, 2022

The American University in Cairo



Table of Contents

	Introduction and Welcome
2	Suzanne Ortega
5	Panel #1: Postgraduate Mentoring and Supervision in a Global Context Adham Ramadan, Amanda Crowfoot, Philippe-Edwin Bélanger, Moyra Keane, and Shireen Motala
15	Panel #2: Global, Regional, and National Models of Mentoring and Supervision Abiodun H. Adebayo, Marcio de Castro Silva Filho, Aleksandra Kanjou Mrčela, and Janet C. Rutledge
26	Panel #3: Developing Guidelines and Expectations for Supervisors and Mentors David Bogle, Hans-Joachim Bungartz, Helen Klaebe, and Ogbonnaya Inya Okoro
37	Panel #4: Mentoring and Supervision in a Diverse Community Michael Cunningham, Carol Genetti, Grace Ofori-Sarpong, and Fahim Quadir
47	Panel #5: Mental Health and Well-Being in the Supervisor/Mentor Relationship Ali Al-Marzouqi, Graham Hammill, Ayman Saleh, and Erick Sánchez Flores
56	Panel #6: The Evolving Role of Technology in Shaping Mentorship and Supervision Alexander Hasgall, Noor Hazarina Hashim, and Brian S. Mitchell
64	Biographical Sketch of Participants
70	Appendix: Charge to the CGS Ad Hoc Committee on the Global South

Welcome and Introduction: Postgraduate Mentorship and Supervision in a Changing World

Suzanne Ortega | President, Council of Graduate Schools

It is an honor for the Council of Graduate Schools to co-host the Fourteenth Annual Strategic Leaders Global Summit on Graduate Education in partnership with The American University in Cairo (AUC). Before we get started, I would like to express my deep gratitude to Adham Ramadan, dean of graduate studies at The American University in Cairo, for his commitment and support planning this event. As you all know, this has been a turbulent past few years and Adham and his staff – particularly Aya Morsi – have shown tremendous trust and dedication in working with us to develop this year's program.

I would also like to give thanks to our sponsor for this year's event, Educational Testing Service (ETS), for continually demonstrating a deep commitment to graduate education. A special thanks to Alberto Aceredo and Karen Bayas for recognizing the Global Summit's value and prioritizing support for this event. Mentorship and supervision are central to everything we do as administrators and educators. Though mentorship has often been an important part of previous Global Summits, including our last Summit in 2019, this will be the first time that mentorship will be the Summit's sole focus. And it couldn't come at a more important time. The twin reckonings of the COVID-19 pandemic and the mass movement to address racially motivated violence have fundamentally changed the way postgraduate mentoring and supervision are conceptualized and delivered in the United States. The rest of this paper will examine how traditional models of mentorship and supervision were challenged by this twin reckoning and what CGS member institutions in the United States have done to meet them.

The Impact of COVID-19 on Mentorship and Supervision

The COVID-19 pandemic's impact on mentorship was immediate and profound. National lockdowns instituted to prevent the spread of the disease meant that in-person mentorship and supervision was temporarily impossible. Furthermore, disruptions to student learning went beyond removal from campus. Many postgraduate students and mentors took on additional caregiving responsibilities that disrupted scheduled meetings and complicated time-to-degree timelines. Laboratories and archives were closed making it impossible to conduct research. Degrees that required an experiential capstone were complicated by new restrictions on employers and other outside entities. The pandemic exacerbated the digital divide making it even more difficult for students without computers and/or high-speed internet to access higher education as it pivoted online. These challenges were also bore unevenly. For example, one recent study found that while doctoral students received approximately the same amount of mentoring, master's students received less attention when pursuing degrees online when compared to in-person modalities.¹

Despite these challenges, the disruption caused by the COVID-19 pandemic provided an opportunity to re-assess how mentorship and supervision were delivered to students. We found that some students preferred online mentorship and that technological mediation made it easier for them to interact with mentors.² Furthermore, more access to video conferencing technology made it easier for mentors to offer hybrid mentoring approaches that provided opportunities for both in-person and online mentorship. Hybrid models allow for greater flexibility, particularly for postgraduate students with work or caregiving responsibilities that may make in-person mentorship difficult. The response to the COVID-19 disruption of traditional mentorship models allowed postgraduate education to reframe what it meant to make mentorship accessible in an era of improved virtual communication options.

The challenges and lessons from the pandemic will be enduring. It is likely that students whose study was disrupted by pandemic lockdown will need additional support as they progress through their postgraduate programs. This may be particularly true for the bench sciences and other cases – like archival research for historians and observational methods in anthropology – where in-person research skill development was disrupted. Most importantly, however, the pandemic demonstrated the value of flexibility and adaptability. These skills will prove crucial not only in navigating future crises, but also in creating programs and curricula that can meet the needs of a diversifying student population.

Culturally-Aware Mentoring

Unrest following the murder of George Floyd in Minneapolis, Minnesota once again highlighted the centrality of creating inclusive and supportive climates for postgraduate students. As our programs work toward greater diversity and inclusivity, they must reckon with needed changes to mentoring and supervision. Models of mentoring that follow a logic of self-reproduction limit our ambitious goals for graduate education because they rest on the assumption that students want to be like us. Traditional strategies for teaching and mentoring also tend to leave out explicit communications about expectations and disciplinary norms that privilege students already versed in academic culture. Projects such as the Center for the Improvement of Mentored Experiences in Research (CIMER,) the National Science Foundation-supported Center for the Integration of Research on Teaching and Learning (CIRTL,) the Sloan Scholars Mentoring Network, and the Southern Regional Education Board's Teaching and Mentoring Institute are all designed to redress gaps in mentoring of underrepresented minority (URM) students, and in the case of CIRTL, to make teaching practices more inclusive. The University of Michigan has also developed companion guides, "How to Mentor Graduate Students," for faculty, and "How to Get the Mentoring You Want: A Guide for Graduate Students," reinforcing the idea that mentoring is a two-way street where both students and faculty play a role.³

We must learn from, and support, these networks and continue to build on their work. It may also mean looking beyond our campuses for mentors in our local and regional communities. A process of co-mentoring postgraduate students - whereby students have many mentors instead of a single advisor – may provide temporary redress to departments or programs where faculty composition has not yet caught up to the diverse student body.⁴ These mentors may take on a variety of roles and backgrounds. While some may be alumni or community leaders whose relationship to the mentee is one primarily of emotional support, other co-mentors may support student research by connecting postgraduate students with community resources or by networking them with local employers that may hire them after graduation. This co-mentorship model also has value beyond creating more diverse mentoring pools in that it may support a campus mission of broadening career pathways for postgraduate students.

The call for more culturally-aware mentorship comes at a fraught time. Rising nationalism has challenged international research collaborations and limited international student travel. In the United States, certain research questions – such as those surrounding maternal health and wellness - and, indeed, entire fields of study like American history have become politically polarized. Race conscious admissions is under legal threat. International students from certain countries have come to be viewed with suspicion as possible threats to research security. All these issues challenge the relationship between mentor and mentee, between supervisor and student.

Overview of Panels

During the 2022 Global Summit, we will attempt to address the many ways the international graduate education community currently works to support graduate student mentorship and supervision. Addressing challenges of mentorship and supervision means looking beyond the formal relationship between mentor and mentee to the broader institutional climate to assess areas such as mental health and well-being, diversity and inclusiveness, responsible conduct of research and research ethics, and new online and hybrid delivery models for postgraduate mentorship. This year's Summit has been organized around six panels with a final concluding session in which to develop a series of principles and action agenda. These panels will examine global, regional, and national contexts for mentorship and supervision; how guidelines and expectations can be created to clarify mentorship and supervisory relationships; how mentorship can support the creation of diverse and inclusive postgraduate communities; how a healthy and supportive mentor relationship can support postgraduate mental health and well-being; and the role of technology is changing mentorship. These panels will form the framework for this meeting, though conversations should not be confined to these topics.

Mentorship and supervisory relationships are the cornerstone of postgraduate education. The success or failure of these relationships will affect student outcomes and inform their perception of their program and institution. I hope that our discussions over the next two days will provide each of us with new ideas and strategies to take back to our campuses.

Final Session and Next Steps

As in past years, we have formulated a number of challenging questions that lack definitive answers. We do know that mentorship and supervision is a vital topic for all of us. During the final session of the Summit, we will work together to formulate a set of principles and an action agenda to assist our efforts to advance the work of this conference when we return home.

These principles and action agenda will reflect our varied national and institutional contexts, as well as, hopefully, some common themes that unite us. CGS will publish the proceedings of this Summit, including your papers and a final document of key findings, on the CGS website. We will also share this information with our member universities and with the broader postgraduate education community.

I look forward to the exchange of ideas with this eminent and diverse group of postgraduate education leaders as we consider the centrality of Mentorship and Supervision to the postgraduate education agenda and how we can improve upon existing models to benefit our students as they leverage their skills and knowledge to become future leaders.

References

¹ Roberts (2021).

² Rotar (2022), "Online Student Support: A Framework for Embedding Interventions into the Online Learning Cycle." See also, Pollard and Kumar (2019), "Online Mentoring of Dissertations: The Role of Structure and Support."

³ Rackham Graduate School. Mentoring and Advising. <https://rackham.umich.edu/faculty-and-staff/facilitating-academic-success/mentoring-advising/>

⁴ McGuire and Reger (2003), "Feminist Co-Mentoring: A Model for Academic Professional Development"

Panel #1: Postgraduate Mentoring and Supervision in a Global Context

Enhancing Graduate Supervision at The American University in Cairo: Supporting Supervisors and Supervisees

Adham Ramadan

Dean, Graduate Studies, The American University in Cairo

A central component of thesis-based graduate programs is the supervisory relationship. It is a complex form of pedagogy in which the supervisor, typically a professorial rank faculty member, guides the student supervisee through the research and/or scholarly process of producing original work, leading to a thesis/dissertation. This relationship is a unique one necessitating an individualized scholarly guidance that is adapted to each supervisee's needs and conditions. Additionally, it is dependent not only on the supervisor's scholarly attributes, but also on his/her interpersonal and communication skills. While the anxiousness of graduate students about the selection of a supervisor while planning to embark on thesis work is not an uncommon trait of graduate studies, the challenges sometime faced by faculty members – especially junior ones – is oftentimes insufficiently recognized and inadequately addressed.

A successful graduate supervision process therefore needs a support system that aims to address the needs of supervisors and supervisees. An effective system should be well integrated with the graduate academic and administrative regulations and requirements of the concerned institution, and with elements that go beyond guidelines and guiding principles. Ideally, it would include mechanisms for supervisory skills enhancement for supervisors, and a clear process for setting expectations for supervisees.

At The American University in Cairo (AUC), while a Graduate Studies Manual has been in place for a number of years, developed by the university Graduate Advisory Council and comprising details for the different graduate studies procedures and requirements, only some elements of an integrated graduate supervision system are in place. Efforts are underway to complete these elements and further develop the system. Briefly presented here are key elements for this system.

A primary element of the system entails the underlying principles for the supervision process. Supervision is a mutually consensual relation, and both the supervisor and supervisee are willingly engaged in the process. The process must be student-centered and adapted to the student needs – as much as these can be accommodated within the university graduate procedures, requirements and regulations. Supervision is a pedagogical process, and it must remain centered on teaching and learning, and has as a primary aim the academic progress of the supervisee who must be actively engaged in the process and actively responsible for this progress.

With the aim of enabling students to identify and select a supervisor well matched to their needs, support must be made available. As part of the university-wide graduate academic workshops (these are tuition-free workshops providing complementary academic support to graduate students at AUC, together with professional development opportunities), workshops on “how to select a thesis supervisor” are useful for general guidance. Additionally, guidelines are under development to become part of the Graduate Studies Manual, and to be made available to students through their respective graduate programs. Possibly, these guidelines could also become part of the thesis preparation seminars. In all graduate programs at AUC, students must have selected a thesis supervisor before developing and defending their thesis proposal, which is a requirement for applying to and possibly obtaining institutional research grants for supporting their thesis activities. To this end, guidance on how to select a supervisor is crucial.

The development and implementation of a thesis supervision agreement between supervisor and

supervisee is key. This agreement aims at setting clear expectations for mutual responsibilities during the supervision process; the methods and frequency of contact and responses; maintaining records of progress; and mutual commitment to the relevant university requirements and regulations, particularly those related to the study period and the possible interruption of it, academic integrity, the university Institutional Research Board approvals, and the opportunity of institutional financial support of the supervisee's thesis research/scholarly activities.

Documenting supervision and progress towards the completion of the graduate thesis requirements is useful not only for supporting students keeping track of milestones accomplished, but also for program as well as university-wide metrics on progress towards degree completion. This documentation also facilitates addressing potential conflicts. Currently at AUC, the requirements for this documentation are in place, though not widely adhered to. Reservations put forward by supervisors entail concerns about the adverse impact of these requirements on the pedagogical and mentorship aspects of the supervision process, and a perceived administrative burden on supervisors. Underway is an automation initiative for this documentation aimed at alleviating the latter, and plans for campus-wide discussions on the former with the aim of gaining a wider buy-in from faculty members.

Mechanisms are in place for addressing possible conflicts within the supervision process. Though such conflicts have not been common at AUC, they are challenging to address when they arise. The mechanisms in place rely on a number of principles, namely the need to address and resolve the conflicts at the lowest possible level of administration, preferably the program level, with a possibility of incremental escalation where necessary; the need to address and resolve the conflicts using established university procedures and processes for addressing student grievances and conduct; and the possibility of changing supervisors and supervisees. While these principles, and the relevant mechanisms in place, have proven effective, they are regularly reviewed and updated where deemed necessary.

Supervisors' continued engagement in reflective practices on the supervision process, as well as in campus-wide discussions on the pedagogy of supervision, help maintain and enhance good supervision practices. Plans are underway for regular faculty development workshops to this end, where experiences, as well as commonly faced challenges and ways to address them, can be exchanged and discussed. Capacity building opportunities, especially for junior faculty members, can thus be identified and offered.

The Impact of Reforming Research Assessment on Supervision and Mentoring

Amanda Crowfoot

Secretary General, European University Association

Background

In recent years, research assessment and its reform has become a central issue for European universities. There has been a recognition that focusing on a small number of quantitative indicators, especially journal impact factor, harms the scientific system as a whole and early-stage researchers in particular. This movement towards the reform of research assessment originally developed in the context of open access (and the opposition of paywalled journals to open science) but has since expanded to include general issues of open science. This includes the increasing role of FAIR data use (Findable, Accessible, Interoperable and Reusable), as well as topics such as academic careers, research ethics and integrity.

The European University Association (EUA) is working with its member universities, research funders and the European institutions to effect sustainable reform of how research – and subsequently academic careers – is assessed. This had led to an [agreement of reforming research assessment](#), published on 20 July 2022.

Doctoral education will play an important role in this process, including when it comes to supervision and mentoring.

Raising awareness

Reform of research assessment brings significant challenges for supervisors. In the context of doctoral education, supervisors are more senior and experienced academics who are entrusted with the task of preparing early-career researchers for producing a high-quality piece of research whilst developing the necessary skills for a multiplicity of careers within and outside of academia. Supervisors, as more senior researchers, tend to have proven themselves in the traditional research system. Indeed, it is the H-index and the journal impact factor of where they have published which has led to a career on the top of the scientific pyramid.

With the aforementioned reform of assessment, the skills and criteria that led in the past to career success are not necessarily the same ones that make sense for future researchers. However, senior researchers that have operated within the ‘old’ system are often in the position of advising doctoral candidates. There is consequently a need to raise awareness among supervisors and to provide them with the necessary tools to discuss these issues with their supervisees, supporting them to negotiate a research system that will be different to the one in which the senior academic has built their own career.

Respecting Research in All Its Diversity

So, what is the impact of research assessment on early-stage researchers? A central element of the research assessment reform is addressing research in all its diversity. Thus, for research careers it is not only publications that are important, but also other tasks, such as curating data. Whilst supervisors are not the only ones who play a role here, they remain central. It is crucial that supervisors develop a more holistic understanding of tasks, and that they do not assume that doctoral candidates will have the same career path as themselves.

This also has an impact when it comes to evaluating the work of doctoral candidates. The doctoral thesis remains at the heart of the doctorate and is the central assessment criterion of doctoral education. However, we can now see that the doctorate is expanding, and other outputs of research activity, such as

patents, artworks or even datasets, can be the outcomes of a doctorate. Again, this points to an increased need for training and awareness raising around this issue.

There has been a growing realisation in European universities that the quality of supervision can be improved through additional training. As mentioned above, professional skills alone are often not enough to fill the role of supervisor and to give doctoral candidates the necessary tasks and guidance. To date there has been relatively little training of this type, despite the fact that in a survey conducted by the [EUA Council for Doctoral Education](#) (EUA-CDE) 83% of respondents mentioned research assessment as an institutional priority in the context of doctoral education. It is not possible in the context of this short text to elaborate on the different elements of training that might develop. However, it can be assumed that research assessment will have a central place within this.

At the same time, it is also the case that supervisors themselves will not necessarily be able to keep track of all the developments; the issue is both too profound and too complex. Above all, we can assume that in the future research assessment will not be based on following a certain career path or meeting a uniform set of criteria. Career planning will become more complex, with all the problems that this entails, such as excessive demands, additional stress, and so on. Here, doctoral schools also have a great challenge beyond the work of a single supervisor, in that they train the doctoral candidates and support them on their way.

Doctoral Candidates' Agency

At the current time, a large part of the reform effort relies on the commitment of the actors involved – especially institutions. Indeed, this commitment is a prerequisite for the success of the reforms. This is because if the foundations are not securely laid and the evaluation systems remain based on a few individual indicators, it will be impossible to change the system. Having said this, institutional commitments alone are not enough. It is of great importance that the academics involved also commit themselves to this reform process; this also applies to doctoral candidates.

As outlined above, doctoral candidates are confronted with a situation and a future that is different from that of their supervisors. It is important to prepare for this change, and the voice of the early-stage researchers is particularly important. The agreement on reforming research assessment addresses this issue by asking for the direct involvement of researchers at all career stages to review and develop criteria, tools and processes for the assessment of research projects, research teams and researchers that are adapted to their context of application. This can also change the relationship between supervisor and supervisee. If the topic of research assessment suddenly becomes dynamic, rather than being static and based on a few criteria, then it is quite possible that the supervisees themselves will ultimately become experts on the topic. This can also enrich doctoral education.

Supervision as Part of Career Assessment?

A final point worth considering relates to the fact that if the assessment criteria are broadened, supervision itself becomes a subject of academic assessment. Being a good supervisor can suddenly become an argument for promotion. This brings many opportunities, but also challenges. Often supervision is seen as simply part of the academic work, without much additional benefit to the supervisor. An evaluation of supervision and mentoring, as well as of all teaching, can therefore increase quality. At the same time, it is very difficult to measure the quality of mentoring. Doctoral candidates have very different interests and needs, and while some need supervisors who work intensively with them, others need flexibility and limited involvement by the supervisor. Here, too, institutions are called upon to develop procedures that contribute to the valorisation of supervision, while at the same time preserving its diversity, flexibility and orientation towards the individual person.

Université du Québec: Study on Graduate Program Supervision

Philippe-Edwin Belangér

Director of Graduate Studies and Student Success, Institut National de Recherche Scientifique (INRS)

A study of all Université du Québec (UQ)-affiliated institutions was conducted at the behest of a committee on graduate student success. The study looked at graduate-level supervision to better understand the practices of the professors who supervise graduate students, the supervision conditions, and how supervision practices might be maintained, deepened, and enhanced. It was launched in 2016 as a recurring study to be run every six years. The findings here are based on data from the 2016 study. Note that the results from 2022 are forthcoming. A general and recurring study of this type makes it possible to measure supervisory conditions favourable to success and compare them over time to improve support for supervisors. It can also be used for cross-analysis with other studies, such as the Canadian Graduate and Professional Student Survey (CGPSS), to compare the perceptions of students with those of professors.

