
Mentoring can be a life-changing experience. A mentor-mentee relationship allows people to benefit from guidance from someone with similar experiences. Despite its benefits, mentoring still has not been institutionalized in many cases where it would be helpful. Project case studies indicate that the institutionalization of mentoring boosts morale, productivity, satisfaction, and improves professional performance and work-life balance. Through mentoring, we create change at the grassroots level.

**Introduction:** Mentoring is a two-way relationship based on trust and through which guidance on personal and professional advancement can be received. It is a holistic approach that differs from career guidance through its extension to personal life and its informal and unstructured approach that allows the shifting and changing of participant priorities.

Mentoring allows participants to tailor the nature of their relationship to their respective priorities, redefine personal definitions of success, and determine where they want guidance in their life. The focus is on happiness and satisfaction, not traditional concepts of success. Mentoring relationships also teach participants the necessary personal element to networking, indirectly improving this skill.

In many countries, particularly in the developing world, mentoring has not been fully explored. Through the creation of two-way channels of communication and cooperation, mentoring can also contribute to the success of the Sustainable Development Goals of quality education, gender equality, and reduced inequalities. It is an avenue through which perceptions can be challenged, and agents of change created.

The personalized nature of mentoring allows individuals to define success in their own terms. Establishing new networks also addresses another important issue: women, particularly working mothers, are often less able to benefit from networking outside work hours due to their responsibilities at home. Regardless, mentoring is a useful tool for men and youth as well as women.
Institutionalizing a Mentoring Framework:
Most institutionalized global mentoring exists with graduate students within universities. However, Three Circles of Alemat has developed a toolkit and framework for mentoring that can be used both among professionals and in education. A non-hierarchical, loosely structured mentoring program allows participants to determine what they get out of the relationship.

The institutionalization of mentoring enhances its countless benefits, whether at the professional or educational level. Based on a relationship of mutual trust, mentoring allows for the flow of new ideas, recognition, guidance on personal and professional development, and the opportunity to reflect on one’s own goals.

One of the risks of institutionalization is that it creates a system in which advice or support received may be superficial or not meaningful. However, this risk can be mitigated through institutionalizing mentoring platforms and educating staff and students about the benefits of mentoring without forcing them to participate. The power of mentoring is that it is a voluntary two-way exchange.

Mentoring and Women in the Workplace:
Research shows that work-life balance, diversity, and gender equality in the workplace are key to innovation and productivity. In the field of research, cross-sectoral and international collaboration is less likely to occur between women than men due to fewer opportunities.1

Women are underrepresented, less likely to be promoted, and less likely to aspire to senior management positions. Companies that offer gender-focused programs to improve work-life balance see only a small proportion of employees taking advantage of such programs.2 This then raises the question, if these programs are not improving work-life balance, what can?

Theory of Change
Students, young professionals, and senior staffers all require support at both the personal and professional levels. This will ensure a level of both personal and professional satisfaction where each complements the other. Support can come in various forms, through guidance and advice, exchange of ideas, professional collaboration, or more.

Our theory of change is that this support and subsequent satisfaction can be generated through the institutionalization of mentoring programs. Mentoring as a part of policy (public and private) provides the process with a structure, legitimacy and investment through which mentoring programs can see lasting success.

Current workspaces function in a framework created post-World War I and II. Success is often measured against a male-centric standard, and we continue to assume that women as a monolithic entity want the same thing. Key to providing a solution is taking into account the fact that men and women prioritize differently and to create a mentoring network through which their individual concerns can be directly addressed.

Mentoring is, according to Dr. Zeena Tabbaa, Project Manager of Three Circles of Alemat, about reflection. “Mentoring allows mentees to reflect on their goals and desires, and mentors to reflect on their paths and how they can help others along the way.” Reflection gained through mentoring is key to both personal and professional growth.

Three Circles of Alemat: Testing Mentoring among Women in STEM:
Three Circles of Alemat was formed in response to the low representation of women in academia in Jordan, and the challenges they face. It focuses on female academics in the Science, Technology, Engineering, and Mathematics
(STEM) fields. However, the program was designed to benefit all people — male and female — from mentoring and to define their own paths of success.iii

Three Circles of Alemat was developed in Jordan by a female academic, Dr. Rana Dajani. Identifying issues specific to women in STEM in the Jordanian context, she developed a human-centric approach to mentoring which became the program implemented today. The key distinguishing elements of the Three Circles of Alemat framework are that it is contextual, human-centric, organic, cost-effective, and locally owned. This ensures that established mentoring programs are sustainable and not cumbersome.