The priority dimensions for investigation were established by a scientific committee. The 38 survey questions are divided into ten themes, including “perception of the supervisory role,” “supervisory intensity,” and “scientific and professional socialization of students.” We now turn to the main findings.

The study deals with the perceptions of professors. Graduate student supervision is a responsibility shared by several actors, including professors, students, and institutions. Professors nonetheless play the central role and, given the proven importance of that role in student success, it seemed important to understand how professors define and perceive it.

Professors were therefore asked first to describe how much their institutions valued the task of supervising graduate students. A majority of professors (63%) said that their institution valued supervision a great deal or a fair amount, while relatively few (4%) said it wasn’t recognized at all.

In another question, professors were asked to what extent they were called on to play various roles as a supervisor. Unsurprisingly, most professors saw themselves simultaneously as their students’ critics, advisors, reference specialists, educators, guides, and motivators (with 85% or more of respondents indicating they were “absolutely” or “substantially” called upon for those roles). On the other hand, professors seemed to identify little with the role of employer and even less with that of friend.

Professors were posed an open question allowing them to specify other roles they saw as relating to the task of supervisor. Given their close work with students, it’s not surprising that the most common additional role listed was that of therapist or confidant. As some put it, those roles differ from that of friend in that the line of authority inherent in their relationship calls for them to maintain a certain distance from the students they supervise (something that professors learn through experience).

The role of copyeditor also seems to make up a significant share of what supervising professors do (“You spend quite a bit of time teaching underlying skills, such as basic writing and how to organize a text, which few students have mastered. And that’s very time-consuming”). As was the case with psychological support, some professors expressed a wish to step away from that role and focus on other things.

Professors had an open-ended question where they could explain their ideas of what good supervision might entail. The most frequent response was access to the supervising professor, time being seen as a rare and precious resource. (“Presence. Self-giving. I’ve hardly had dropouts in my career, at the master’s or doctoral level. But there’s essentially no limit on the time I make available for my graduate students.”)

In much the same line, the second aspect of good supervision mentioned by professors was regular follow-up, which they defined as holding frequent, regular meetings. Professors saw regular meetings as an opportunity to respond rapidly to problems, keeping students from getting bogged down and missing deadlines. Good communication and a good relationship were also seen as aspects of good supervision. These two aspects seem connected and were often mentioned together by respondents. A good relationship might be seen as the result of good communication: specifically of the ability of the student and supervisor to clearly formulate their respective goals and expectations.

Lastly, the study explored ways forward and possibilities for developing resources to better support professors supervising graduate students. UQ's online self-training module, *Teaching at University*, is a good example of that. Another example is a set of online, for-credit courses available to graduate students to foster the development of their research competences. One of them, "Preparation of an academic paper," aims at helping students prepare the outline of a paper for publication. Another course, "Research project management," offers grant-writing strategies, and "Responsible research practices" has as its output the draft of an IRB application. These are useful in that they respond directly to graduate students' needs and allow them to take charge of their professional development. At the same time, they relieve professors of some propaedeutic tasks, and thus allow them to focus on the more pressing needs of their supervisees. Supervised research is the centrepiece of graduate student education. From professors' point of view, it's very demanding in terms of time and energy and involves not only instructional and interpersonal dimensions, but also administrative, financial, academic, and socio-professional ones. It therefore makes sense to continue the work and delve deeper into the various aspects of graduate-level supervision, in the interests of supporting practices that promote student success.

The Role of Graduate Students in the Supervisor Relationship: A Wider Conceptualising of the Relationship

Moyra Keane and Shireen Motala

University of Johannesburg, South Africa

This paper addresses the broad context of the doctorate and supervision, particularly in South Africa. It focuses on the supervisor-student relationship by including the perspective of the student as well as the worldview of Ubuntu. The essence of supervision is to enable and guide the talented doctoral candidate who, without giving up their cultural identity, is striving to contribute to knowledge and to become a scholar, intellectual, leader, innovator and critical thinker. However, is the nurturing of doctoral candidates lost in the rush to push them through? Is the higher education system sufficiently conscious of the richness of the worldviews that students bring to their studies?

Supervisors are under increasing pressure not only to supervise more students but also to publish and to embrace new modes of online teaching. The South African National Planning Commission (NPC) expects the percentage of academic staff with PhDs to increase from 34% to 75% by 2030; universities are expected to produce more than 100 doctoral candidates per annum per million of the population and to increase the number of postgraduate students to 25% of total enrolments by that year (NPC, 2013).

Within this context, time and energy to supervise post-graduate students are limited. The doctoral students themselves are regulated by institutional time-to-completion policies and prescriptions to complete as quickly as possible and are often required to publish an article before they can graduate. Colleagues frequently ask a doctoral candidate “When will you finish?” rather than “What are you discovering?” or “What have you learnt?” or even “How is your family?” This is not an ideal situation if one wishes to shift the focus from the product (thesis) to the process (growth of the candidate). Furthermore, the continued prevalent apprenticeship supervisory model tends to position the supervisor-student relationship hierarchically, with the student assuming that compliance and alignment to rules is the main requirement or at least a prudent strategy. Such a relationship is not conducive to transformation on any level nor is it a sound grounding for participative democracy (Waghid, 2003).

It is not only this hierarchical relationship that may inhibit students’, and supervisors’, growth but the broader higher education context. Alongside the time and quantity pressures come the commodification of knowledge (Giroux, 2014), managerialism and neoliberalism (McKenna, 2018, 2022; Mazrui, 2002) and globalisation (Odora Hoppers, 2021). In addition, in many parts of sub-Saharan Africa there is an entrenched imported Western education paradigm and worldview which, as Mazrui (1978) wrote over forty years ago, has created intellectual dependence among African students. This creates a reliance for ideas and analytical guidelines on dominant scholars already in the field.

Undergraduate students have often been at the forefront of resisting persistent epistemic violence - the marginalisation of African knowledge, languages and worldviews - yet the supervision and doctoral space, perhaps because the PhD is a degree in a specialised aspect of a discipline, often escapes the focus on decolonising supervisory practice and research frameworks. It could be assumed that, once the student reaches doctoral level and is free of a set curriculum, there would be more autonomy and 15 academic freedom and that supervisors and examiners would welcome the pushing of boundaries in disciplines. There is little evidence that this is the case.

Reflections by two mature, highly competent academics on the experience of being a doctoral candidate are illuminating. As one said, “[My supervisor frequently] asked ‘Constance, what do you think?’ In the early parts of my PhD journey, I genuinely thought the question was unnecessary. She was my

supervisor and I was only a student and, in my experience, students were there to be seen and not necessarily to be heard." Asked what her role was in the supervisory relationship, another responded, "I never thought I had a role. I was just a student under supervision. I thought that to be a supervisor means you have superior vision." To underline the pervasiveness of mimicry and compliance even within an area of disruptive inquiry, both of these students were studying Indigenous Knowledge Systems (Keane, Khupe & Mpofu, 2022).

Reconstituted relationships need to be based on dialogic learning where participants accept moral responsibility for each other. Empowering relationships are power-with relationships (Okeke & Van der Westhuizen, 2022) and the role of the student needs more attention in postgraduate pedagogy. Lee (2007) recognises Relationship as one of the key elements of supervision; the other elements in her model (not necessarily discrete and separate) are Emancipation, Critical Thinking, Enculturation and Functional. Gray and Crosta (2019) propose a model with three similar components: Enculturation, Emancipation and Healthy Relationships. Wadee, Keane Dietz and Hay (2010) propose a learning-centered, reflective and holistic practice; this too centres on sharing power and trust.

This relationship is a critical factor in PhD completion (McKenna, 2018). It is also a key aspect of decolonising doctoral pedagogy by appreciating and entering into the space of Ubuntu (commonly defined as "I am because of you"). Not only does the student have greater agency but so too do all those connected with the doctoral journey: colleagues, mentors, coaches, supervisors, family members, writers.

Ubuntu centres on building community, learning to be together and caring rather than overemphasising efficiency (Keane, 2021). Decolonisation requires negotiated world views, cosmologies and relational epistemologies (Van der Westhuizen, 2022). If we do not take the essentials of an African worldview into doctoral pedagogy and writing, we risk missing a key opportunity to decolonise and transform knowledge creation and an African identity at this high level of educational qualification. Examples of student agency in a decolonised supervisory space include decolonising ethics; decolonising the language of the thesis; courses on cognitive justice in supervisory courses and programmes; developing cultural intelligence; group assessments in doctoral courses or presentations; decolonising research methodology; owning one's positionality (in a thesis statement); considering who benefits from the research; recognising who are the elders (apart from academic researchers); giving true credit to the community for the knowledge created; and challenging colonising processes and norms.

All of these aspects have emerged in the Southern African context. The processes of change, while exciting, are however slow.

References

- Giroux, H.A. (2014). *Neoliberalism's War on Higher Education*. Chicago: Haymarket.
- Gray, M.A. & Crosta, L. (2019). New perspectives in online doctoral supervision: a systematic literature review, *Studies in Continuing Education*, 41:2, 173–190, DOI: 10.1080/0158037X.2018.1532405
- Keane, M., Khupe, C. & Mpofu, V. (2022). Reflections on Transformation: Stories from Southern Africa. In A. Nicolaides, S. Eschenbacher, P. Buergelt, Y. Gilpin-Jackson, M. Welch, M. Misawa (Eds), *The Palgrave Handbook of Learning for Transformation*. Springer: Nature.
- Keane, M. (2021). 'Decolonising the doctorate and postgraduate supervision in South Africa.' Panel Discussion SAERA Conference: Education for Inclusivity and Sustainability in Times of Increasing Inequalities. University of the Witwatersrand, 10-12 November 2021. Virtual Conference.
- Lee, A.M. (2007). Developing effective supervisors: Concepts of research supervision. *South African Journal of Higher Education*, 21(4): 680-693. Mazrui, A. A. (1978). *Political values and the educated class in Africa*. Berkeley an Los Angeles. University of California Press
- Mazrui, A. A. (2002). Neo-dependency and Africa's fragmentation. In P. H. Coetzee & A. P. J. Roux (Eds.), *Philosophy from Africa* (2nd edition). London: Oxford University Press: 528-542.

- McKenna, S. (2022). Neoliberalism's conditioning effects on the university and the example of proctoring during COVID-19 and since. *Journal of Critical Realism*. DOI: 10.1080/14767430.2022.2100612
- McKenna, S. (2018). Here are five signs that universities are turning into corporations. *The Conversation*, 13 March. Available from: <https://theconversation.com/her...>
- National Planning Commission (2013) National Planning Commission (2011). *National Development Plan: Vision for 2030*. Pretoria, South Africa: National Planning Commission.
- Odora Hoppers, C. (2021). Research on Indigenous knowledge systems: the search for cognitive justice. *International Journal of Lifelong Education*. 40(4): 310- 327, DOI: 10.1080/02601370.2021.1966109
- Okeke, C.C. & Van der Westhuizen, G. (2020). Learning from professional conversation: A conversation analysis study. *South African Journal of Education*, 40(1): <https://doi.org/10.15700/saje.v40n1a1777>.
- Van der Westhuizen, G. J. (2021). 'Conversation pedagogies, knowledge plurality and doctoral education.' Paper presented at the online conference *Peak Performances. Covid-19 and the Transformation of Teaching and Learning in Higher Education*. University of Johannesburg.
- Wadée, A., Keane, M., Dietz, T. & Hay, D. (2010), 'Effective PhD Supervision, Mentoring and Coaching.' 2nd Edition. *South Africa-Netherlands Research Programme on Alternatives in Development*. The Netherlands: Rosenberg Publishers.
- Waghid, Y. (2003) Democracy, higher education transformation and citizenship in South Africa. *South African Journal of Higher Education*. 17(1): 91-97)

Panel #2: Global, Regional, and National Models of Mentoring and Supervision

Covenant University Innovative Model for Mentoring and Supervision at Postgraduate School

Abiodun H. Adebayo

Vice-Chancellor, Covenant University

Introduction

Covenant University mentorship and supervision are customized to achieve global employability demands to produce a pool of future leaders without compromising the institution's core values in our mission to raise a new generation of leaders. The University has established novel learning relationships that help students improve their academic, personal well-being, and professional circle.

One-on-One and Group Mentorship

The moment a candidate is admitted to a postgraduate programme, an experienced faculty is assigned to provide guidance and support to the student. The focus is to assist students in developing skills and knowledge in a specific area of interest or assist in streamlining their already developed broad research ideas.

Our mentorship model is an 'on-boarding' process that takes cognizance of the fact that Covenant is a mission-based university and the newly admitted students have diverse academic and cultural backgrounds moulded from various institutions across the country and overseas. The mentor-mentee approach enhances students' smooth and quick transition into our university. This is also to ensure that they understand the unique culture of our university so that adaptation can be faster and easier.

Usually, in departments with a larger student population such as Architecture, Business Management, and Economics, an experienced senior faculty is assigned to more than two mentees. In allocating mentees to mentor-senior faculty, deliberate effort is made to match mentees' research focus with the faculty's research field. Thus, the procedure enables mentees to receive expert guidance and support to develop their skills and knowledge in their preferred study area.

Generally, the practice has contributed immensely to the personal, academic, and professional growth of Covenant University postgraduate students. Also, it has enhanced students' ability to immediately take off in the pursuit of their research interests without wasting time. Through this procedure, the majority of the students have been able to develop and write acceptable journal articles within their first year in the postgraduate programme.

Supervisors and Multiple Examiners' System

A postgraduate student at Covenant University, especially at the Ph.D. level, is not restricted to only one supervisor. It is a Senate-approved rule that a postgraduate student must have two (2) assigned Supervisors. The supervisors are designated as main supervisors and co-supervisors and the Senate must approve their appointment. Moreover, our model provides for multiple examiners (2 College Examiners and 1 Representative from the school of postgraduate studies), among others. The notion of a main and co-supervisor makes it easier for the candidate to blend and integrate expert ideas in his or her research work. Also, the involvement of multiple examiners enables the student to work with a team of examiners who are experienced faculty that will guide the candidate appropriately from the inception of the thesis (proposal and post-field seminar) to the final oral examination. The participation of examiners in the thesis development has provided a unique opportunity for the student to draw from the faculty's wealth of experience, resulting in the timely completion of their programmes.

What we did differently during the pandemic and how sustainable were such practices?

Mentorship and Teaching during the COVID-19 Pandemic

The incursion of the COVID-19 pandemic that disrupted academic activities in most institutions brought a paradigm shift in the teaching and mentoring styles at Covenant University. Covenant University, an acclaimed IT-driven university, leveraged its IT capability and explored online teaching through zoom, video conferencing, and other social media tools like WhatsApp. During this period, we held live classes online. Lecturers were able to fix teacher interactions with students based on mutual scheduling. Apart from enhancing teacher-student cordial relationships and communication, it doubtlessly enhanced learning-at-comfort for the students.

Adoption of Online and Electronic Copy Thesis/Dissertation Supervision

Among the major prescriptions for preventing the spread of COVID-19 is social distancing and restriction of movement promulgated by many governments. To safeguard students' interest (for continuous learning), and to avoid disruption of Covenant University's academic calendar, the faculty through the School of Postgraduate Studies (SPS) continued theses/dissertation supervision by adopting soft copy submissions, while the SPS replaced the traditional hard-copy processing with electronic copy only. The new approach has time and cost-saving derivatives for the University and students, such as the cost of dispatching hard copies of theses/dissertations to two (2) External Assessors located in two different universities and the cost of dispatching to one (1) External Examiner. Besides, students from printing almost 10 copies of their thesis/dissertation at each stage of their presentation (Departmental presentation (proposal and post-field), College (proposal and post-field), the Assessors, and the Examiner stages.

Viva Examination via Zoom

Similarly, due to Covenant University's desire for an unbroken academic calendar amidst the COVID-19 mandatory social distancing and movement restrictions, the SPS introduced virtual viva examination. The approach enables all examiners and candidates to converge online (through Zoom) and conduct the required examination. This has worked perfectly and has been sustained.

The virtual viva initiative has saved enormous time and finances that were hitherto devoted to on-the-ground arrangements, such as the cost of transporting and accommodating External Examiners, hard copies of thesis/dissertations couriered to External Examiners in readiness for the viva examination, and printing and stationery expenses, etc.

Skills Empowerment/Development

One of the unique features of our postgraduate students' mentoring and supervision model is their exposure to new skills and creativity. Covenant University helps students to learn new skills that are essential for life, academic, and professional success.²¹ This begins with our unique Entrepreneurial Development Studies (EDS) where students are trained on their chosen vocations. These custom-built vocational programmes are free and mandatory. We currently run vocational training under the EDS in *tailoring (including fashion designing), food processing at SME level, production of household goods such as research-proven disinfectants formulations, handbags, shoes, soap making, several statistical software*, and so on. The overall idea is to produce self-reliant postgraduates who could add value to their communities and their respective countries.

Seminars

At the onset of thesis/dissertation supervision, postgraduate students are encouraged to make seminar presentations before an audience of faculty and other postgraduate students where comments are harvested for the improvement of the paper presented. Postgraduate students are required to present one or two seminars and attend seminars presented by their colleagues and faculty. The occasion is often used to train postgraduate students on logical and verbal communication skills, and empower their public

speaking ability and capacity to accommodate and respond to constructive criticisms from their colleagues and lecturers. The seminar regime helps to fortify the candidate against crowd fright and build their capacity for public debate and response to communal issues.

Workshops

Our workshops are hands-on training for all postgraduate students. The training is continuous. All our workshops are designed to mentor and prepare our students for contemporary job interviews, internal and external tests/exams, and provide them with the opportunity to meet professional experts in person. Students' participation in our workshops enhances their knowledge and skills in the topical issues of their fields of study.

References & Citations Management Tools (Zotero, EndNotes, Mendeley, etc)

Commonly, postgraduate students struggle with references and in-text citation management while preparing and presenting their Dissertation/Thesis. To help our students with this challenge, the School of Postgraduate Studies organises workshops for the students on how to do standard, quick, less stressful references, and in-text citations. They are instructed on how to use world-class tools such as Zotero, EndNotes, Mendeley, and so on. Also, students are exposed to MS Word tools for automating a Table of Content. Moreover, the workshops are designed to acquaint students with the variations in citation styles required by different disciplines and departments. Additionally, students are taught how to create accurate Bibliography and Referencing for journal articles, books, thesis, conference papers, etc. In sum, these workshops empower participants toward achieving error-free referencing, avoiding the laborious manual approaches and unnecessary confusion and agitation during oral examinations, and saving time. The resource persons for our Postgraduate School workshops are sourced from our faculty base and international publishers such as Elsevier Inc.

Elsevier Capacity Building for Postgraduate Students

The partnership between Elsevier and Covenant University avails our students of the opportunity to access Elsevier content and analytical tools. It includes access to journal articles in Elsevier repositories, the opportunity to search for literature by topics, and the computation of publication statistics over a period by topics. The partnership also includes support for capacity building for faculty and postgraduate students. The capacity enhancement focus includes how to convert a thesis/dissertation to a journal article, how to write "auctionable" abstracts, and how to write without plagiarism. The academic writing exposure through Elsevier has helped our faculty to provide well-informed guidance to the students and foster improvements in the teaching modules in some areas.

Recently, Elsevier in collaboration with Covenant University organised a virtual training for all Postgraduate students on topics such as *Writing without Plagiarism and Proper Citations using Mendeley*. The training was targeted at developing the writing skills of students for research papers, essays, and reports, and how to avoid plagiarism-related mistakes, among others.

Publication Requirements Before Graduation Thesis/Dissertation

As part of efforts to uphold the culture of quality academic writing in the School of Postgraduate Studies, a postgraduate student is encouraged to learn the art of writing journal articles, reports, and book reviews, and demonstrate the same by fulfilling the mandatory publication requirement as approved by the Senate. (i) Ph.D. degree students must provide evidence of publishing three (3) research papers in Thompson Reuters or SCOPUS-indexed outlets. These could be two papers in conference proceedings and one in a Journal or one paper in a conference proceeding and two in a Journal). (ii) Master's degree students are required to publish a minimum of two (2) research papers in Thompson Reuters or SCOPUS-indexed outlets. These could be one paper each in conference proceedings and a Journal.

Anti-Plagiarism Policy

While teaching and encouraging our students to write scholarly papers and be visible in numerous high-impact outlets, the University policy on anti-plagiarism remain binding on every student, faculty, and staff. Postgraduate students are often acquainted with the rules and regulations guiding plagiarism. Covenant University places a very high premium on intellectual honesty and reputation. The faculty, staff, and students are often encouraged to be committed and guided by a deep conviction of the worth and dignity of the advancement of knowledge. Since its inception, Covenant University students have been committed to academic honesty, devoting their energies to developing and improving their scholarly competence as well as fostering conditions of free inquiry in the pursuit of truth.

Internationalization at the University of São Paulo Guided by the 2030 Agenda

Marcio de Castro Silva Filho

Provost, Graduate Studies, University of São Paulo

The creation of universities in Brazil is considered a recent process as compared to countries in Europe and North America. The great majority of Brazilian universities were established in the 20th century, although the higher education system is still in expansion. Public universities are ranked in the top positions in international rankings and represent approximately 22% of the enrolled undergraduate students. On the other hand, they concentrate around 90% of the graduate students and the vast majority of the scientific production, in particular the most high-quality research. In Brazil, it is important to point out that approximately 90% of the Brazilian papers indexed in international databases are produced within graduate programs. Brazil is placed among the top 13 countries in terms of scientific production, which strongly indicates the major role of the graduate system in promoting strong scientific, technological, social, and cultural development. It is also worth noting the social role of the university, which is frequently not captured by international rankings. USP has three large hospitals which are the unique access to the health system to hundreds of thousand people. In addition, its museums and a wide range of cultural activities are regularly attended by several thousands people every year. This represents the only alternative to a significant part of the society, specially with lower income. This huge effort in terms of making bridges with the surrounding society is unfortunately not really captured or recognized by these rankings. Regardless the characteristics of each ranking and the intrinsic profile, there is a strong and sustainable movement to improve its reputation and recognition, namely, creation of programs toward a better and all-encompassing internationalization. Therefore, internationalization of graduate studies has gained much attention in the last ten years and can be viewed as the driving force in increasing recognition of USP and other Latin American universities by international peers.

Brazilian graduate system was nationally regulated in 1965. USP was established in 1934 integrating teaching and research as the major pillars in higher education. In 1969, the graduate system was formally created and regulated. Since then, USP has titled more than 260,000 master/PhD degrees. Before the COVID-19 pandemic, USP delivered 3.000 PhD and 4.000 Master degrees per year. Actually, USP has 28.000 graduate students. Approximately 5% of enrolled PhD students (15.000) have an experience abroad during PhD. Further, USP still struggles to attract foreign staff and to disseminate a minimum curriculum in English. Many efforts have been made throughout the years and we can see a trend toward improvement in those issues. One strategy that is providing clear positive and immediate results is the promotion of internationalization in graduate studies.

Besides promoting student and staff mobilities in higher distinguished universities, internationalization in graduate studies goes beyond. As part of this process, we can foresee an increase in co-supervision of students by foreign professors, joint disciplines and seminars, participation in international research funding networks, creation of international Master or PhD programs, double-degree agreements, and transfer of knowledge to local universities. Although some of these processes may have a different 24 framework, we can imagine that to focus on a specific common subject might incur in fast progress, such as, the promotion of internationalization through the 17 Sustainable Development Goals (SDG), the 2030 Agenda.

First, the understanding that 2030 Agenda needs to be integrated and developed at the graduate programs. Second, the recognition that universities might have a stronger skill in a specific (or more than

one) SDG is important and should promote institutional policies. Finally, to be aware of the strategies of partners universities and its intrinsic research policies is *sine qua non* for a better matchmaking.

The Universidade de São Paulo (USP) is fostering the commitment with 2030 Agenda in all sectors. Research at USP is stronger in SDG 02 (Zero Hunger), 03 (Affordable Health), 14 (Life below Water) and 15 (Life on Land). In 2021, over 40% of our publications with international coauthors were associated with any SGD, being rightest for SDG 14 (Life below Water) and 13 (Climate Action). In 10 years, USP increased in 10% the international collaboration associated with SDG, and in 16%, considering with Latin America.

An international effort towards 2030 Agenda integrated to the graduate system should be fostered in order to face this challenging issue globally.

Trends and Prospects of Excellence of Supervision in Europe

Aleksandra Kanjou Mrčela
EUA Council for Doctoral Education

Success of a doctoral project has always depended on quality of supervision. However, it seems that today that quality is measured by considering more tasks and features of mentoring/supervision than ever before. Doctoral candidates are more numerous and diverse, they have different backgrounds, experiences, ambitions, needs, and planned career paths. Academia and its interaction with other parts of society is changing and evolving. Changing doctoral education is embedded in a complicated social, political, and economic environment. All that creates new opportunities and challenges for excellence of supervision. The following thoughts are based on insights gained from the work of EUA-CDE, experiences in leading The Doctoral School of the University of Ljubljana and involvement in international debate on supervision in doctoral education.

In June 2022, the EUA Council for Doctoral Education has released the publication *Building the Foundations of Research - a Vision for the Future of Doctoral Education in Europe* that identifies new perspectives in doctoral education and provides guidance to European universities for the development of further strategies in this area. The document defines **supervision as one of the central elements of doctoral education**.

The EUA-CDE survey published in 2017/2018 showed that **supervision in Europe is organised in diverse ways**. Conventions, written and other rules regarding supervision vary among disciplines, universities and countries. Half of European universities have a supervisory team (with co-supervisors and advisers from inside or even outside the institution) while the others rely on a single supervisor. A supervisor is expected to support the doctoral candidates through the entire research endeavour. In some European universities, supervisors are members of assessment committees, while in others supervisors take care of the quality of doctoral research, but do not evaluate the results. Training of supervisors informally starts already during doctoral education when their own experience prepares doctoral candidates for potential supervisory role. Universities vary regarding formal support and training of supervisors. The work of a supervisor is increasingly complex, as the environment and expectations of excellent research as well as of general well-being of doctoral candidates are evolving. Supervisors are confronted with the problems of doctoral candidates without always having enough resources to help in their resolution, both in terms of time and competencies. Supervisors should be role models to their doctoral candidates as excellent researchers themselves. At the same time, they are expected to support candidates in many other ways: providing candidates with skills in scientific publishing and academic networking; making sure that candidates perform ethically and methodologically excellent work and act socially responsibly and professionally impeccably. Supervisors should support candidates in communicating their results to the general public in a concise and comprehensible way. As many candidates are in a precarious economic position and under different stressors connected to their research work, supervisors often provide them with mental and other support. Some of the supervision tasks are potentially conflicting and need to be dealt with in search of an optimal equilibrium – e.g. between work and time discipline on the one hand and freedom and care for work-life balance of candidates on the other.

Supervision could be one of the most important and enriching human encounters for all involved. However, as doctoral research projects are relatively long-lasting and complex endeavours, issues could occur as well. These could arise because of dependency relationship between a candidate and supervisor,

conflicts regarding organisation of work, authorship and ownership of results, work climate, and other reasons. Some institutions stimulate forming communities of doctoral candidates and sometimes these evolve informally. In both cases, strong peer communities perform an important role of informal supervision and collegial support.

More than before, excellent supervision is today seen as a **cooperative endeavour** to which both **supervisors and supervisees, but also the environment/institution** need to contribute and function. Doctoral schools are increasingly taking an active role in supporting the supervision and it could be expected that the trend will be continued.

Based on the observed tendencies and needs of doctoral candidates it could be said that supervision as a crucially important feature of doctoral education should be suitably adapted and supported. The Vision for the Future of Doctoral Education in Europe suggests that universities should invest in **the training of supervisors**, enabling them to embrace their roles fully and ensure that the doctoral school or/and other institutional environment plays its appropriate supportive role. A proper **balance of predictability and informality** should be designed. Key aspects of supervision should be previously agreed on and made transparent, without harming informal encounters, collaborations, and relations of trust between a supervisor and supervisee. In addition, universities should install bodies to which doctoral candidates and supervisors can turn in case of conflicts. Universities may also enable **new forms of supervision**, including joint and/or virtual supervision, as long as they are fit for purpose. Institutions also need to make sure that a supervisor and candidate have the appropriate **research environment** suitable for a generation of new and original ideas and knowledge.

International Partnerships for Cooperative and Joint Graduate Degrees

Janet C. Rutledge

Vice Provost and Dean of the Graduate School, University of Maryland Baltimore County

There are several approaches that universities are taking to provide opportunities for students to pursue graduate degrees that allow a portion of the research or coursework to be completed at a university in another country. Most often these take the form of dual degrees or joint degrees. For discussion purposes these two types of degrees are being defined here with recognition that there are many models and titles used for these types of collaborations. Dual degrees involve completing all the requirements for two separate degrees, often with some of the requirements being counted toward both degrees. There would be separate master's theses or PhD dissertations for each degree, and the two degrees may or may not be completed at the same time. Joint degrees require much closer collaboration as all the coursework and thesis/dissertation research count toward both degrees. There is one thesis or dissertation that can be defended once with a joint committee or repeated at each university with collaborative discussions on the outcome. Typically, both degrees would be completed at the same time. UMBC has had successful partnership agreements with both models. These models require that both universities have authorization to offer the degrees, which excludes a large group of universities from participating in dual/joint degrees, particularly at the PhD level, if they do not offer those degrees.

Another model, that will be called a cooperative degree here, involves two universities partnering together on a degree that will be awarded by one of the universities. UMBC has begun to develop partnerships with the Osnabrück University of Applied Sciences (Hochschule Osnabrück) and the Cologne University of Applied Sciences (Technische Hochschule Köln or TH Köln) in Germany to offer a cooperative PhD program that is awarded by UMBC. The Universities of Applied Sciences (Hochschules) do not have authorization to award PhD degrees. The faculty are involved in cutting edge research and have state of the art facilities to conduct the work. The cooperative PhD requires the students to take coursework at UMBC and the partner university. The PhD is jointly supervised by a faculty member at the partner university and at UMBC with the student spending time at both universities to complete the dissertation research.

This presentation provides details of two cases studies and plans for future expansion to other Hochschules and to master's level exchange opportunities.

Case 1

A master's student at TH Köln was awarded a Fulbright Fellowship to study for one semester at UMBC. His plans were interrupted due to the COVID-19 pandemic, so he took UMBC classes online from his home in Germany. During that semester he was also able to develop closer ties with faculty in the department at UMBC. The following fall semester he was able to complete his Fulbright supported semester in person. He took additional classes and continued work on his master's thesis with shared supervision from faculty at both UMBC and TH Köln. He returned to Germany and completed his degree at TH Köln with cooperation from UMBC. He was admitted to the PhD program at UMBC and started in the fall 2022 semester. It is anticipated that the dissertation committee will be co-chaired by the faculty supervisors from UMBC and TH Köln, and the committee will have 2 additional faculty from UMBC and one additional member from TH Köln. The partnership has been formalized through a Memorandum of Understanding (MOU) Agreement that details the responsibilities and commitments of both sides.

Case 2

A faculty member from UMBC who is working to develop the partnerships with the Hochschules has visited several universities to explore interests and areas of collaboration. During a visit to a lab at Hochschule Osnabrück that was engaged in research similar to his own, he realized that there were things that they wished they could do but didn't have the equipment. It turned out that his lab at UMBC had that capability. He further discovered that there were capabilities in the lab at Hochschule Osnabrück that were missing in his own. This evolved into a productive research partnership. One of his students traveled to Osnabrück to conduct some experiments for her PhD dissertation research. She later returned to spend a full academic year in Osnabrück taking a few classes and doing research, and her UMBC PhD is now being jointly supervised by a faculty mentor at each university.

Future Expansion

Discussions are in progress to identify additional students who would be good candidates for the cooperative PhD program between UMBC and one of the Hochschules. There are plans for two-way faculty visits to help catalyze research partnerships. Funding opportunities are being explored for student and faculty exchanges. One UMBC faculty member has started a collaboration with a colleague at Hochschule Bonn-Rhein-Sieg and has applied for a Fulbright Fellowship for an extended collaboration there. This collaboration has already resulted in a session at the World Engineering Education Forum (WEEF) in South Africa at the end of November that will include graduate students from US, Portugal, Germany and South Africa.

The Universities of Applied Sciences offer opportunities for graduate student exchange scholars. In the future we would like to have groups of UMBC students in the master's phase of our accelerated bachelor's/master's program spend a semester at one of the universities engaged in coursework and projects in cooperation with area companies.

In conclusion, we are excited at the many possible models for international partnerships for cooperative, dual and joint degree programs. There is great interest in the development and success of these efforts. These partnerships can also result in additional collaborations to provide global experiences for our students.

Panel #3: Developing Guidelines and Expectations for Supervisors and Mentors

Complexity and Consistency in Mentoring Doctoral Candidates

David Bogle

Pro-Vice-Provost of the Doctoral School and Early Career Researchers, University College London

This short paper was developed from reflections by the LERU DOCT group, which will publish a LERU paper on 'Productive Doctoral Supervision', together with experience and examples from UCL. I would particularly like to acknowledge the two lead authors of the LERU paper, Claudine Leysinger (University of Zurich) and Helke Hillebrand (University of Heidelberg) and other members of LERU DOCT.

It is vital to remember that people, as trained researchers, are the key 'output' of doctoral education. We aim to produce 'creative critical autonomous intellectual risk takers'⁵ as drivers of innovation in society both within and beyond academia. The thesis, papers, patents, data and the doctoral examination are all evidence of the success of this process but developing trained researchers is the key aim. This means that mentoring of the doctoral candidates is critical. Mentoring should provide guidance on the 'scientific' aspects of the project alongside supporting and facilitating the development of the skills, expertise and confidence of the candidates and helping them build networks together with knowledge. Research involves much uncertainty and ambiguity which supervisors must help the doctoral candidates to navigate and learn to become comfortable with to prepare them for a range of careers. This makes mentoring a very complex task. While once this was entirely up to a single supervisor this expectation, which was always unreasonable, has changed.

Within Europe there are many different ways of operating. For example doctoral candidates can be staff or students. Organisational structures vary considerably. There are a number of examination processes, the format of the thesis varies, rules vary as to who can supervise, and in some cases the regulations for study are different between Faculties and disciplines. However we have found that the principles for good mentoring are common to all. It is most common to refer to the 'supervisor(s)' who takes the lead on mentoring the candidate.

A key element of the mentoring task is in managing expectations of the candidate: about the standards expected, the uncertain and ambiguous nature of research, the practical ways of working, what can be expected of others in the team and the institution, and also of the career potential. The expectations of all parties need to be discussed openly and honestly early in the doctorate.

It is well documented that the majority of doctoral candidates will move to careers beyond academia in the short or longer term. There are many figures quoted for the percentage that will continue to long term academic careers – from 3% to 20% - but the majority will not. Supervisors and Universities need to be open about this and help to provide guidance about careers with the preparation for the diverse range of careers open to them. They should help them to be able to articulate and evidence the unique skillset that doctoral training provides. This can be difficult for many supervisors who may have little or no experience of careers beyond academia. To provide consistent support Universities need to provide such advice through Careers Services with specialist support for doctoral graduates.

Supervisors cannot provide all the support and guidance that a candidate might need during their doctorate. Universities need to provide support services, such as Careers advice, skills training, an ombudsperson and wider research networks. It is now common in Europe for doctoral candidates to be supervised by supervisory teams who can provide a wider range of expertise and advice than a single supervisor would be able to. In the UK it has long been required that all doctoral candidates must have at least two supervisors. Across Europe the Thesis Committee approach is becoming more common.

Aside from the direct advice from the supervisory team, the mentoring task is much aided when the candidate is part of a vigorous research environment. Structured doctoral programmes are now typical in research Universities, where candidates are members of a cohort who can share some common experiences including induction, relevant disciplinary or skills training experience, career preparation etc.. It allows them to learn from peers and to discuss common problems, sometimes before they raise them with supervisors. These cohorts usually have a common disciplinary or research theme which also helps to develop intersectoral links – with companies, charities, cultural organisations for example who also have an interest in the area and in the candidates as future employees. Working in a cohort within an academic Department also helps connect with international networks through all members of that Department. Research is increasingly interdisciplinary so, while the cohort may all belong to one discipline, the programme, as well as the supervisory team, can facilitate links to programmes in other disciplines. At UCL many doctoral projects have supervisory teams drawn from different Departments or Faculties. This is made simpler by there being one set of doctoral regulations for the whole of UCL and once a supervisor is approved they may supervise a candidate registered in any of the eleven Faculties. Supervising in teams takes pressure off the principal supervisor making the mentoring task more manageable.

However, the task is complex. There is a need to be aware of all the services provided by the University to help as well as guiding the mentee in their development and their project. The mentoring task is helped by good training for supervisors provided for developing supervisory skills. The LERU DOCT Policy Group believe this should be mandatory for all supervisors. It should provide information on regulations and support services but the most important element is to give new supervisors space to discuss and reflect on good supervisory practice as they have experienced it (as doctoral candidates and in any supervisory experience that they have already had). It allows supervisors to reflect on specific difficulties they may be having, or have had in the past, and discuss the issues and ways to resolve them in a neutral context.

There has recently been considerable discussion around concerns about the well being and mental health of many doctoral candidates with evidence of undue stress and anxiety. Factors cited include excessive expectations, isolation, concerns about long term career prospects, and the very uncertain and ambiguous nature of research itself. This needs to be taken account of by supervisors as they help mentor their supervisees to develop as independent researchers. Empathy, patience, and responsibility for their well being in the work context are all characteristics that mentors need to develop. This is a topic of increasing concern but there is still some way to go before the systemic issues are resolved.

There are well documented concerns about the lack of diversity in doctoral programmes. UCL recently published a report exploring this issue, ‘Barriers to Doctoral Education’⁶, with actions being taken to improve, but it remains a difficult issue. Supervisors need to be aware of the challenges for diverse or minority candidates. They need to be aware of the challenges minority candidates may have even getting to interview and be open to potential above past research experience. An applicant may have great research potential but may not have had any opportunity to demonstrate this in traditional research contexts. New ways of judging or giving appropriate experience need to be developed.

Finally, it may be possible to improve the quality of mentoring by measurement. LERU’s report on ‘Maintaining a Quality Experience in Doctoral Education’⁷ discusses the role of measurement in quality enhancement. For the quality of supervision this remains a challenge and is mostly done by satisfaction surveys alongside some proxy measurements such as times to completion and complaints which have some but limited value. This remains an area that needs research.