The objective of the toolkit is to assist mentors and mentees in creative mentoring circles and social networks to boost their personal and professional wellbeing. The toolkit provides guidelines that are general enough to support a grassroots approach that allows for unique solutions that are contextualized through holistic mentoring. Through this model, participants will go on to incorporate mentorship into their daily lives, creating a domino-effect and spreading the culture of mentorship throughout their personal and professional networks.

The mentoring program and accompanying toolkit was developed and tested in three case studies: at the Jordanian level, across the Arab world, and at an international level connecting Arab diaspora communities to their home countries. The toolkit is geared towards organizations, institutions, and group entities. The project sought National Science Foundation (NSF), National Academies of Science (NAS), and USAID funding to implement its case studies.

Case Study 1: Jordan: After an assessment showed that more than half the country’s educated women were unemployed (a trend in much of the Arab world),iv mentoring was proposed as a method through which women could find the necessary support for work-life balance and guidance. In Jordan, over half the student population at the university level is female. Among those studying for masters’ degrees, 45% are female; pursuing PhD’s, only 34% are female; and women in academic positions see a plunge to 6%, only 2% in the sciences.

Moreover, efforts made to include women in science through grants and contests are often ageist, targeting women under the age of 40 without consideration of the fact that women may choose to stop working when they have children, and resume a few years later. In fact, women in Jordan (and the Middle East) have “two jobs” — at work, and at home. This impacts upon their ability expand their networks during after work hours as men do.v

A 10x10 mentoring model was developed for women academics in STEM in the Hashemite Kingdom of Jordan. The purpose of the program was to encourage women to seek personal and professional support and guidance from a fellow woman in the field. A secondary goal of the project was to create a network through which women could expand their own personal and professional networks through a series of workshops, lectures, and events. This 10x10 method was also considered a success in the USA.

A database of women working in the field was developed, and invitations were sent to gauge interest and allow people to state whether they wanted to participate as mentors and mentees. Following this, a workshop was held to introduce the concept of mentorship.

Mentor-mentee selection was conducted through a speed-dating formula based on studies that show the first 30 seconds of interaction are when you determine your

“We have a brain drain issue and we need to find a way to reverse it; mentoring could be the way.”

His Excellency Professor Adel Twisi, Minister of Higher Education, Jordan
opinion of someone. Mentors and mentees were given the opportunity to spend 1 minute together, before moving on to meeting their next potential partner.

Following this exercise, everyone ranked their choice of mentor or mentee, and matching took place.

The participants – both mentor and mentee – were overwhelmingly positive about the project. It was perceived as innovative, exciting, and challenging. Sustained channels of communication between mentors and mentees depended on the relationship, with some continuing and some falling through. An overwhelming number of participants felt that the program supported their personal development, with mixed reactions on whether it supported their professional development.

“**We all suffer as academics in universities from lack of guidance and inability to manage our time. The challenges facing female academics are numerous: between being a housewife, a wife, a mother, and an academic teacher with research. All of this causes great pressure, and a need for orientation and organizing.**”

*Female Mentee, Jordan*

In Tunis, at the National Institute of Marine Sciences and Technologies, Dr. Oula Amrouni established mentoring circles with both her male and female graduate students and colleagues. Through a circular process of continuous feedback, mentors and mentees improved each other’s performance – professional and academic. A Women’s Network in Academia was also established to provide support for other women in science. This approach was different to the one in Jordan, contextualized for Tunis, and was highly effective as well.

In Jordan and elsewhere in the Arab world, women academics were invited to participate in a pilot implementation study. The purpose of the workshop was to introduce the women to the concept of mentorship and the Three Circles of Alemat toolkit. The 20 female academics all felt the concept of mentoring could be useful in their own universities. They then returned to their home countries and implemented the toolkit in different ways, with varying degrees of success and interesting outcomes.

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Dr. Marmar Abdel Rahman El Siddig at the University of Khartoum conveyed the concept of mentoring to 50 women academics at her own university, as well as 300 women scientists at universities across Sudan. She also expanded her own personal mentoring network to include 12 female postgraduate students, who took on mentees of their own. The Sudanese Women in Science Organization (SWSO) was exposed to the Three Circles of Alemat’s mentoring model through her.

The mentoring toolkit provided was considered helpful. It was broad enough to allow for specific tailoring to the local context, but provided enough guidance to help the academics establish their own mentoring
networks in their home universities. A large number of the women noted that mentoring should be institutionalized in some form or another, adding to its legitimacy within universities and receiving more support from senior management.

As this case study is still in progress, it cannot be assessed in terms of successes, failures, and lessons learned. However, what has been gleaned is intense interest from US entities keen to participate or utilize the Three Circles of Alemat concept in their own programs.