End Notes

⁵ [OpmLeru08-2007](#)

⁶ <https://www.grad.ucl.ac.uk/strategy/barriers-to-doctoral-education.pdf>

⁷ [Maintaining-a-Quality-Culture-in-Doctoral-Education-Full-paper.pdf \(leru.org\)](#)

Supervision and Mentorship—A Multi-faceted Endeavor

Hans-Joachim Bungartz

Dean of Computation, Information, and Technology, Technical University of Munich

In the context of doctoral education, supervision and mentorship are a multi-faceted and dynamically evolving endeavour. First, they must incorporate all involved parties with their respective obligations and (sometimes diverging) interests – rather than providing a “one-way-street” care, which only touches on supervisors’ duties. Second, of course, there must be advice and guidance, but at the same time, a significant amount of freedom for the candidate to design his/her project is essential, too. Third, although supervision and mentorship must focus on the research project, both personal issues and the view on the next career steps in changing professional contexts are core parts. In such a complex construct with typically more than two players (the candidate, one or two supervisors, a postdoc involved, the mentor), clarifying roles and managing expectations are crucial to avoid misunderstandings or conflicts. Here, a sound preparation, well designed trainings, supportive guidelines, and an active communication culture, bi-lateral and multi-lateral, can help.

The Context: Traditional Doctoral Supervision in Germany

The German approach to supervision has been shaped over centuries by a close relationship between supervisor and doctoral candidate, mirroring an apprenticeship model and typically doing without an embedding institutional structure – with all ensuing advantages and drawbacks. Only in the last two decades, the prevailing form of this individual doctorate has been broken up by the introduction of institutional frameworks such as graduate schools with cooperative and multi-lateral supervision structures. Following the example of structured PhD programs in the Anglo-Saxon academic system, regulations have been introduced that define roles and expectations, require formal supervision agreements, and work with mentors as part of the supervision teams. I’m speaking of teams here, since today, more than 50% of the doctoral projects in Germany are supervised by at least two supervisors, representing different hierarchy levels (a professor and a postdoc, e.g.) or different scientific domains (in the case of interdisciplinary research topics). Moreover, almost a fourth of doctoral candidates at TUM have additional supervisors outside their own university, for example from a partner institution in the context of a special joint supervision agreement.

While senior supervisors focus on strategic aspects, co-supervisors at postdoc level take care of the fine-grain progress on a day-to-day basis. The mentor, in contrast, emphasizes more all aspects not directly related to the scientific project.

The Role of National Regulations in Developing Guidelines for Supervision

The elaboration of a written supervision agreement is currently developing into a quasi-standard. While there is no nation-wide legal framework (note that education lies in the states’ responsibility), this process is supported by recommendations of institutions such as the German Research Foundation (DFG), Germany’s most important funding agency, which are set to act as guidelines in shaping the key elements of such kind of written agreements. Ensuring good scientific practice, the integrity of research as well as the quality of supervision are just three elements that have been widely adopted in 34 supervision agreements. TUM has been among the first German universities to introduce such supervision agreements and the underlying understanding of what supervision and mentoring mean and how they should be implemented university-wide.

The State of Supervision at Universities: Data on German and International Candidates' Satisfaction with Supervisors and Supervision in General

Data sources on the satisfaction with supervision are, for example, provided by the *National Academics Panel Study* (Nacaps), a multi-cohort panel study implemented by the *German Centre for Higher Education and Science Studies* (DZHW). Initially launched in 2019, the survey conducts interviews with doctoral candidates and doctorate holders in Germany at regular intervals. Covering a broad range of topics, it also looks at the relationship between supervisor and supervisee, inquiring about the satisfaction of supervision reported by candidates. In its latest cohort, more than two thirds of doctoral candidates reported high satisfaction with their main supervisor, a slightly smaller amount of 58 % of respondents reported high satisfaction with the supervision in general. Interestingly, two sub-groups of doctoral candidates report significantly higher satisfaction: those with supervisors from different universities as well as international doctoral candidates (who frequently choose their universities because of a particular group they want to join, which might be one reason of a higher level of satisfaction).

Further Qualification of Supervisors: Supervisor Training

Although the satisfaction numbers mentioned above have to be considered with caution, and although one may, of course, question whether candidate satisfaction is the or at least an appropriate indicator of supervision quality at all, the structural changes and complex doctoral contexts require measures, i.e. trainings, to prepare (future) supervisors for their challenging part. As it is widely known, there are differences concerning the willingness of supervisors to take part in such trainings: While young (first-time) supervisors even ask for them, more experienced professors are sometimes more reluctant. Hence, some of the crucial questions in designing supervisor trainings are: Should they be mandatory or not? Are trainer-based courses or exchange formats among peers more appropriate? How to increase acceptance and effectiveness? At TUM, we have chosen the way of non-mandatory trainings that comprise both trainer-based and peer-to-peer elements.

Nevertheless, it is important not to overload the supervisor's role, which must keep its research focus. The introduction of a mentor outside the core supervision team and research responsibility has been one step to "outsource" some topics to a certain extent, in particular more personal issues. Another step we have been doing almost a decade ago was to incorporate career planning in all its facets (science, industry, entrepreneurship, ...) into the rich course program of TUM Graduate School. This, of course, does not and must not replace individual advice by supervisor(s) and mentor, but it can extend spectrum and intensity of career planning.

Acknowledging the Triple Role: Supervision in the Face of Multiple Responsibilities

Another peculiarity of the German doctoral education has its origin in the close relationship of supervisor und supervisee. Commonly, the supervisor takes on two more roles, namely as the examiner as well as the superior (with respect to the employment contract) of the candidate (who, in particular in, but not limited to the STEM fields, typically has a position of a research and teaching assistant). 35 According to Nacaps, about 70 % of doctoral candidates in Germany and 80 % at TUM have corresponding supervisory relationships. Obviously, this puts additional complexity and conflict potential into the system. This requires special attention of all involved parties to acknowledge asymmetric power relations and implications for judgement and research. Again, fostering awareness can be an important key to avoid problems.

Final Statement – Not a Summary

A comprehensive and well-balanced supervision system is important – for the success of doctoral projects as well as for the candidates' careers. Nevertheless, a doctoral project is a first step into scientific independence – more supervision is not automatically better supervision.

Changing the Culture of Supervisor Training: An Australian Perspective

Helen Klaebe

Graduate School Dean, University of Queensland

The Australian Council of Graduate Research (ACGR) is Australia's peak body organisation whose mission is to promote excellence in research training and scholarship and to promote high standards for all higher degree by research programs nationally. All 43 universities are members, and we also offer affiliate membership to our neighbours in the pacific region like all New Zealand and South Pacific Universities. Like CSG its role is to develop and promote quality research training across the sector; interact with Government and influence development of policy and standards for research training; provide forums and share best practice and engage with equivalent bodies internationally, which is why I am here. The University of Queensland (UQ), where I am the Dean is also an affiliate member of CSG and as one of the largest Higher Research Degree Graduate Schools in Australia (~5,000 students - predominantly PhD) and graduating ~800+ students a year.

In 2015 there was a fundamental shift in HDR research training in Australia, following international trends and in response to a range of general reviews ([ACOLA](#), [Watt](#)) changing Higher Degree Research (HDR) landscape across the sector. Since then, student expectations on what good supervision looks like, have also shifted enormously and the world as we once knew it has shifted us even further through COVID. The PhD is still framed and conducted much as it has been for decades, but with universities now providing and facilitating Graduate Research Education and Professional Development activities as the norm (in some way or another) adding other extra skills development (outside of the formal thesis work) to support the student not only finish with a great thesis, but to produce well-rounded contemporary researchers, is now expected.

Universities globally knew this shift was required and inevitable, but it has not been easy (and it still isn't) to make the internal cultural shifts and operationalise change into practice. In fact The [*PhD at the End of the World: Provocations for the Doctorate and a Future Contested*](#) (2021) reiterates that the slowness for PhD educators and supervisors to adapt to cultural change and altered student expectations is indeed a global issue.

A recent new shift in government expectations has Australian universities like UQ also needing to focus on innovation, commercialization, partnerships engagement in our research degrees. The attraction and retention of talent, as well as the size and growth of our HDR cohort is inextricably linked to these objectives. Quality HDRs are valued and required because this important cohort are our internal research 'power supply' but while they significantly contribute to our research output, we also know career opportunities for our graduates continue to grow outside academia, in research facilities, government, NGOs, industry and in community.

To acquire and retain the best HDR students, we must compete in a complex and competitive global market – made even tougher since COVID-19, with uncertainty about international students, labour market changes, and government variations to university funding. Beyond these immediate stressors, disruptive market forces have created new competing challenges including rapid changes in student (customer) behavior and expectations.

In the past, being a top research institution alone would have been enough to attract talented HDR students, but this global finite talent pool can now (and do) demand quality experiential research training

(including meaningful internships, international research opportunities), professional development (including career development, mentoring, and wellbeing) and this of course includes quality supervision.

UQ introduced the [3MT](#) 15 years ago and since has now introduced a comprehensive [Career Development Framework Program](#), specific [HDR career counselling](#), international mobility/[supervision](#) with key partners⁸, [joint PhDs⁹](#), [Wonder of Science](#) and [Global Change Scholars](#), [PhD Industry Internship Scholarships and Awards](#), and a [suite of supervisor professional development](#), including compulsory supervisor training that supervisors need to complete every five years to register as a Principal Advisor with us.

Our compulsory supervisor training acts as an opportunity for new staff to know UQ expectations of supervision practices, policies and procedures, and long-time staff are updated with practices and expectations that have shifted since they started supervising. We also have an increasing number of external supervisors who are not academics - clinicians, scientists, industry and government leaders with PhDs, who are helping us supervise the increasing number of PhD graduates who are not finding their career aspirations in academia.

Our UQ supervisor training consists of a half day workshop, broken into three parts covering: UQ centric policy, recruitment and scholarships processes; supervisor specific focus; and the changing HDR landscape. For the purposes of this talk I will focus what is covered in part two and three.

The supervisor specific component focuses in on supervisory styles, research culture, respectful relationships, and supervisor self-care. We run a series of scenarios and allow time for participants to discuss and share their experiences – this is an opportunity for conversations in small groups and is where the more experienced supervisors are helpful. In recent years the ACGR has also built and released a new suite of [Respectful Training Resources](#) to help combat sexual harassment, gender bias and discrimination in Research Training Programs that align with a report commissioned by Universities Australia, National Tertiary Education Union (NTEU), ACGR, and Council of Australian Postgraduate Association (CAPA) in which [eight principles](#) were published. This is where sometimes younger academics with less experience in supervising can be more vocal on sharing their contemporary cultural norms with older supervisors.

The last section of the workshop focuses on the changing expectations of the student. As I mentioned earlier, with more institutions competing for top researcher talent, HDR students will ‘shop around’ for the best deal that will result in not only a PhD but a well-rounded experience, so they emerge as confident researchers. This often will include expectations of quality networking, mentoring, links to industry, and career counselling. Industry engagement, commercialization, entrepreneurship, access to start up or innovation hubs, and funding for early idea development are important ways we entice talent, but some supervisors who studied and were supervised in more traditional times, a newer way of supporting ‘extra circular’ activity as well as the thesis is challenging.

Cuthbert (a former ACGR President) and Barnacle call for a ‘public and persuasive PhD’ and a need to “shift from *involted models of doctoral education as preparing ‘stewards of the discipline’ to an idea of doctoral education as a different kind of worldly stewardship and a challenge to positivity and a plea for normativity.” ([p101-106](#))*

There is also a growing array of ways in which supervisors can support researchers beyond the one on one ‘master/student’ model, such as: including interdisciplinary teams; mixed level teams (of students, post-docs, ECRs, supervisors); inclusion of industry partner advisors; international supervisory teams; joint institutional models; industry focused research centres; and industry embedded, bespoke projects. And of course, supervisor practices in a pandemic – remote supervision, rescoping projects on the fly, innovating solutions with lab lockdowns to name just some of the hot topics, and the workshop provides a forum to discuss and share these.

In 2017, the ACGR introduced the [Excellence in Graduate Research Education Awards](#) for excellence in: promoting industry engagement in graduate research; research supervision; and graduate research leadership. These national awards have set the bar on excellence and now most Australian universities have their own internal awards that align and feed up to these awards.

The dial of expectation on what good supervision ‘looks like’ may be well understood by national policy makers and institutions, but the reality of changing supervisory culture within institutions still has a way to go, but with sector leading norms being set by our peak bodies, and top universities sharing best practice, we are all going to get there in time - well supported.

End Notes

⁸ e.g. TUM, DTU, UNESP, SUSTECH, IFV.

⁹ With IITD (UQIDAR) and Exeter (QUEX)

The Nexus Between Successful Research Outcomes and Good Mentorship/Supervision

Ogbonnaya Inya Okoro

Dean, Postgraduate School, Michael Okpara University of Agriculture

1.0 Preamble

In September 2020, I was appointed Dean of Postgraduate School, Michael Okpara University of Agriculture, Umudike, Nigeria. I accepted the offer with all sense of humility-very eager to make a change in both the academic and administrative structures of the school. Astonishingly, six (6) months into my tenure, my office was inundated with series of petitions from both students and supervisors bordering on matters such as:

- Programme elongation due to inability of the supervisor to read/correct students; thesis/dissertation
- Programme elongation due to the inability of the supervisee to adhere strictly to the instruction of his/her supervisor
- Change of supervisor because of irreconcilable differences between the supervisor and the supervisee.
- Abandonment/deferment of the programme due to frustration arising from lack of attention by the supervisor
- Complaint by supervisors on non-seriousness of supervisees to carry out basic research, etc.

These issues and a lot more present a hindrance towards speedy completion of postgraduate programmes. Administratively, a lot of man-hour is usually deployed in solving the problems; thereby making the Dean of the school to pay less attention to the main issues of quality assurance, sound innovative research outputs, global research visibility (global ranking), and mounting of new programmes which are core mandates of postgraduate administrators.

In this write-up, I will examine the roles of students and supervisors in advancing postgraduate research. I will also look at mentorship as a tool that can be employed to reduce the frictions between the supervisor and the supervisee. I will then conclude by outlining how good mentorship/supervision can lead to successful research outcomes devoid of unnecessary petitions as outlined above.

2.0 Mentorship and Supervision

The postgraduate school is regarded as the image maker of the University. This is because it deals with people who are matured with diverse background and who may be working in another higher institution or government agencies. Some may have not done their first degrees in the University. Therefore, there is need for student-supervisor relationship that will be mutually beneficial not only to the student and his/her supervisor but also the University at the long run. Mentoring and supervising should go hand in hand if we are to achieve the desired research outcomes.

Mentorship involves guiding and providing advice to a younger or less experienced person, especially in a job or in school.

A mentor is anybody who provides a mentee with the tools, guidance, support, and feedback he requires to succeed in his chosen career. They're often someone who's gone down the same road the mentee is on currently and is there to advise you on what they've done and what's worked for them. The ultimate goal of the process of mentoring is professional development and career advancement. Ibe (2021)

outlines the following as what mentoring involves:

- Offering advice on both academic and non-academic careers
- Providing information about the University's culture and ways of working
- Showing respect for the mentee and maintaining a confidential relationship
- Providing honest feedback and the chance for the mentee to reflect and be challenged
- Being a facilitator and providing practical help, such as teaching observation
- Being available for regular meetings

Supervision involves a person (the Supervisor) who directs and oversees the work of a postgraduate research student (the supervisee). A Supervisor plays the roles of Educator, Sponsor, Coach, Counsellor and Director. Indeed, he is the boss, coordinator, facilitator and overseer.

Acker (2011) remarked that one of the major differences between supervision and mentoring is that supervision is often task-oriented (e.g. completion of a thesis or dissertation), whereas mentoring is more about caring for an individual's long-term development and career advancement.

Therefore, for a successful research outcome it is imperative that a Professor plays a role of mentoring his students. This can also be employed to reduce friction between the supervisor and the supervisee.

3.0 Ingredients for Successful Mentorship

Successful mentors share some important qualities. You'll want to look for these attributes in anyone you're thinking about building a mentor-mentee relationship with. And if you're looking to be a better mentor yourself, these qualities are worth noting.

- Relevant Expertise or Knowledge

A mentor should have relevant expertise that will help to propel the mentee forward in his career.

- Enthusiasm for Sharing That Expertise

Just as important as your mentor having expertise is them being willing to share it with you. He should be open and excited to spread the knowledge.

- A Respectful Attitude

A mentor should always be truthful with the advice dispensed, even if it stings a little. A straight-shooting mentor will be more beneficial in the long run than someone who is constantly praising you.

- Generous with time

A good mentor is generous with his time. Good mentoring takes time and commitment, but both parties must set realistic expectations that are agreed upon ahead of time

- Hold mentee accountable

They hold you accountable. If they ask you to do something, a good mentor will follow-up to make sure you did what they asked you to do.

- Demanding and Considerate

Good mentors push you outside your comfort zone. They understand that growth occurs outside the comfort zone.

- Responsive

Successful mentors respond to your needs and provide you with the tools and information to help you develop the skills and knowledge to grow.

4.0 Conclusion

Corley, T.C. in his book, Rich Habits reveals that 93% of the self-made millionaires who accumulated the most wealth in the shortest amount of time said that they had a mentor who taught them what to do and what not to do. A good mentor takes the “risk” out of “success”. In postgraduate school, an academic supervisor is usually assigned to a postgraduate student to guide the student through his/her thesis/dissertation. There are various expectations from both the supervisor and the student, all of which are for the mutual benefit of both parties. The relationship between a supervisor and a student has a significant impact on the success of the latter and on the professional growth(research outputs) and recognition of the former.

A successful mentoring relationship is a synergistic relationship between the mentor and mentee in which both parties benefit. In the process of providing career guidance, encouragement, scope for research, and opportunities to make professional contacts, mentors make substantial contributions in recruiting promising young people to their area of expertise. Therefore, successful mentoring can minimize if not eradicate completely the unnecessary rancor or petitions (which I have personally experienced) between the student and his/her supervisor. A research students through proper mentoring will gladly finish his/her thesis in record time to the satisfaction of the supervisor and the postgraduate school.

References

- Ibe, S. N. (2009). Embracing University Culture for excellence and integrity. A Lead Paper presented at a one-day Workshop for staff and students of Michael Okpara University of Agriculture, Umudike, March 12.
- Acker, J. (2011). <https://www.researchgate.net/profile/Joan-Acker-80477497>.
- Corley, T.C.(2013). Rich Habits. www.amazon.com.

Panel #4: Mentoring and Supervision in a Diverse Community

Mentoring and Meeting the Needs of Underrepresented Students

Michael Cunningham

Associate Provost for Graduate Studies and Research, Tulane University

Scholars have continuously documented the extensive barriers that Black, Indigenous, and People of Color (BIPOC) students face in educational settings in the United States, and these challenges are also embedded in graduate training programs in terms of access to sponsors and mentors who help them navigate historically White institutions (Harper et al., 2009). Often BIPOC graduate students may be the “only one” in their discipline (e.g., STEM) and racial microaggressions are a common experience for them (Gomez et al., 2011). Thus, a BIPOC Graduate Mentoring Program would have immediate impacts in supporting current (approximately 1500 BIPOC students) and prospective BIPOC graduate students, thus strengthening both retention and recruitment to build a strong pipeline for incoming BIPOC graduate students at historically White American universities.

Building successful mentoring efforts are dependent on collaborations across the university. The graduate student division is not the only partner needed for successful efforts. Collaborations with the academic units as well as student affairs professionals. Each of the units play a distinct role. At Tulane, we have developed a collaborations between 3 offices (Office of Graduate and Postdoctoral Studies (OGPS), the Office of Equity, Diversity, and Inclusion (EDI), the Office of Multicultural Affairs (OMA). The BIPOC Graduate and Professional Student program will use an evidence-based approach to design, development, and implementation. For instance, research has shown that these negative experiences in graduate education are also experienced by BIPOC faculty, who despite these experiences step to sponsor and mentor BIPOC graduate students (Brunsma, Embrick, & Shin, 2016; Solorzano, 1998). This invisible labor – called a “race tax” – is often unrecognized and unvalued in promotion and tenure criteria (Griffin, 2020). Therefore, this we did not design traditional “paired” mentor/sponsor program (which research has also shown can lack sustainable results), but rather a “composite” mentoring program that uses a cohort model and stipends for BIPOC faculty members to compensate the labor of sponsors.

This composite BIPOC Graduate and Professional Student program with a cohort approach brings together the BIPOC graduate students for a day-long professional development experience in the fall and spring, and monthly gatherings will be held as well. During these gatherings, we will provide skill-building in being able to (a) access mentors/sponsors within and outside of their discipline, (b) learn essential graduate skills of academic writing, research activities, CV writing, grant development, and award fellowship applications, (c) experience the nourishment and support of a thriving and empowered BIPOC graduate student community, and (d) develop pride and confidence in their intersectional identity development so they can unapologetically be themselves as they navigate their academic careers in graduate school and beyond.

Additional professional development linked to student’s respective disciplines requires linking with the academic disciplines. Thus, a cohort program model also should provide resources for students to better connect with the academic field. This cohort program provides individual students with financial resources to attend an academic conference. We also want to link students to professionals within their respective fields; so, we facilitate linkages to leading scholars in each of the student’s disciplines. Alternatively, students have opportunities to link to a scholar who may fulfill a personal need (e.g., an affinity group membership).

We will evaluate the BIPOC Graduate and Professional Student program through Qualtrics surveys after monthly meetings and day-long trainings. In addition, we will conduct individual interviews and focus groups to gather formative (informing the ongoing programming) and summative data (informing the outcomes) across the 2 years to continuously respond to student needs and improve our efforts.

A broader goal of this cohort mentoring program is to educate the university community about student needs. Based on the results from the Qualtrics surveys and individual interviews, we will present findings to the academic deans and Associate Deans for Graduate education. Thus, discipline-specific programming can be developed based on findings from our cohort mentoring program as well as information from the literature.

The final audience is the Office of Academic Affairs and Provost. As the chief academic officer, the provost is positioned to support leadership initiatives to support graduate students. Additionally, the office of student affairs reports to the provost. Because student affairs traditionally have an undergraduate focus for programming, aware of the needs for graduate and professional students can enhance the graduate student-specific needs.

References

- Brunsma, D. L., Embrick, D. G., & Shin, J. H. (2017). Graduate students of color: Race, racism, and mentoring in the white waters of academia. *Sociology of Race and Ethnicity*, 3(1), 1-13. <https://doi.org/10.1177/2332649216681565>
- Gomez, M. L., Khurshid, A., Freitag, M. B., & Johnson, L. (2011). Microaggressions in graduate students' lives: How they are encountered and their consequences. *Teacher and Teacher Education*, 27, 1189-1199. <http://dx.doi.org/10.1016/j.tate.2011.06.003>
- Harper, S. R., Patton, L. D., & Wooden, O. S. (2009) Access and equity for African American students in higher education: A critical race historical analysis of policy efforts. *The Journal of Higher Education*, 80, 389-414. DOI: 10.1080/00221546.2009.11779022
- Solorzano, D. G. (1998). Critical race theory, race and gender microaggressions, and the experience of Chicana and Chicano scholars. *International Journal of Qualitative Studies in Education*, 11(10), 121-136. <https://doi.org/10.1080/095183998236926>

Mentoring at a Global Crossroads: Diversity, Intercultural Competency, and Vision for Training

Carol Genetti

Vice Provost, Graduate and Postdoctoral programs, NYU Abu Dhabi

New York University Abu Dhabi is a global liberal arts university located in the United Arab Emirates. NYUAD opened in 2010 with a focus on undergraduate education. However, being part of NYU means centering research at the core of the academy, from our discovery-focused faculty, to our world-class facilities, robust research staff, and undergraduate capstone experience. We are a small university in the start-up phase, with a unique interdisciplinary core curriculum, obligatory study-away, emphasis on service learning, and strong sense of global community, caring, and service.

In 2014, NYU Abu Dhabi launched the Global PhD Program, a unique educational model that allows students pursuing degrees at NYU schools in New York to transition to NYU Abu Dhabi after the qualifying exam, to write dissertations under the guidance of NYUAD faculty. This program, together with two recently launched master's programs, have initiated a culture of graduate education. We have many active research labs in the sciences and engineering with research teams made up of postdocs, PhD students, research scientists and undergraduates. A culture of mentorship has organically emerged to serve these populations. As we seek to expand our graduate footprint by adding master's and doctoral programs accredited in the UAE, we have the opportunity to purposefully design programming and policies to support a culture of mentorship excellence. This raises the question of how to shape such programming such that it both reflects and fosters the campus ethos that values community amid global diversity.

Like our host country, NYU Abu Dhabi has a globally diverse population: we have faculty from more than 45 countries, postdocs from 58, and undergraduates from 115. Our 100 Global PhD students hail from 25 countries; our 10 MFA students hail from 7; and our 9 MSc Economics students hail from 9. Such national diversity brings with it diversity in language, religion, cultural practice, social norms, and -- especially challenging – those intangible and typically unrecognized biases, assumptions, and expectations that we all develop as members of a particular society. Such diversity, while bringing many advantages, can be challenging for both mentors and mentees to navigate. Collaborative research teams with diverse populations can face barriers, as cross-cultural misunderstandings can create or exacerbate communicative problems. The stakes become especially high when the communication concerns expectations about the research itself, or complex issues such as authorship or intellectual property. Even in the absence of such disputes, misunderstandings about what is courteous with respect to one's lab mates or how to communicate with one's faculty advisor can alienate people, impede the goals of inclusion and belonging that are essential to community, and limit the effectiveness of collaboration and the educational process.

Building an effective culture of mentorship that supports this global mosaic will involve actions at several levels: (1) the creation of policies that recognize, evaluate, and credit postgraduate mentorship as a significant component of faculty workload and advancement; (2) transparent communication around academic requirements, financial support, policies and procedures, and resources that support the academic and professional journeys of postgraduates into careers; (3) training for mentors and mentees that is centered on diversity and intercultural competence; and (4) the creation of a culture of mentorship through supportive communities of practice.

Actions (1) and (2) are primarily administrative. They require support from university leadership and a commitment to continually strive for improvement and efficiency. Implementing these will be essential to

the effectiveness of (3) and especially (4). They are all part of a single ecosystem and are mutually reinforcing.

To ensure that the values of global community and cross-cultural respect are central to the postgraduate experience, the development of intercultural competence needs to be central to our training efforts. This involves considerable education about the nature of diversity, stereotypes, and bias, but also knowledge about cultures and intercultural communication, and the development of skills required when interacting with others from different cultures. We are currently in discussion as to the shape of this training. The campus has begun to use tools such as the [Intercultural Development Inventory](#), which centers self-reflection, respect for difference, and recognizing the full individual. This platform looks promising, but it will be important to annually evaluate the training framework and to create a flexible curriculum that can be modified over time. The training will be most effective if it is deeply interactive and involves peer-to-peer learning. In addition to developing intercultural competency in general, our mentor and mentee trainings will focus on what excellent mentorship is, what it means, how it is done well, and will provide tools to support success. Overarching it will be the theme of fostering inclusion, creating community across global populations, and supporting academic journeys such that individuals thrive and realize their full potential.

Given the intended learning outcomes, the curriculum will need to be extensive, so we will need to be thoughtful with regards to timing, setting, etc. For mentees, such trainings can be built into orientation or onboarding programs. It will be important that the curricula used for mentors and mentees cross-resonate and ideally cross-pollinate, and that they are not framed within a disciplinary perspective (such as STEM).

Initial training can be amplified over time through the creation of communities of practice. For mentors, this is currently envisioned as being fostered via monthly lunches where two people from different programs share experiences and best practices. An annual faculty award for mentorship excellence will also raise the profile of this community and incentivize others to join. For mentees, the community of practice can be connected to the post-graduate community and professional development.

NYU Abu Dhabi is at an important crossroads as it looks to expand its graduate population. We hope these efforts will extend and strengthen the campus' core values leading to greater integration of our graduate programs, as well as a cohesive campus community that fosters thriving and success.

Attributes of a Productive Supervisor and Mentor

Grace Ofari-Sarpong

Dean of the School of Postgraduate Studies, University of Mines and Technology (Ghana)

Introduction

Graduate students need mentors to guide them through all facets of their educational and professional pursuits. Among the important things students look out for in their graduate education is valuable relationships with supervisors. Good student-supervisor relationships are associated with higher turnouts in graduate education. Productive student-supervisor relationships become possible when the Supervisor also doubles as a Mentor. While Professors/Lecturers are assigned to graduate students to supervise their theses, records show that adding mentoring to supervision assist in turning out a well-rounded graduate student, who can influence the world in a better way.

“Supervision in the academic context is a process to facilitate the student becoming an independent professional researcher and scholar in their field, capable of adapting to various research arenas, whether university or industry based.”

“Mentoring is a process for the informal transmission of knowledge, social capital, and the psychosocial support perceived by the recipient as relevant to work, career, or professional development; mentoring entails informal communication, usually face-to-face and during a sustained period of time, between a person who is perceived to have greater relevant knowledge, wisdom, or experience (the mentor) and a person who is perceived to have less (the protégé)”.

What a Productive Supervisor and Mentor Must Know and Practice

1. Accept the responsibilities of nurturing a student ahead and prepares for it.
2. Establish mutual expectations and responsibilities as soon as the student begins his/her program, and continue for its duration.
3. Develop a plan with timelines for the supervision period, and discuss with students for a common understanding.
4. Create time to be available as a consultant for the student.
5. Listen to students and allow them to express their opinion.
6. Allow students to outline problem they anticipate.
7. Tease students to think through possible solutions to outlined problems.
8. Assist students to identify their strengths, weaknesses, opportunities and threats, and guide them through how they can work around them to their advantage.
9. Guide students to accept responsibilities for their actions and inactions.
10. Give constructive feedback that stimulates students to work harder.
11. Challenge graduate students to improve their skills towards achieving excellence.
12. Share aspects of their stories that will inform students about the important keys to success and the difficulties they might face.
13. Expose students to the job market, and how they can transition smoothly.
14. Discuss career plans of the students and guide them through the path.

15. Link students up with professionals in related fields for networking opportunities.
16. Give students information on fellowships and other opportunities to continue their academic development.
17. Teach students general guidelines for reviewing technical reports and how to pick create new research doors from the loopholes.
18. Introduce students to peer review processes.
19. Have clear and frequent communications with students
20. Identify special needs, attributes and aspirations of each student, and handle on case by case basis.
21. Make students feel calm whenever they meet with you.
22. Give feedback to students about their performance.
23. Let students know you have a clear interest in their work.
24. Create time to ask a bit about their lives outside school work.
25. Do not compare students to one another. Each student is different. Therefore, a mentor needs to understand these differences and work on treating each student as an individual.
26. Guide students to be self-sufficient, instead of doing the work for them.
27. Avoid forcing students to be photocopies of ‘you’.

Conclusion

Mentoring and supervision have a dual role in postgraduate education. Mentoring focuses on personal growth while supervision focuses on the execution of organizationally determined educational goals. The joint aim of postgraduate research supervision and mentoring is to enhance, monitor, and evaluate the student’s learning experience. The role of the supervisor is to provide a high-quality research and learning environment for the graduate student. The supervisor through mentoring develops a professional interpersonal relationship with a graduate student that is conducive to scholarly activities, intellectual enhancement and promotion of the student’s professional career.

Fostering an Environment for Positive Supervision: Making Assumptions Explicit

Fahim Quadir

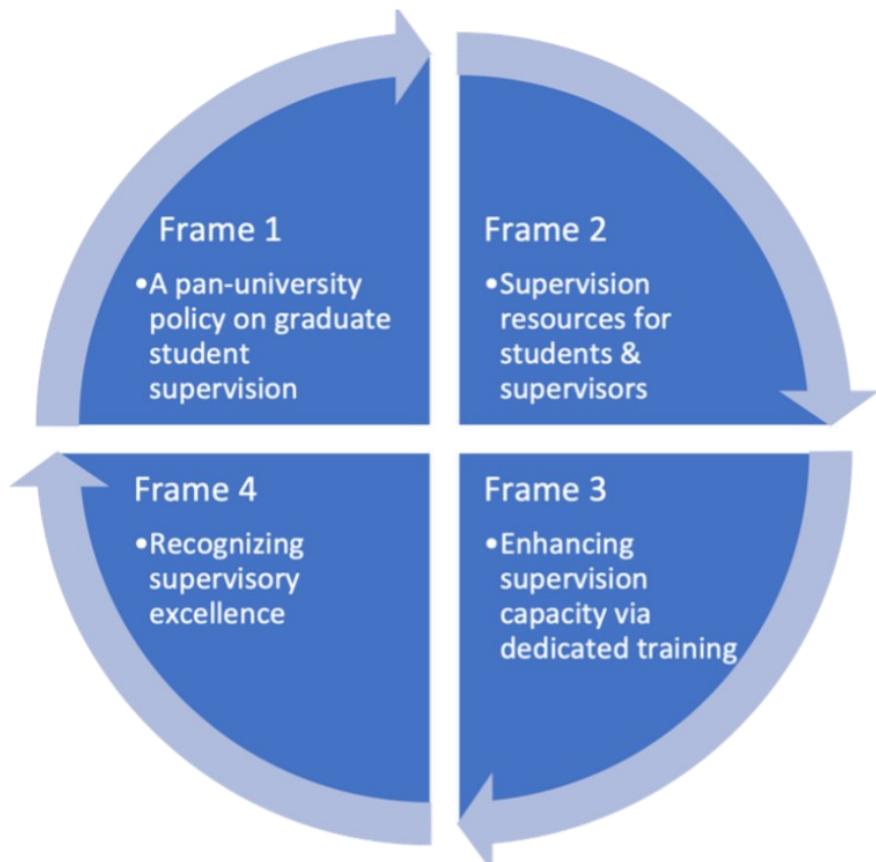
Vice-Provost and Dean, School of Graduate Studies and Postdoctoral Affairs, Queen's University

Fostering Positive Supervision at Queen's University

The quality of graduate supervision has emerged as a consistent topic at universities over the last decade within Canada and internationally. Students and faculty members grapple with new issues that impact graduate student research, including the changing nature of the dissertation, shifting contexts in research ethics and intellectual property, and more explicit recognition of the needs for graduate research training within varying disciplinary and interdisciplinary contexts. The [Canadian Graduate and Professional Student Survey](#) data shows general satisfaction with the quality of graduate supervision nationally, provincially, and at Queen's University. However, data also shows the significant academic and wellness concerns that emerge when supervisory relationships are strained or break down, which may occur for many different reasons. These instances of student-supervisor conflict place faculty members, program administrators, and especially students in challenging positions. Perhaps most importantly, these conflicts negatively impact the learning and research environment for both students and supervisors.

Queen's School of Graduate Studies and Postdoctoral Affairs (SGSPA) has adopted a four-frame model to promote productive supervisory relationships. Underpinning this model are five core principles for graduate supervision, which are articulated in the Queen's Graduate Supervision Policy:

- Mutual Respect: Maintain a positive learning and research environment through respect, exercising understanding in times of difficulty and support for the achievement of milestones.
- Open Communication: Early and ongoing communication is essential.
- Goal-directed Learning & Progress Monitoring: Discuss and establish learning and research goals.
- Responsive & Timely Feedback: Be reasonably accessible by providing descriptive, actionable, and timely feedback.
- Leveraging Resources for Wellbeing & Success: Leveraging university-wide resources can support both students and supervisors in fulfilling their roles and responsibilities.



Frame 1: Pan-University Graduate Student Supervision Policy

To ensure both faculty and students understand their roles and responsibilities, the SGSPA developed a Senate-approved [Graduate Supervision Policy](#), which was drafted after a comprehensive review of similar policies at universities across Canadian and finalized in consultation with faculty, staff, and students at Queen's. The policy includes the following elements:

- Queen's commitment to graduate supervision;
- Roles and responsibilities for graduate students, graduate supervisors, graduate programs and the SGSPA;
- Description of leave procedures; and
- Description of conflict resolution procedure.

Frame 2: Access to Dedicated Supervision Resources for Students and Supervisors

Supporting graduate students and supervisors are resources developed for the Queen's community that target key aspects of the supervisory relationship (e.g., setting expectations, having productive conversations, navigating challenges). An overarching guide is the [SGSPA Graduate Supervision Handbook](#). The [handbook](#) is a comprehensive resource for students and supervisors, providing guidelines, recommendations, and an overview of key policies and regulations governing supervision, research, and student conduct at Queen's. The handbook contains an interactive "Expectations Scale," which can be useful as an initial tool to facilitate discussion between students and supervisors about their expectations for their respective roles.

Additional key resources for students and supervisors include the following:

- *Setting Expectations: A Resource Guidebook for Graduate Students and Supervisors:* The SGSPA has created the [Setting Expectations guidebook](#) to support the establishment of clear, explicit expectations at the beginning of the student-supervisor relationship, helping to promote open communication, student progress, and avoid conflict. This guidebook is thematically organized, with each section offering questions and prompts to encourage discussion across foundational aspects of the supervisory relationship (communication, feedback, program progression, publication, funding, etc.). The guide contains a Goal Setting Guide and a Program Planning Guide to support students in planning their graduate journey.
- *Productive Supervisory Relationships: Making Assumptions Explicit:* This [one-pager](#) is a quick guide for students to reference when meeting with their supervisor early in their relationship. Key themes are accompanied by sample questions students may wish to ask, encouraging clear and direct conversations fostering discussion early and avoiding confusion.
- *Navigating Graduate Student Concerns: A Resource Guide for Graduate Students:* This [resource guide](#) offers a series of flowcharts and step-by-step guidance for navigating challenges graduate students may encounter. These include academic issues, wellness concerns, financial challenges, equity and inclusivity issues, accommodations, and sexual violence concerns. These guides provide clear processes that students (and faculty) can follow to find support and identify campus resources to help them resolve challenging situations.

Frame 3: Enhancing Supervision Capacity via Direct Training

The Graduate Student Supervision Policy stipulates that all new faculty members eligible to supervise graduate students must engage in training on supervision. The SGSPA views it as their responsibility to provide flexible training options, which include:

- *Online Course:* In September 2022, the SGSPA launched an online course on graduate supervision. The

five-module course is asynchronous and provides foundational knowledge and skills for faculty to support graduate students. Each module contains clearly defined learning outcomes, interactive tasks, and opportunities to engage in reflection and application activities.

- *Workshops and Retreats:* Historically, the SGSPA has offered two workshops a year on graduate supervision. This includes a consistent workshop on the foundations of effective supervision and a thematic workshop focused on a key issue (mental health, supervising international students, supporting students for non-academic careers, etc.). Moving forward, the SGSPA will offer two annual retreats. One focused on the foundations of effective graduate supervision intended for early career faculty members, and the other delving deeper into specific supervisory challenges. The retreats will feature keynote speakers, panels, and breakout activities.

Frame 4: Recognizing Supervisory Excellence

To promote a culture of excellent supervision at Queen's, the SGSPA offers annually the [Award for Excellence in Graduate Student Supervision](#) (AEGSS). The award recognizes those supervisors who demonstrate outstanding excellence in advising, monitoring, and mentoring graduate students. The criteria for the award reflect supervisors who inspire students to push scholarly boundaries, pursue their career and academic goals, offer quality feedback and guidance, and support broadly a culture of supervisory excellence within their School/Faculty and/or the university. Graduate students and colleagues are invited to nominate graduate supervisors, and recipients are celebrated at yearly convocation ceremonies.