The Society for the Advancement of Science and Technology in the Arab World (SASTA) taking Three Circles of Alemat website and program onto its own server following the end of the current funding cycle. This ensures sustainability and opens the SASTA network to the program, allowing the expansion of mentoring across an existing platform.

Case Study 3: Cross-Regional Mentoring with Arab Diaspora Scientists: The third implementation project is currently in progress, and seeks to connect women scientists who are part of the Arab diaspora in the US to women scientists in the Arab world.

A database of Arab women STEM scientists in the US was created, and invitations sent to them to a workshop in Boston. Unfortunately, due to donor restrictions, travel was at their own expense and only a couple of US scientists could attend. However, advances were made through other avenues, and Arab female scientists from Circle 1 and 2 were present. The Three Circles of Alemat concept was presented at a workshop at the February 2017 American Association for Advancement of Science (AAAS) conference.

At the AAAS conference, delegates from the International Visitor Leadership Program (IVLP) were introduced to the Three Circles of Alemat concept. Women leaders from around the world stated that the lack of mentoring is a common problem in the developing world, particularly among women. This lack of mentoring is a challenge to personal and professional development across the board, particularly among women.

Creating A Mentoring Environment

The 5-step mentoring toolkit is flexible enough to allow for implementation in the public, private, and education sectors and across cultures for very low cost. This allows for local ownership and ensures that mentors and mentees can focus on their contextual needs to maximize benefit from their mentoring relationship. The five steps include:

1. **Understand** the concept of mentoring as a path to personal and professional growth;
2. **Communicate** the concept to your organization to gain support and start the program;
3. **Plan** and prepare for implementation of the program;
4. **Execute** the necessary workshops and introductory sessions;
5. **Follow-up** on mentors and mentees in a regular, yet flexible, manner.

More on the toolkit is available at [http://tca.jssr.jo/resources/mentoring-kit](http://tca.jssr.jo/resources/mentoring-kit)
Another existing program, 500 Women Scientists, with a network of over 19,000 women scientists across the world and local pods across the US, wants to use the mentoring toolkit developed by Three Circles of Alemat in their pods.

During a webinar about 3 Circles of Alemat with members of 500 Women Scientists, it was determined that mentoring very much needed in the USA as well as the developing countries that the program focused on. Existing mentoring programs are rather expensive.

What makes the 3 Circles of Alemat framework stand-out is how cost-effective it is to implement, and how it grows organically. Moreover, the flexible framework allows the program to look past race or gender, bridging gaps in personal and professional lives across all social groups and ethnicities. This methodology also invites creative thinking that includes diversity across disciplines and career stages.

**Project Impact: Successes:** Both mentors and mentees felt strong personal growth through the program and believed it could be a sustained success through proper matching.

Participants matured in their understanding of mentoring as the program developed. Those who were initially dissatisfied with the program grew to understand the objectives on mentoring and appreciate it. Both mentors and mentees saw change and development in their approach to personal and professional success. In fact, the one pair in Circle 1 who had appeared to be failing considered it a success because of their own personal growth.

The success of various mentoring programs through different approaches in different universities was also educational. It affirmed the toolkit’s **flexibility** and feedback from the women academics establishing mentoring programs in their home universities indicated a sense of pride and ownership in their work. Mentoring is applicable in any context regardless of age, sex, gender, culture, or profession, because it builds on human nature.

It is important to point out that the purpose of mentoring is not to promote or attain immediate success, but rather to develop a gradual holistic methodology through which participants can strive for personal and professional satisfaction.

The Three Circles of Alemat mentoring framework has seen a lot of interest from senior academics and decision-makers across the world. Not only have SASTA and 500 Women Scientists embraced the program, but a number of organizations in the UK, as well as senior academics from the University of Cambridge, have also expressed interest in adopting and contextualizing the program for its own minority scientists and professionals.

**Project Impact: Lessons Learned:** The first, and possibly most important, lesson learned was that most participants do not know what mentoring is. There was an initial misunderstanding of the purpose of mentoring, with participants expecting immediate gratification, success, or professional achievement.

Second, it was confirmed that lack of mentoring is a common problem across professions and cultures in both the developing and developed world.

Professor and former University of Jordan Vice-President, Nancy Hakooz (Circle 1) found mentoring to be a learning experience for her as well as her mentee. She stated that she was able to develop a stronger understanding of the challenges faced by her mentee, and come up with ways to help her overcome them.

“Humans beings are social creatures. In an increasingly individualized world where we do not connect with other people, mentoring provides the form of social interaction and advice that was previously found through community ties.”