Towards a Culture of Supervision Excellence: Now and in the Future

Promoting high-quality supervision across disciplines is a multi-faceted project that requires continuous attention and development. The SGSPA works closely with its campus partners to promote a consistent, positive, and supportive culture of supervision, and working to develop new resources and opportunities to facilitate productive supervision. We recognize that teaching, learning, and research is changing in higher education; our approach to supervision – and our related policies, resources, and training – must evolve with these changes. The SGSPA is committed to continuing to strengthen and broaden its promotion of a strong culture of supervision at Queen's to support our students and faculty now and into the future.

Panel #5: Mental Health and Well-Being in the Supervisor/Mentor Relationship

Effective Mentorship of Graduate Students

Ali Al-Marzouqi

Dean of the College of Graduate Studies, United Arab Emirates University

We know that graduate students are fundamental to the mission of higher education institutions and that mentors have an important role in their professional, intellectual and personal development. Successful mentorship sets the student up for success and creates a positive and rewarding experience during their graduate education. Whether the mentorship is done remotely or in person, the role of a mentor is the same. Mutual respect and continuous professional communication are essential for a successful supervisory relationship. The supervisor or mentor will advise the student on registration issues, program requirements, research development and progress, and help the student with scholarships, professional development, and job searches. Mentors will encourage their students to learn creatively and independently. They involve students in preparing and submitting proposals for funding, manuscripts for publications, conference papers for presentations, and IP disclosures for filing patents. They also provide feedback on student's work and progress toward degree in a timely manner.

For a relationship to be both productive and healthy, the student and the mentor need to understand their role and responsibilities. Supervisors should clearly lay out and discuss the following with their students:

- Expectations that are clear and reasonable, including timelines for completion of theses and dissertations.
- Preferred method of communication and contact. Creating and maintaining meaningful connections, especially during a time of isolation and physical distancing, even if it has to be virtual, is very important. Use of online platforms like Zoom, MS Teams, Skype, or Google Meet, can ensure connectivity with students. Furthermore, creating an online community, can lead to a sense of inclusion, i.e. being part of a group, especially for remotely located students.
- Necessary directions and guidance to avoid future conflicts. It is important to establish clear plans on how they will work together, considering that plans may need to be adjusted along the way.
- Funding opportunities, incentives, collaborations, and dual/joint degree options.
- Authorship policy and acknowledgement of student contributions to research presented at conferences, in publications, and in applications for copyright and patents.
- Creative and flexible approaches to produce successful outcomes and achievements when research projects are interrupted during an emergency situation such as the pandemic. For example, during a laboratory shut down, students may focus on learning a new skill or a software, developing the theoretical part of the research, analyzing previous results and writing a manuscript, and/or writing a proposal for funding.
- Frequent enquiry about the physical and mental well-being of students. Graduate students may often feel isolated as they are mostly working by themselves on a specialized topic for an extended period of time. Only few people around them may understand what their research is all about. More isolation caused by a pandemic could make the situation even more difficult, affecting their mental health. They may experience all kinds of negative symptoms including stress, anxiety, depression, and not being able to sleep. Therefore, even just talking to them can go a long way in helping them to stay on track and to feel that they are not alone.

- Being supportive during difficult times, especially when themselves or their family members are affected by the pandemic, will be helpful. Graduate students who are parents will be trying to balance between their studies and family life. They may have to deal with layoffs for spouses and teaching their children at home, especially when schools are operating remotely during a pandemic. It is important to know how they are doing and if there's something that's bothering them in order to connect them to the right Counseling and Clinical Services.
- Creative ways to celebrate student's success, even if it has to be during an online meeting or video call. Celebrating accomplishments will strengthen relationships, build confidence, and boost motivation for the next achievements.

Graduate schools can also play an important role in fostering a healthy mentorship and supervision through the following activities:

- Establishing guidelines to support high-quality graduate supervision. Such guidelines should include suggestions to students and their supervisors/mentors, while working in a remote or on-site environment.
- Conducting workshops for junior faculty members on mentorship of graduate students.
- Conducting workshops for graduate students on the relationship between students and supervisors.

Other activities that could be beneficial for a graduate student's success and well-being include:

- Professional development workshops and activities to improve students' skills in areas such as career/employment, research skills, technical skills, personal development and leadership skills. Mentors should encourage their students to attend these workshops.
- Social and educational activities such as field trips, visits to attraction sites outside campus as well as on-campus activities such as movie nights and international day, even if it has to be a virtual event due to a pandemic. Mentors should give their students space to take part in such activities, which provide them opportunities to connect with others, thus reducing their isolation and improving their well-being.

In summary, understanding everyone's roles and responsibilities and setting early expectations, creates a positive tone and allows both the student and the mentor to thrive in their professional relationship. Thank you for your attention. Stay safe and connected.

NEAR: A Case Study in Developmental Mentoring

Graham Hammill

Vice Provost for Academic Affairs and Dean of the Graduate School, University at Buffalo

Overview:

In 2018, the Graduate School at the University at Buffalo in partnership with UB's School of Social Work created the Network for Enriched Academic Relationships (NEAR). From its inception, NEAR was intended to be a university-wide transdisciplinary mentoring network for graduate students that provides students with access to mentorship regarding developmental issues that lie beyond coursework, comprehensive exams, and dissertations. The project's founding principle is that creative and rigorous intellectual work requires both expert guidance in a substantive area or methodological approach and meaningful support, especially when contending with systemic bias and marginalization or personal stressors and hardship.

Participation in NEAR is completely voluntary. Interested faculty submit profile information indicating issues they are willing to discuss with a student. That information is uploaded onto a public-facing website that graduate students can search to find willing mentors. The faculty member and student meet up however and whenever they wish, and in whatever modality they wish – in person, virtually, or by telephone.

NEAR Mentor training occurs each semester, and a library of training resources is shared with all new mentors. Training workshop topics include in-depth discussions of campus mental health resources for graduate students, incorporating trauma-informed principles in mentoring, and supporting students using a restorative justice lens. Mentor discussions sessions are also held to address hot topics and build a community among mentors. In future years, NEAR mentors will participate in CIMER's "Entoring Mentoring" training program.

Currently, 52 faculty, two alumni, and three staff participate as mentors in NEAR. All participants have earned a doctoral degree. Eight mentors identify as a racial or ethnic minority and five identify as a sexual or gender minority. The program is administered by the Graduate School and led by a faculty director who provides leadership and direction on training and support for mentors and students.

Selecting a mentor:

The NEAR directory is organized into three mentoring topics with subheadings linked to faculty willing to provide mentorship in the specified area:

1. *Academic Culture*: Considering a non-academic path after graduate school; demystifying academic culture and norms; managing politics and conflict with faculty or peers; taking a non-traditional path to graduate school; uncertainty about staying in graduate school
2. *Minority Experiences*: Discrimination related to being a woman; discrimination related to class or socioeconomic status; discrimination related to mental health and abilities; discrimination related to physical health and abilities; discrimination related to race, ethnicity, cultural or religious minority status; discrimination related to sexual or gender minority status
3. *Personal Circumstances*: Caregiving for children; caregiving for loved ones; financial stress; non-US citizen or immigrant experiences; veteran and military family experiences

In the directory, each mentor has an individual profile that includes contact information, a current photo, education, professional experience, a detailed mentoring statement, and topics that mentor is willing to discuss with students. Mentors are given the option to self-disclose personal identities as a racial ethnic minority and/or a sexual or gender minority.

The NEAR network is intentionally designed to allow graduate students access to mentors outside of their home academic departments. Students in small academic departments may be reticent to disclose concerns or problems and seek help. The power structure of traditional graduate mentoring can often be a challenge. The NEAR network seeks to mitigate this challenge by allowing students to find mentor support from faculty who do not have direct academic authority over them.

Raising the visibility of mentoring:

Part of the value of a public website is that it makes the often invisible work of mentoring highly visible. Placing the name and face of a mentor with a specific challenge also raises the visibility of challenges graduate students face and offers students with role models so that they know they are not alone in facing particular life circumstances. Early in the formulation of NEAR, the determination was made that institutional surveillance is at odds with creating and sustaining an authentic mentoring networks. For this reason, participation by individual students is not monitored.

Each mentor receives an annual letter from the dean of the Graduate School, with a copy sent to the department chair or supervisor. The dean of the Graduate School also sends each dean an annual letter listing faculty mentors who participated in NEAR.

CGS-JED Graduate Student Mental Health Initiative

Our campus was selected to participate in the CGS-JED Graduate Student Mental Health Workshop in 2020, with the goal of contributing to the development of a consensus document that outlines principles of commitments to graduate student mental health and well-being for the CGS community. NEAR Mentor insights as to how NEAR can enhance faculty understanding of student mental health concerns and how effectively NEAR enhances campus support services helped to inform the *CGS Supporting Mental Health and Wellbeing of Graduate Students: A Statement of Principles and Commitments of Graduate Deans*, which UB signed in 2021.

Mentoring as a Personal and Professional Support-Based Relationship

Ayman Saleh

Vice President for Graduate Studies and Research, Ain Shams University

Mentoring is viewed as one of the most effective relationships that assists individuals and organizations to develop. Mentoring pairs, a “mentor” and a “mentee” in a support-based *intense relationship* that guides mentees to “career advancement and psychosocial development”.

The career function enhances professional performance and improvement, whereas the psychosocial-related function addresses an environmental issue through role modeling, acceptance, confirmation, counseling, and even friendship.

Learning how to be a mentor is the “culmination of leadership as a professional”. Success of a mentor is realized when a mentee exhibits leadership. Mentoring promotes the growth of a whole person through guidance, intensity, reflection, and regulated learning. Creating a mentoring culture and enhancing the mentoring skills of professionals is crucial to augment the creativity, innovation, satisfaction, and success within organizations.

While “**Supervision**” - is to oversee that professional knowledge or skills are being transferred and to ensure that tasks or activities are being correctly performed. “**Mentorship**” – is perceived as a long-term multi-dimensional support relationship aiming at personal and professional growth. Mentoring is as much about counseling as it is about transferring knowledge and leadership skills. Communication, active listening, motivation, as well as empathy are the crucial components of effective mentoring.

Effective Mentoring in Universities can also encompass some other contexts:

Two major determinants to be considered by an effective university mentor:

- Alignment with the role of fourth-generation universities, aiming to fulfill the needs and demands of a knowledge-based society. Enhancement of the competitiveness is currently expected from universities, where not only education and research are significant, but the utilization of knowledge is also crucial.
- Awareness of local national problems facing the youth in our society.

Thus, facilitating learning by directing students to available university resources as digital libraries, capacity building courses, relevant workshops and seminars is a key concept in mentoring. Equally important, is providing students with connections and access to different university facilities, as training center and employability center, for fine tuning of their skills and capabilities to amend to market and societal needs.

Moreover, introducing the students to ecosystem for multi /interdisciplinary research, innovation and entrepreneurship is also regarded as an engagement of an academic mentor; In this context, providing database for potential key persons from other disciplines, connecting the students to the innovation hub facility and personnel to widen their scope into knowledge utilization, application, and entrepreneurship can be valuable approaches.

Directing and providing connections to a wider ecosystem for training and research can offer guidance over career planning, job-associated networking, employment seeking, internship training, and other related activities.

Amid an international economic crisis that hits less developed countries more aggressively, all financial issues are important: a psychosocial role of a mentor can embrace directing students to



scholarship opportunities, research funding opportunities, cheap safe housing for out-of-Governorate students, university held clothing, androids, PC fairs, part-time in-house job availability to strengthen the students' financial resilience.

An effective academic mentor should strive to achieve these traits in his relationship with students;

- *Communicate and listen effectively:* Mentoring is not a one-sided conversation; it is an open discussion that encourages sharing thoughts, opinion, concerns, and feedback. A mentee needs to be able to confide in the mentor. Be sure to discuss your expectations with your students in advance. It is also important to understand a mentee's challenges, goals, desires and feelings and engage with them, so you can best provide support.
- *Lead by example:* A mentor should aim to set a good example for graduate students in all aspects as research, collaboration, problem solving, handling difficulties, stress management.
- *Inspire confidence:* By providing constructive feedback in a timely manner. Be diplomatic and tactful when addressing your concerns. As a mentor you can guide your student acquire the skills necessary to engage with their projects with greater confidence.
- *Respect diversity and practice empathy:* Empathy is a crucial trait of a good mentor. It's important understand different perspectives and feelings of your mentees. Be aware of differences in ability, gender, culture, or life circumstances that may require special considerations. Acknowledgment of a good performance or achievements of students at different occasions can be supportive.
- *Be accessible:* Be willing to devote time to get to know your students. Establish a mutual respectable relationship that allows both parties respect each other's effort, and qualifications.
- *Be a guide for students:* A mentor should guide his students to scholarships or research funding opportunities, allow students to develop a handful of knowledge and skills related to their field of study and give them the necessary aids to confidently deal with intellectual challenges.

Roles and Responsibilities within a mentoring relationship:

Hereby, are some suggested roles and responsibilities inspired by successful individuals and organizations that are recognized as having effective mentorship cultures.

Mentors:

- Balance the role of supervisor and mentor.
- Develop a trusting and supportive relationship with students.
- Communicate with mentees in a clear, courageous, honest, and engaging manner.
- Give positive and negative constructive feedback in a supportive manner.
- Give priority to innovation and creativity over teaching and instruction.
- Help elevate leadership capabilities and encourage students share their perspective.
- Assist mentees to develop networks inside and outside the organization.

Students:

- Abide to the University's regulations and Statutes.
- Be proactive and innovative and take full advantage of resources and facilities offered by mentors and institution.
- Communicate effectively with mentors, share mutual expectations, engage in discussions, plans and feedbacks and seek advice of other key expertise.
- Cooperate to developing appropriate research plan with achievable timelines and milestones.

Institutions:

- Provide an assuring, safe working environment that aids in providing effective mentorship.
- Support necessary infrastructure, resources and facilities crucial to achieve the required scope of study and research, and support concepts of knowledge application, and entrepreneurship.

Mentoring Through Complementary Co-Curricular Training for a Comprehensive Graduate Student Profile

Erick Sánchez Flores

Coordinador de Posgrado, Universidad Autónoma de Ciudad Juárez

Graduate education is a fundamental factor in promoting social development. The improvement in job qualification and a wider access to the mechanisms for knowledge generation and its application, derived from higher education levels, raise the productive capacity, thereby increasing the impact of graduate education through better living conditions in society. However, despite the increase of graduate students' registration in recent years, and the greater number of graduate programs recognized for their academic quality, graduate education in Mexico still faces a series of urgent challenges to better respond to current demands of society.

Faced with this scenario, higher education institutions must respond by offering socially relevant programs that train specialized professionals with the necessary skills to contribute effectively to the development of their knowledge areas and, at the same time, capable of providing creative and suitable solutions for the most pressing problems to improve the lives of their communities. Meeting this objective requires comprehensive training schemes that reinforce disciplinary knowledge and provide students with supporting tools to strengthen their academic training.

To meet this need, at the Autonomous University of Ciudad Juárez, in Mexico, we proposed in 2020 the creation of the Support Program for the Comprehensive Development of Graduate Students (PADEP, by its acronym in Spanish) as an institutional mechanism to help graduate students to complement and to enrich their profiles in all disciplinary areas through a scheduled program of co-curricular activities facilitated by academic mentors. The objective of this program is to strengthen a comprehensive training of graduate students by addressing their academic and personal development needs through a series of courses, conferences, workshops, and training activities focused on improving their learning and research skills, while guiding them to maximize the benefits of their graduate careers.

The complementary training offered through PADEP is oriented to the areas of human development, to contribute to different aspects of their personal well-being; as well as in the development of professional skills that allow them to make the most of their academic training received in their academic programs.

PADEP is sustained thanks to the generous collaboration of a team of more than 30 academic mentors from the different areas, who contribute voluntarily by sharing their time, experience, and knowledge, beyond the limits of the classroom or the laboratory. PADEP tutors are experienced researchers who facilitate the integration of a comprehensive student profile. Their contribution is officially recognized as an academic priority activity and compensated through annual economic incentive program for academic performance at UACJ.

To advance towards the first version of PADEP, we surveyed students and program coordinators to learn about their interests and training needs. The general areas of greatest interest identified in this exercise were academic development and cultural training, followed by health and personal well-being. Regarding interests for the development of learning and research skills, students identified scientific writing, research techniques, statistics, and time management as priority subjects. In human development, the students requested training in stress control and management, and others associated with health care.

In the two years since its implementation, PADEP has offered a total of 48 complementary co-curricular activities with an attendance of 1,458 students, on topics such as Principles of scientific research, Skills for academic presentations, Applying to PhD programs, Digital tools for research, Writing in graduate thesis, Harassment prevention in academic environments, Ethics of research, Scientific journals indexes, Admission to graduate school, Advancing graduate Curriculum Vitae, Joint publication in graduate school, Meditation and concentration, Physical activity and nutrition for graduate students, and Techniques for stress management.

The level of satisfaction of the students who have completed any of the PADEP training is measured at the end of each activity with an exit survey. Almost 90% of students state that they are satisfied with the contents, 98% say the support of PADEP helped them to strengthen their comprehensive path in graduate studies, and 95% are satisfied with the role of mentorship in PADEP.

The experience accumulated at the UACJ level has encouraged us to include a proposal, in the action plan of the next COMEPO presidency, for the development of a National level PADEP that would be carried out through the collaboration of mentors from the different institutions affiliated to the Mexican Council of Graduate Studies (COMEPO). We are confident that the valuable collaboration of all institutions, will allow us to extend the benefits of mentoring in co-curricular activities to advance towards a more comprehensive graduate profile and a greater impact of graduate education in Mexico.

Panel #6: The Evolving Role of Technology in Shaping Mentorship and Supervision

Supervision in European Universities and the Role of the Universities

Alexander Hasgall

Head of the Council for Doctoral Education, European University Association

The history of the modern doctorate is closely associated with the close relationship between a more senior scholar (as supervisor) and a junior researcher (the supervise). This relationship can sometimes be considered familial - the common German term of "Doktorvater" (doctor-father) or "Doktormutter" (doctor-mother) for the supervisor refers back to this. There are various reasons why the supervisor is so important. This includes that the doctorate in Europe is not understood as a course of study but rather as learning by doing. The candidate is introduced to independent research through the example and advice of a more experienced researcher. This model is built around a conception that the doctoral candidate is uniquely engaged in their research – which has never been 100 % the case but is increasingly changing. While research remains at the centre of the doctoral endeavour, there are increased challenges directed toward doctoral candidates. Through digitalisation and globalisation research is becoming increasingly complex, and early-stage researchers have to deal with a multiplicity of issues like open science, including open data, research assessment, research ethics and integrity, science communication and mental health support. In addition, doctoral candidates are confronted with multiple career opportunities and are interested in exposure to different kinds of partnerships and collaboration. All this also influences the relationship with supervisors.

The complex relationship between supervisor and candidates

If doctoral graduates are asked about their satisfaction with the outcome of the doctoral programme, surveys repeatedly indicate that doctoral candidates are generally satisfied with their supervision. At the same time, it is essential to point out that there is a high potential for conflict or unsatisfactory information precisely because of the interdependent relationship between supervisor and supervisee. Because of their essential role, supervision problems can jeopardise doctorates' success, especially when conflicts arise. A central aspect of the introduction of structured doctoral education in the last two decades has been the realisation by the institution that it has a responsibility to contribute to the success of the doctoral endeavour actively and that it is perceived as such by all. The fact that the quality of doctoral supervision has become a focus area at European universities in recent years shows that universities see it this way. According to a new survey published in 2022 by EUA-CDE, this topic remains the top priority, with 64% of the respondents considering it very high importance at their institution - much more important than funding or internationalisation. One may ask whether this result is an expression of an inherent quality problem of doctoral education or an expression of the appreciation of this topic by the university leadership. The fact that this responsibility is being taken up becomes apparent when one looks at two central areas of activity of universities - supervisor training and the introduction of guidelines about supervision.

Supervision training

As already mentioned, it is unrealistic to believe that supervisors can take responsibility for all the aspects related to the doctoral experience of their candidates. Consequently, universities have been leading in facilitating supervisors to achieve good supervision in their daily practice. The recent EUA-CDE vision paper reiterated this aspect as it called 'universities to invest in the training of supervisors, enabling them to embrace their roles fully and ensure that the doctoral school or environment plays its appropriate supportive role'. Supervisory training can take on a variety of forms. In some countries, it is voluntary, while elsewhere, it is mandatory to supervise doctoral candidates. Training can range from a one-day course to a

systematic preparation process. There are different challenges for doctoral schools. One of them is to ensure the quality of the training; after all, one is dealing with highly qualified academics. External consultants and trainers often play an essential role here. What is always described as a unique challenge by the EUA-CDE community is the motivation for this training. It is not necessarily apparent to every senior scholar that supervision can be learned, especially when far advanced in one's career.

Rules and guidelines

An EUA-CDE survey from 2019 shows that rules and guidelines exist for most aspects of doctoral supervision. The appointment of supervisors is regulated in 89% of responding universities, with 81% of universities providing for this 'in all doctoral programmes. There are rules and guidelines for formal reporting by doctoral researchers on their activities (86%) and also for proper feedback by the supervisor(s) (73%). There are rules and guidelines for written agreements between the candidate, the supervisor and the university (64%), for conflicts between supervisors and early career researchers (59%) and the minimum number of meetings with the supervisor(s) (52%). In the supervision training mentioned above, many rules and guidelines exist. While it is always debatable where one can speak of over-regulation, it can be said that universities see their main role as preventing conflicts and providing conflict resolution mechanisms, creating a fundamental framework for good supervision and ensuring a paper trail in case of potential disputes. This also shows the intention to ensure basic transparency. It also follows the Salzburg principles of 2005, which asks that "arrangements for supervision and assessment should be based on a transparent contractual framework of shared responsibilities between doctoral candidates, supervisors and the institution (and where appropriate including other partners)."

Communication

If failed supervision can in many cases be so understood as an expression of failed communication, a particular focus on communication must be made. Universities play a critical role in facilitating communication on many different levels. This can include reflection and exchange of experiences about supervision in supervision training, the above-mentioned exchanges between supervisor and supervisee, and ensuring that everybody is aware of what a relationship between supervisor and supervisee that can last many years entails. This is even more important when co-tutelles and joint doctorates, and team supervision with supervisors from several countries are becoming more important, and different supervision traditions and approaches come together. In addition, in the context of research and academic career assessment reforms, supervision is becoming a relevant part of assessment exercises, which also needs to be communicated to supervisors – particularly early in this career. Finally, there is no such thing as the ideal supervisor. The needs are extremely different between candidate and candidate and between supervisor and supervisee. There is a right match to be found here and to talk openly about what is expected.

Managing Remote Supervision Programs: An Experience from Universiti Teknologi Malaysia

Noor Hazarina Hashim

Dean, School of Graduate Studies, Universiti Teknologi Malaysia

Traditionally, doctoral candidates studied on campus and work closely with their supervisors throughout their studies. Changes in working policy, advances in information and communication technologies (ICT), the pressure to achieve intake target and the pandemic have forced academics to engage in remote supervision and the need to understand this activity is greater than ever before. In 2019, Universiti Teknologi Malaysia launched its remote supervision program for its doctoral and master of philosophy programs. The remote supervision was designed to support the research and supervision process in situations where candidates are at a considerable geographical distance from the institution.

The situation of a remote research student is different from students who spend full time doing their research on campus. Establishing the academic atmosphere is also challenging in the absence of physical presence. Gaining trust is also pertinent in the lack of auditory, visual and physical cues during the online supervision and discussion with supervisors. It is also found perhaps because of the lack of informal interactions and the opportunity of working side-by-side with other researchers as a means for doctoral candidates to develop research and technical skills, remote students face diminished opportunities for research apprenticeship.

To assist the research and supervision process, the supervisors UTM produces a guideline and training for supervisors and students registered under the remote supervision program. The current guidelines, however, does not mention the separate roles between a supervisor and mentor, as supervisors (in most cases) plays both roles. Having a clear guideline and training is important and helpful in administrating the remote supervision program and in establishing mutual expectations for the research degree student-supervisor partnership.

UTM guidelines for remote supervision, provides a suggested starter list of expectations that research students and their main supervisor might expect from each other. It is designed to facilitate conversations to establish effective partnerships and it is recommended that the document is discussed at the first meeting between a main supervisor and a new student. Students and main supervisors are encouraged to discuss, tailor and personalise the document further to suit. It is also recommended that students and their main supervisor re-visit the document throughout their partnership.

Today, I will be sharing on the remote supervision guidelines at UTM. First, a remote student is defined as international students who is residing and conducting their research outside Malaysia. This student, however, will still have to apply for their Student Pass (a compulsory rule by the Department of Immigration Malaysia) and spent a minimum of 6 month period in Malaysia. The status as a remote student is subject to approval by the School of Graduate Studies after getting permission from the supervisor and the student producing evidence of having research and communication facilities at the location.

Once the remote students have been approved, the supervision shall take place following the remote supervision guideline. The guideline touches four roles in supervision and mentoring: academic development, managing our partnership, supporting good health and wellbeing and professional development.

In terms of academic development, the guideline stated that is the responsibility of the student to display the initiative, commitment and work ethic required to successfully complete his/her research. On the

other hand, supervisor is working with the students to develop an appropriate project that can deliver within the period of your studentship funding and ensuring the progress to completion. Students must attend the research methodology and university general courses over the period stipulated by UTM and it is the responsibility of the faculty to offer the classes, preferably online. Communications needs to be established at least once a month via telecommunication such as telephone or video conferencing. Students are required to be physically present in UTM for at least 3 months per session to fulfil the residency requirement of one (1) semester throughout the study. A progress report form must be submitted at the end of each semester for supervisors to assess the student's performance.

The guideline also mentioned the role of the supervisor in managing the remote supervisor process. Besides the guideline, UTM also organises a course for a supervisor who wishes to supervise a remote student. Supervisors need to provide appropriate guidance about the nature of research, standards expected for each milestone and help students to plan their research so that they can submit their thesis on time. We suggest the supervisor to ask the student to have a Gant Chart and set a clear timetable for offline/online meetings throughout the study. Supervisors also need to clarify on the costs and the budget for the research at the beginning of the candidature. The guideline recommends using communication technology such as email, WhatsApp, Skype, videoconferencing etc. to maintain communication.

As communication is vital in a remote supervision process, we provide few actions to make sure the communication and supervision continues:

- Response times to emails within acceptable time (1-2 days). If you're not available or out of office, set an autoreply.
- Ask the students to send an email to all supervisors summarizing the outcomes of each supervisory meeting.
- Set a group supervision through online medium
- Create a culture where student needs to email the discussion materials 2 weeks before the meeting.
- Ask the student to email the updates of their progress and questions that will be asked prior the meeting.
- Every 2 weeks email with your student and ask these questions: what you have been working on, progress/ problems and what you plan to do next
- Create a “peer mentoring” group –students mentoring other students –increase peer communication & collaboration.

In conclusion, the remote supervision will continue to be the future of research studies. The current remote doctoral supervision has revealed both challenges and affordances for candidates and supervisors. In many cases, misunderstandings are the result of a lack of time, and of insufficient attention in handling communication barriers: ever-busy supervisors and shy or candidates not taking the time to understand each other's style of communication. Setting clear expectation from both parties -via guideline- could help to reduce the uncertainty and focus on delivery.

Reflections on the Impact of COVID-19 on the Findings and Recommendations of the 2019 NASEM Report on Mentoring in STEMM

Brian S. Mitchell

Scholar-in-Residence, Council of Graduate Schools

Introduction

Shortly before the global pandemic, the U.S. National Academies of Science, Engineering and Medicine (NASEM) released a study report from the Committee on Effective Mentoring in STEMM, where STEMM includes the science, technology, engineering, mathematics, and medicine disciplines. The 288-page report included a comprehensive review of the current literature on the science of mentoring relationships, mentoring of underrepresented students in STEMM, mentorship structures, the development of effective mentoring, the assessment and evaluation of mentorship, and the roles of individuals and institutions in supporting effective mentorship. It culminated in seven key findings and nine recommendations to promote intentional, inclusive and effective mentorship in all institutional contexts. Superimposed upon this mentorship report are the emergent findings of the impacts of the COVID-19 pandemic on higher education writ large, but especially the research enterprise in which the mentoring of young scholars occurs. Reports such as those from the International Association of Universities (IAU) provide survey results from higher education institutions (HEIs) around the world while research articles describe the impact of the pandemic on specific aspects of mentoring such as digital education, access to university facilities, and graduate student mental health.

The purpose of this paper is to map the early findings on the effects of the pandemic on HEIs and their research cultures against the recommendations of the NASEM report on STEMM mentoring to provide context to its findings and promote discussion on how those recommendations might be adjusted to meet the demands of a post-pandemic society. The focus is on the report recommendations because these are the actionable items; they should be operationalized with full awareness of the current environment.

NASEM Recommendations

The NASEM report enumerated nine primary recommendations, of which one was definitional, one targeted specifically to funding agencies, and one to the scientific community studying the scholarship of mentoring. These three recommendations are excluded in the interests of space and because the emphasis here is on actions that institutions of higher education can take to improve mentorship. The six remaining recommendations are listed in Table I with their numbering maintained as initially reported. There were several sub-recommendations, as well, such that a total of 34 specific recommendations were identified. Those sub-recommendations are mentioned only as necessary.

Table 1: Institution-Related Recommendations from the 2019 NASEM Report on Mentoring in STEMM

2	Use an Evidence-Based Approach to Support Membership
3	Establish and Use Structured Feedback Systems to Improve Mentorship at All Levels
4	Recognize and Respond to Identities in Mentorship
5	Support Multiple Mentorship Structures
6	Reward Effective Mentorship
7	Mitigate Negative Mentorship Experiences

Impact of Pandemic on HEIs

Of the effects of the pandemic on mentorship, the following broad areas are identified from the current literature as relevant to research mentoring:

- Institutional Support
- Digital Learning and Communication
- Graduate Student Mental Health

Institutional support can take many forms, but access to research facilities like libraries and laboratories are perhaps the most



Figure 1: Pandemic-Related Reasons for Delays in Research at HEIs. Data from ref. 2.

fundamental. As campuses closed due to the pandemic, teaching and learning may have shifted to digital formats, but the physical environment required for many research projects did not correspondingly adapt. By one estimate, as many as half of the graduate students at one research university would experience a delay in degree completion due to campus closure⁴. **Recommendations 2-7** all contain sub-recommendations targeted specifically to institutions, including training, discussion, evaluative tools, and reward mechanisms on mentorship. While those activities presumably could be moved online, the priority given to them over emergency remote instruction in the early stages of the pandemic is not known. More specifically, the IAU survey contained questions related to the impact of the pandemic on research activities. Reasons for delays in research activity are summarized in Figure 1, and although not directly related to mentoring are indicative of those impacts that clearly influence both the mentor(s) and mentee(s). For example, 61% of HEIs indicated that research staff had to spend additional time on teaching responsibilities and 42% had increased workloads and personal obligations because of the pandemic. Coupled with health issues both physical and mental, these findings suggest by implication that mentorship activities were negatively impacted from a time commitment standpoint.

The use of digital learning and communication increased during the pandemic, with IAU reporting² that the use of digital communication infrastructure to communicate with students at all levels increased by 95%. Evidence from undergraduate-graduate student dyadic mentorships suggest little impact on the quality of mentoring when virtual mentoring was the primary pre-pandemic mode of communication, and that 60% of respondents reported an improved relationship upon shifting to virtual mentoring. How these findings translate to graduate student-faculty mentoring relationships is still unclear, but certain components of virtual mentorship could in fact be positive. **Recommendations 2 and 3** are impacted here as the role of virtual communications on research mentorship has not been studied previously.

Finally, the mental health and wellness challenges faced by graduate students has been well documented by CGS. It is estimated that the rates of depression and anxiety were as much as two times higher in the graduate student population in 2020 compared to 2019. While the increase in mental health and wellness challenges undoubtedly impact the mentees, the impact of the pandemic on the mental well-being of faculty mentors is less well studied. The wellness of both mentors and mentees impacts **Recommendation 7** insofar as the ability to reduce negative mentorship experiences is diminished.

End Notes

- ¹⁰ National Academies of Sciences, Engineering, and Medicine. 2019. *The Science of Effective Mentorship in STEMM*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25568>.
- ¹¹ Marinoni, Giorgio, Hilligje Van't Land, and Trine Jensen. "The impact of Covid-19 on higher education around the world." *IAU global survey report 23* (2020).
- ¹² Zawacki Richter, Olaf. "The current state and impact of Covid 19 on digital higher education in Germany." *Human Behavior and Emerging Technologies* 3.1 (2021): 218-226.
- ¹³ Koth, Zoe, and A. Kelly Lane. "Adjusting Expectations: The Impact of 2020 Campus Closures on Advisors' Approaches to Graduate Student Mentorship." *Journal of microbiology & biology education* 22.1 (2021): ev22i1-2475.
- ¹⁴ Nash, Carol. "Improving mentorship and supervision during COVID-19 to reduce graduate student anxiety and depression aided by an online commercial platform narrative research group." *Challenges* 12.1 (2021): 11.
- ¹⁵ Speer, Julie E., Max Lyon, and Julia Johnson. "Gains and losses in virtual mentorship: a descriptive case study of undergraduate mentees and graduate mentors in STEM research during the COVID-19 pandemic." *CBE—Life Sciences Education* 20.2 (2021): ar14.
- ¹⁶ Hazelrigg, K., and M. Woodworth. "New initiative to support graduate student mental health and wellness." Council of Graduate Schools 20 (2019).
- ¹⁷ Wasil, Akash R., et al. "Promoting graduate student mental health during COVID-19: Acceptability, feasibility, and perceived utility of an online single-session intervention." *Frontiers in psychology* 12 (2021): 569785.

Biographical Sketches of Participants

Organizers

Suzanne Ortega became the sixth President of the Council of Graduate Schools on July 1, 2014. Prior to assuming her current position, she served as the University of North Carolina (UNC) Senior Vice President for Academic Affairs (2011-14). Previous appointments include the Executive Vice President and Provost at the University of New Mexico (UNM), Vice Provost and Graduate Dean at the University of Washington (UW), and the University of Missouri (MU). Dr. Ortega's masters and doctoral degrees in sociology were completed at Vanderbilt University.

Adham Ramadan is a Professor of Chemistry at The American University in Cairo, a Fellow of the Royal Society of Chemistry and a Member of the American Chemical Society. He is a chartered Chemist in the UK. He has been serving as Dean of Graduate Studies since 2014. Prior to that he served as head of the Department of Chemistry from 2010 to 2013. As Dean of Graduate Studies, he initiated a university-wide review of the graduate admissions system and the graduate fellowship award system, as well as worked on the enhancement of university wide metrics for assessing the performance of graduate programs. He updated university-level coordination of graduate programs, leading to the development of a Graduate Studies Manual. He has recently been involved the Strategic Enrollment Management for Graduate Studies, as well as Graduate Studies opportunities for refugees.

Steering Committee

From 2002 to 2012, **Philippe-Edwin Bélanger** served at Fonds de recherche du Québec - Nature et technologies, overseeing the organization's scholarship programs and France-Québec partnership. He has been appointed director of graduate studies and student success at Institut national de la recherche scientifique (INRS) in 2012. As director, he is responsible for academic program management, administrative support for graduate students and postdoctoral fellows, the registrar's office, student services and financial support. Trained in political science and public administration, Mr. Bélanger has conducted study on the impact of Québec's family policy.

As a member of Conseil supérieur de l'éducation du Québec's commission on university education and research from 2008 to 2011, he contributed to *Pour une vision actualisée des formations aux cycles supérieurs*, an advisory opinion presented to Québec's Minister of Higher Education highlighting various concerns, and issues associated with graduate studies.

A very active member of Québec and Canadian professional associations, Philippe-Edwin Bélanger was president of Association des administratrices et des administrateurs de recherche universitaire du Québec (Québec Association of University Research Administrators) in 2013. During that time, he defended the importance of maintaining public investment in university research. Between 2014 and 2018, he has been president of Association des doyens des études supérieures au Québec (Québec Association of Deans of Graduate Studies). As president, he conducted, in collaboration with Québec Ministry of Higher Education, Research Funds of Québec, and Francophone Association for the Advancement of Knowledge, the first Québec survey on Ph.D. competencies for the purposes of enhancing programs, improving the professional integration of graduates, and highlighting the contribution of doctoral students to the development of society. He was treasurer of the Canadian Association for Graduate Studies (CAGS) between 2017 and 2019. He is vice president of this association since November 2021. Finally, he has just received the prestigious Career Achievement Award from University of Quebec in recognition of his contribution to the advancement of higher education.

Amanda Crowfoot has been Secretary General of the European University Association – the collective voice of Europe's universities, with over 850 members – since January 2020. She is responsible for implementing the Association's strategic plan, acting as an ambassador for its members, and leading a Secretariat of over 40 staff members.

Amanda previously served as Director of Science Europe, the association representing major public research funding and performing organisations in Europe. As Science Europe's first Director, she was responsible for establishing its office in Brussels in 2012, as well as developing and implementing its policy agenda.

From 2001 to 2012, Amanda worked at the UK Research Office – the Brussels office of the UK research councils – first as a European Advisor and then as Director of the Office. In these roles she worked closely with universities in the UK and beyond, assisting them in accessing EU funding and defining their strategies for European engagement.

With a background in linguistics, Amanda taught and researched at several UK universities, and was Projects Manager at the Centre for Research and Policy in Disability at Coventry University.

Shireen Motala is currently the [South African Research Chair in Teaching and Learning](#), University of Johannesburg (UJ) and a professor in the Faculty of Education. She is an established rated researcher and her research interests and area of expertise includes: Equity and social justice; Teaching and learning in higher education; Schooling; Access to Higher Education; Education – Finance; Education policy; Postgraduate education. She has recently edited the book: "From Ivory Towers to Ebony Towers: Transforming Humanities Curricula in South Africa, Africa, and African-American Studies".