**Her Excellency Nisreen Barakat, former Minister of Social Affairs, Jordan.**
with techniques to mitigate and address such challenges.

Third, mentors can be anyone. Dr. Marmar Abdel Rahman El Siddig in Sudan (Circle 2) found that her PhD, Master’s and undergraduate students all in turn mentored each other, simultaneously acting as mentor and mentee.

Finally, one of the major constraints on participants was time. Almost all participants felt overwhelmed by their personal and professional commitments and needed more time to be able to attend to their mentor-mentee relationship and their own personal needs.

**Developing a Policy Framework:** Through meetings with key actors, decision makers, and policy makers, it was determined that the institutionalization of mentoring needs to exist as a platform through which voluntary participation is encouraged.

The success of institutionalized mentoring can only be measured once mentoring becomes a trend, a part of corporate, government, and educational culture. This can be developed through three steps: 1) In schools and universities among both students and faculty; 2) Through government structures, with committees studying mentoring and introducing it as policy; and 3) In private sector companies who see the benefits of mentoring in improving the quality of life and productivity of their staff.

The institutionalization of mentoring, whether it be in the public or private sector, needs to ensure that it does not compromise the key elements that make mentoring so successful. Mentoring is a relationship in which participants gain as much as they put in. It is completely voluntary, and it is based on trust.

Institutionalized mentoring needs to be the **platform** provided to the framework, lending it legitimacy and support. Participation can be incentivized (through promotions, recognition, awards) but must not be forced.

**Concluding remarks:** There are countless benefits to mentoring, not the least of which is the personal relationship established between mentor and mentee.

As a two-way channel of communication, mentoring can challenge preconceived notions, provide personal and professional support, and ensure a sustained exchange of ideas. Moreover, mentoring that includes youth participants allows senior mentees to maintain their connection to and knowledge of youth and youth-related concerns and issues, both personal and professional.

The Three Circles of Alemat mentoring framework and toolkit has seen global success. Mentoring circles were effective in Jordan and across the Arab world, and have been received positively in the USA and among women leaders globally.

“**Mentoring forces you to deal with unexpected considerations. It can make you uncomfortable. Being uncomfortable makes you grow, helps you deal with ambiguity, and makes you more creative.**”

_Dr. Rana Dajani, Founder and Director, Three Circles of Alemat._

To enhance the success of existing mentoring programs, and the potential success of new ones, mentoring as a whole should be institutionalized. It is a low-cost method through which personal and professional development can be ensured and new networks created.

Institutionalized mentoring needs to ensure that it maintains the voluntary nature of mentoring participation, as well as training on what mentoring means to ensure that participants are not disappointed by lack of immediate, tangible results in their careers.

Key stakeholders, decision-makers, and senior academics all expressed support for the importance of mentoring. Dr. Anwar Battikhi,
former President of the Hashemite University, former Secretary General of the Higher Council for Science & Technology, and former Vice President of the Jordan University of Science & Technology called mentoring “an important process in universities and schools.” The importance of mentoring does not end there, former Minister Nisreen Barakat claiming that mentoring is especially important among entrepreneurs who seek guidance from those who have gone before them as they establish their businesses.

In Jordan, the success of this program has been a point of pride. As a locally developed and owned project, Three Circles of Alema has shown Jordanians and the wider community that the country is home to innovation and can contribute to improving personal and professional development in numerous sectors and across populations, both at a local and international level.
About the Project Team:
Dr. Rana Dajani is the Founder and Director of Three Circles of Alemat. She has a PhD in Molecular Biology from the University of Iowa, and is currently an Associate Professor at the Hashemite University, Jordan, where she previously served as Director of the Center of Studies. She is a consultant to the Higher Council for Science and Technology in Jordan, and is on the UN Women Civil Society Advisory Group in Jordan.

Dr. Zeena Tabbaa is the Project Manager on Three Circles of Alemat. She has a PhD and a Master’s degree in Education from Rutgers, The State University of New Jersey, and a Bachelor’s degree in Political Science. Her focus is on qualitative research, consultancy, and institutional development.

About the Project:
Three Circles of Alemat received the Partners for Enhanced Engagement in Research (PEER) Award in 2014, under the title, Three Circles of Alemat: Creating Collaborative Multicultural Networks for Women in the Sciences (project number 3-047 Jordan). The project partnered with the Jordan Society for Scientific Research and Dr. Gillian Bowser, from Colorado State University. To date, the project has received funding from the National Science Foundation (NFS), National Academies of Science (NAS), and USAID for different stages of its development and implementation from 2014 to 2017. More information is available on the project and its toolkit on the Three Circles of Alemat website.

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