Attendees

Professor Abiodun Humphrey Adebayo obtained a B.Sc. (Honours) degree in Biochemistry from the University of Calabar in 2000. He later proceeded to the University of Jos in 2003 and was awarded an M.Sc. degree in Biochemistry (Distinction grade) in 2005. Prof. Adebayo was awarded a PhD degree in Biochemistry by Covenant University, Ota in 2009. He undertook a postdoctoral study at the Institute of Microbiology, Chinese Academy of Sciences in 2012-2013. He specialized in Plant Biochemistry and has been actively involved in the sustainable use of indigenous medicinal plants. His main research focus is on phytochemical, biochemical and toxicity studies of medicinal plants. His research on medicinal plants involves the purification, isolation and characterization of active compounds from plants; these compounds are in turn screened for anticancer, antiviral, antimicrobial and antioxidant properties. Prof. Adebayo is also involved in the safety evaluation of locally used medicinal plants using biochemical, haematological and histopathological indices of toxicity. Prof. Adebayo, who is a recipient of the prestigious Chinese Academy of Sciences (CAS) and the Academy of Sciences for the Developing World (TWAS) Fellowship awards, has published in reputable local and international journals. His astuteness has earned him three times prize of Covenant University High Impact Journal publication awards for the years 2010, 2011 and 2012. He recently won research equipment grant worth \$25,000 from the Ministry of Science and Technology, China and a Phytochemistry Laboratory has been set which is fully functional. His research group won the 2014 TWAS Research grant of about \$60,000 for carrying out a study on the "Preclinical evaluation of novel computational-aided designed compounds as antimalarial drug candidates". The fund also made provision for the award of scholarship for MSc. Students. Prof. Adebayo reviews for some high impact journals which include: Biological Trace Element Research, Toxicology in Vitro, Human & Experimental Toxicology, Natural Product Research to name a few. He is also listed on the editorial board of some international journals which have their base in America and Asia, these journals include: International Journal of Pharmacology, Journal of Pharmacology and Toxicology, Asian Journal of Biochemistry, American Journal of Plant Physiology, Research Journal of Medicinal Plants, Insight Biochemistry and Insight Biotechnology. Dr. Adebayo's biography was recently listed and published in the 30th edition of Marquis Who's Who in the World in the United States. Prof. Adebayo who was the immediate chair of the Covenant University Farm

Board and Drug Procurement Committee, is currently a Professor in the Department of Biochemistry and the Dean of the School of Postgraduate Studies, Covenant University, Ota, Ogun State, Nigeria. Prof. Adebayo is an ordained Pastor at Faith Tabernacle and he was the former Deputy Chaplain of the University.

Dr. Ali Al-Marzouqi obtained his Ph.D. in Chemical Engineering from Oregon State University, USA, in 1997. He worked as an Instructor in the Chemical Engineering Department of Oregon State University for three years and then joined the Chemical and Petroleum Engineering Department of UAE University in September 2000. He was promoted to the rank of Associate Professor in 2007 and to the rank of Professor in 2017. Dr. Al-Marzouqi has served as the Assistant Dean for Research and Graduate Studies in the College of Engineering for 12 years until he was appointed as the Vice Dean of the College of Graduate Studies in 2017, Acting Dean in 2018 and Dean of the College of Graduate Studies in 2019. His research focuses on CO₂ capture, brine management, formulation and processing of biodegradable polymers, conversion of biomass to high value chemicals, the use of supercritical fluid technology in food and pharmaceutical applications, polymeric materials and biodiesel production. Dr. Al-Marzouqi has published 62 peer-reviewed journal papers, contributed to 80 conference presentations, and achieved six granted patents and two book chapters.

Professor David Bogle studied Chemical Engineering at Imperial College at both undergraduate and graduate levels, receiving his PhD in 1983. Following this, he worked on modelling and control projects for British Gas before taking a position as lecturer at the University of Adelaide, a position he held from 1986 until 1990. Prof Bogle joined UCL as a lecturer in 1990. He was appointed Professor in 2000. He was Technical Programme Director for the 2005 World Congress of Chemical Engineering. In 2005 he was appointed Head of the UCL Graduate School. Since 2008 he has been chair of the Steering Group of the LERU Doctoral Studies Community. In 2005 he was elected a Fellow of the Royal Academy of Engineering.

Hans-Joachim Bungartz is the dean of information and the graduate dean at the Technical University of Munich (TUM) in Germany. His studies of mathematics, informatics and economics at TUM were followed by his doctorate (1992) and post-doctoral teaching qualification (Habilitation, 1998), after which he held a professorship in mathematics in Augsburg and an informatics Chair in Stuttgart before returning to TUM in 2004. He is a member of the board of directors of the Leibniz Supercomputing Centre, a member of the advisory board of several HPC centers and institutions, speaker of the BGCE elite study program and director of the Ferienakademie Sartal. Professor Bungartz chaired the DFG Commission for IT Infrastructure for seven years, has been Chairman of the Executive Board of the German Research and Education Network from 2011 to 2020 and is a member of the Steering Committee of the Council for Doctoral Education of the European University Association since 2016.

Michael Cunningham serves at the Associate Provost for Graduate Studies and Research in Tulane University's Office of Academic Affairs. Dr. Cunningham holds the academic rank of Professor at Tulane University; and he has a joint faculty appointment in the Department of Psychology and the undergraduate program in Africana Studies. He is a developmental psychologist with a program of research that focuses on racial, ethnic, psychosocial, and socioeconomic processes that affect psychological well-being, adjustment to chronic stressful events, and academic achievement among African American adolescents and their families. He uses mixed methods in his research projects that includes the study of gender-specific patterns of resilience and vulnerability in urban African American participants. Dr. Cunningham has received external funding from several sources including the National Science Foundation (NSF), The National Institutes of Health (NIH), The Mellon Foundation, the Louisiana Board of Regents, and The U.S. Department of Education. He has been recognized for his research from the National Research Council. He has received Tulane's highest teaching award and been designated as a Suzanne and Stephen Weiss Presidential Fellow. He completed his doctoral work at Emory University after completing an undergraduate degree at Morehouse College. Dr. Cunningham also completed a postdoctoral fellowship at the University of Pennsylvania. Along with serving as an Associate Provost at Tulane, his current professional service includes serving as Editor-in-chief for *Research in Human Development*. He has served on several journal editorial boards such as a Senior Editor for the *American Educational Research Journal*, the *Journal of*

Negro Education, and Child Development of which he was an Associate Editor from 2007-2019. He currently serves on executive board of the Council of Graduate Schools as Chair-elect and the Educational Testing Service's Graduate Education Advisory Committee as well as previous service on the boards for organizations associated with graduate education (e.g., Association of Graduate Schools – AAU - AGS, Council of Southern Graduate Schools, & ETS' Graduate Record Exam - GRE) and academic disciplinary societies (e.g., the Society for Research in Child Development's (SRCD) and the Society for Research in Adolescence's (SRA)). His mentoring experiences include being a Senior Mentor for the Robert Wood Johnson's New Connections Program and a Faculty Mentor for the American Psychological Associations Minority Fellow Program's Psychology Summer Institute. Most recently, Dr. Cunningham was as a recipient for the Society for Research on Adolescence's Mentoring Award and he was selected as Tulane University's recipient of the Oliver Fund Award for Excellence in Faculty Mentoring in 2021.

Marcio de Castro Silva Filho is the provost for Graduate Studies at the University of São Paulo, Brazil. He was President of the Brazilian Society of Genetics for the 2018-2020 biennium. He was chairman of the National Forum of Pro-Rectors for Research and Graduate Studies (FOPROP) in 2019, visiting professor at the University of Melbourne, Australia, in 2003, where he did a postdoctoral internship, and at The Ohio State University from 2016 to 2017. He has been a full professor at the [University of São Paulo](#) since 2001.

Carol Genetti is a linguist who specializes in Himalayan languages, especially those of the Tibeto-Burman language family. Her work spans multiple subfields of linguistics, including language documentation, syntax, historical linguistics, and prosody. She seeks to discover how linguistic structures are shaped by speakers' use of language as a tool of communication in their daily lives. She is committed to supporting endangered-language speech communities and was the Founding Director of InField/Colang, a biennial institute that brings together linguists and speakers of endangered languages for shared research and teaching in techniques of language documentation, conservation, and revitalization. Her 2007 monograph, *A Grammar of Dolakha Newar*, received the inaugural Georg von der Gabelentz Award from the Association for Linguistic Typology. She is also the author of an introductory textbook, *How Languages Work*, now in its 2nd edition.

Carol Genetti serves as Vice Provost for Graduate and Postdoctoral Programs at NYU Abu Dhabi, where she works to create, advance, and support premier graduate and postdoctoral programs that embody the global, liberal arts, and interdisciplinary ethos of the campus. She joins NYUAD from the University of California, Santa Barbara, where she served for eight years as Dean of the Graduate Division and held the Anne and Michael Towbes Graduate Dean Chair. Prior to that, she served for seven years as Associate Dean in Humanities and Fine Arts and six years as Chair of the Department of Linguistics.

Graham Hammill is vice provost for Academic Affairs and dean of the Graduate School at the University at Buffalo. In these roles, he is the primary executive officer of the Graduate School and is responsible for providing dynamic academic leadership and a vision for undergraduate, graduate and professional education to advance the University at Buffalo as a premier public research university. Hammill is also professor of English with primary research interests in early modern literature, political theory, and the history of sexuality.

Dr. Alexander Hasgall is Head of the EUA Council for Doctoral Education (EUA-CDE). He is responsible for the largest European network in this field, covering 36 countries and bringing together a community of academic leaders and professionals from 265 Universities awarding doctoral degrees and institutions working on issues related to doctoral education and research training. Before assuming this position, he coordinated the Swiss University Rectors conference's "performances de la recherche en sciences humaines et sociales" programme on research evaluation in the social sciences and humanities and was based in the University of Geneva.

Alexander Hasgall studied philosophy and history at the University of Zurich and the Free University of Berlin. He wrote his Doctorate at the University in Zurich on the topic «Regimes of Recognition. Struggles over truth and justice in dealing with the last military dictatorship in Argentina» and completed a research residence at the "Universidad Nacional de General Sarmiento" in Buenos Aires. Outside of the higher

education sector, Alexander acquired different working experiences in the NGO-Sector incl. being a human rights observer in Guatemala, in market research and as a freelance journalist.

Noor Hazarina Hashim is the Chair of School of Graduate Studies at Universiti Teknologi Malaysia where she currently manages over 8,000 graduate students since 2019. During the three years of her appointment as Chair of the Graduate School, Noor has introduced several academic programs that support on flexibility and lifelong learning, including Open and Distance Learning, Micro Credentials and introducing several Accreditation of Prior Experiential Learning initiatives. She is currently improving the industrial PhD program and updating policies and procedures to improve student experience and staff culture. Prior to her appointment as Chair of the UTM Graduate School, she served as Head of the Department of Business Administration at the Faculty of Management. Hazarina obtained her PhD in 2008 from the University of Western Australia under the supervision of Professor Jamie Murphy, focusing on the effective use of websites and e-mail.

Professor Aleksandra Kanjou Mrčela is chair of the EUA-CDE Steering Committee. She was Head of the Doctoral School of the University of Ljubljana (UL), Slovenia from 2015 to 2021. She was Vice-Dean for postgraduate studies at the Faculty of Social Sciences, UL (2007-2011). Professor Kanjou Mrčela teaches Sociology of work, Economic Sociology and gender, work and organizations at the Faculty of Social Sciences, university of Ljubljana.

Helen Klaebe provides strategic leadership and direction of graduate research education for the Graduate School at the University of Queensland, where we deliver high-quality experiences for higher degree by research (HDR) candidates to enhance their educational, professional development and career pathways. UQ attracts and invests in quality candidates to work with our world-class researcher expertise producing significant research impact. Our HDR programs and graduate research education is at the forefront of innovation and best practice and our candidates work with international and domestic institutional and industry partners. As Dean, Professor Klaebe also manages key HDR initiatives such as our [joint PhD programs](#) with Exeter University (UK) and IIT Delhi (India), our unique [Career Development Framework](#), the [Global Change Scholars program](#), the [Wonder of Science](#) program, and the internationally renowned [UQ 3MT competition](#).

Matthew D. Linton is the senior manager for programs and publications at the Council of Graduate Schools where he directs the Strategic Leaders Global Summit on Graduate Education. His work at CGS has included the publications *Making a Grad School Plan: From Application to Orientation* and *The Organization and Administration of Graduate Education* (with Julia Kent). He also currently manages the National Name Exchange and an ETS-sponsored project on postbaccalaureate microcredentials. Prior to joining CGS in 2018, Matthew received his doctorate in history from Brandeis University where he was a Crown and Mandel fellow. His research has appeared in *The Washington Post*, *The Journal of American-East Asian Relations*, and the Rockefeller Archive Center's *IssueLab*.

Brian S. Mitchell is Professor of Chemical and Biomolecular Engineering at Tulane University where he served as Associate Provost for Graduate Studies and Research from 2006 to 2014. He was the Council of Graduate Schools (CGS) Dean-in-Residence at the National Science Foundation (NSF) from 2015-16. Brian graduated with High Distinction with a B.S. in Chemical Engineering from the University of Illinois-Urbana in 1986 and received his M.S. and Ph.D. degrees in Chemical Engineering from the University of Wisconsin-Madison in 1987 and 1991, respectively. Brian is a Fellow of the American Institute of Chemical Engineers. His research experiences include an NSF-NATO Postdoctoral Fellowship at the University Karlsruhe, a German Academic Exchange (DAAD) Fellowship at the University of Freiberg/Sachsen and the German Federal Materials Laboratory, and Alexander von Humboldt Research Fellowships at the German Aerospace Agency and the Max Planck Institute for Colloids and Interfaces.

He was a member of the DAAD Alumni Association Board and is a DAAD Research Ambassador. Brian has authored over 70 peer-reviewed journal articles, two U.S Patents, and two books. In addition, he has given over 30 national and international presentations and an equal number of outreach presentations to Louisiana elementary school children though the state's "Speaking of Science" program.

Professor Grace Ofori-Sarpong is the first female Professor of Minerals Engineering in Ghana, and currently the Dean of School of Postgraduate Studies at the University of Mines and Technology (UMaT), Tarkwa, Ghana. She holds a PhD in Energy and Mineral Engineering from the Pennsylvania State University, University Park, USA, MSc in Environmental Resources Management and BSc in Metallurgical Engineering, both from the Kwame Nkrumah University of Science and Technology, KNUST, Kumasi, Ghana. Her previous positions held in UMaT include Acting Pro Vice Chancellor, Dean of Faculty of Mineral Resources Technology, Vice Dean of Planning and Quality Assurance Unit, Head of Petroleum Engineering Department, Head of Environmental and Safety Engineering Department, Coordinator of University Examinations, and Officer of Faculty and Department Examinations.

Professor Ogbonnaya I. Okoro received the B.Eng and M.Eng. degrees in Electrical Engineering from the University of Nigeria, Nsukka in 1991 and 1997 respectively. He holds a Ph.D in Electrical Machines from the University of Kassel, Germany under the DAAD scholarship programme. He is a registered Electrical Engineer(COREN) and Senior member of the IEEE. He was formerly Dean, College of Engineering and Engineering Technology and Head of Department of Electrical/Electronic Engineering, Michael Okpara University of Agriculture, Umudike, Nigeria. He is the current Dean of Postgraduate School, Michael Okpara University of Agriculture, Umudike. Prof Okoro has published extensively in reputable international journals. His research interests are in areas of dynamic simulation and control of induction machines as well as in the thermal and dynamic analysis of AC machines. He is an Author of two Textbooks published by JUTA (South Africa): Concise Higher Electrical Engineering and The Essential Matlab / Simulink for Engineers and Scientists." (Email: profogbonnayaokoro@ieee.org. Department of Electrical/Electronics Engineering, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria).

Fahim Quadir is the Vice-Provost and Dean of Graduate Studies and Postdoctoral Affairs at Queen's University in Kingston, Ontario, Canada. Prior to joining Queen's, Dr. Quadir served as Interim Dean and Associate Vice-President Graduate in the Faculty of Graduate Studies at York University, where he was a Professor of Development Studies. From July 2013 to May 2017, he held the position of an Associate Dean in the Faculty of Graduate Studies. He is the founding director of York University's Graduate Program in Development Studies and its undergraduate program in International Development Studies. Previously, he held academic positions at St. Lawrence University in New York, Queen's University at Kingston and the University of Chittagong in Bangladesh. He also taught at Dalhousie University in Halifax, Nova Scotia.

Professor Quadir specializes in International Development, International Relations and International Political Economy. He has edited/co-edited five books and published extensively in various international peer reviewed journals relating to South-South cooperation, emerging donors, aid effectiveness, good governance, civil society, democratic consolidation, transnational social movements, human security and regional development.

Janet C. Rutledge is currently serving as the Vice Provost and Dean of the Graduate School at the University of Maryland, Baltimore County (UMBC). She is also a faculty member in the Computer Science and Electrical Engineering Department. Prior positions in the Graduate School include Associate Dean, Senior Associate Dean, and Interim Vice Provost for Graduate Education. Before coming to UMBC she was the program director for the Graduate Research Fellowships Program at the National Science Foundation (NSF). In her prior positions at NSF, she served as a program director in the Division of Engineering Education and Centers and the Division of Undergraduate Education. She also chaired the NSF-wide coordinating committee for the Faculty Early Career Development (CAREER) Program. Formerly she was on the faculty in the Electrical Engineering and Computer Science Department at Northwestern University with an affiliate appointment in the Department of Communication Sciences and Disorders.

Dr. Mohamed Ayman Mostafa Saleh is a professor of cardiology at Ain shams university (ASU). Ever since he joined the cardiology department (in 1987), he was deeply indulged in promoting teaching methodology, patient care and putting research plans.

In February 2016 he was appointed as a general manager of ASU hospitals until October 2020 then he was appointed as vice president of Ain Shams University (ASU) for research and postgraduate studies.

Dr. Erick Sánchez Flores is a geographer, specialist in remote sensing and in spatial analysis, from the University of Arizona, and professor at the Autonomous University of Ciudad Juarez, Mexico since 1997. His research focuses on the study of land use dynamics in urban areas. He has published 3 books and more than 20 articles in national and international journals. He has presented his work at more than 40 national and international forums; and 13 advised master and PhD. theses. He teaches undergraduate and graduate courses in geography, remote sensing, geographic information systems, and spatial analysis. He is recognized by the Nacional Council of Science and Technology as National Researcher, level 1, is accredited grant evaluator from CONACyT, and program evaluator the Council for the Accreditation of Educational Programs in Humanities. He is the founder of undergraduate and graduate programs at UACJ, where he was Dean of the Institute of Architecture, Design and Art from 2012 to 2018. Since 2019 he is Graduate Studies Coordinator at UACJ and he recently was appointed president of the Mexican Council of Graduate Studies (COMEPO), where he has served in several steering committees and commissions such as the organization of the 3MT National competition in Mexico.

Appendix

Ad-Hoc Advisory Committee on the CGS Global South Initiative: Strengthening Connections to Postgraduate Education In the Global South—Charge to the Committee

To develop a comprehensive strategy for expanding connections and developing a sustainable network of networks between CGS member universities and their counterparts in the Global South. This plan should identify the following:

1. Strategies for collaboration between CGS and CGS member institutions and universities in the Global South focused on building research and postgraduate educational capacity in those areas of Africa and Latin America not already actively engaged in global partnerships or collaborations;
2. Networks, organizations, associations, governmental agencies or corporate partners with whom CGS could productively partner to facilitate postgraduate education collaborations between CGS member universities and those in the Global South;
3. Promising models of global collaboration that have the capacity to be scaled and sustained. These models should incorporate efforts/mechanisms that enable a balanced flow of students, early career scholars, and graduate faculty mentors between participating universities or nations;
4. Programs or other mechanisms that could facilitate the sustainable two-way flow of students with institutions in the Global South;
5. Programs or other mechanisms that expand opportunities for U.S. graduate students to pursue collaborative education and research in nations of the Global South;
6. Programs or venues that promote the sustainable interaction of postgraduate education leaders from the Global North and the Global South including within the Global South itself;
7. Possible sources of funding to support the two-way flow of graduate students and early career scholars;
8. A 36-48 month action plan and timeline to advance the objectives of the Global South initiative;
9. Possible near and mid-term metrics of success, to include outcomes such as increased recognition of CGS as a key resource for graduate education best practices and strategies, increased two-way flow of graduate students to and from nations of the Global South, increased participation in CGS meetings and convenings from postgraduate educators in the Global South, and increased number of international affiliate members from those areas.