

TrendsTalk

MeBoP: Advanced Training in the Biology of Parasitism for Middle Eastern Students

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What is MeBoP?

MeBoP stands for 'Middle East Biology of Parasitism'ⁱ. It is an initiative that provides access to cutting edge knowledge and skills in parasitology research as well as a platform for early career researchers from politically conflicted counties to meet, network, and make friends. The 2-week residential workshop is modeled after the annual Woods Hole Biology of Parasitism courseⁱⁱ, thus, it includes lectures and hands-on experimental modules.

For the past 3 years, MeBoP has been taking place at the Institute of Cell Biology at the University of Bern in Bern, Switzerland. The faculty at the institute, with support from Professor Isabel Roditi, has been gracious in allowing MeBoP to use their teaching and student laboratory facilities and in donating administration and technician time to support the course. During MeBoP, students attend morning lectures from worldwide leading parasitologists, and afternoon and evening hands-on laboratory modules. In the past 3 years the two laboratory modules included one focused on cell biology, led by Dominique Soldati-Favre and her group, and a second one covering *Leishmania* diagnostic techniques led by Charles Jaffe and Ibrahim Abbasi.

How did you come up with the idea of MeBoP?

Over many years, we both met at various scientific conferences and observed, like many others have, that science and scientific discourse can form a foundation for mutual understanding and communication regardless of one's background. During the 2015 Molecular Parasitology Meeting in Woods Hole we decided to work on providing a forum for students from the Middle East, North and sub-Saharan Africa to experience excellent science together. We announced our intentions to the attendees and were humbled by the overwhelming support we received. We knew that, with the backing of such a supportive community, MeBoP was possible.

What are the goals of MeBoP?

MeBoP has two overarching goalsⁱⁱ:

- To provide high-caliber scientific training covering various aspects of parasitology research from molecular biology to epidemiology to genomics to drug discovery. We believe that it is critical that scientific skills that are well established elsewhere in the world are disseminated to parasite disease-endemic areas where they can be put into practice to solve local issues. We found that the Middle East is a severely underserved region for training courses of this caliber.
- To provide an environment where young scientists from conflicted political areas are given the opportunity to focus on their mutual professional interests and goals, and to promote networking and the building of professional collaborations across these areas.

Where do MeBoP students come from?

Over the past 3 years MeBoP students came from 21 countries all over the Middle East, North and sub-Saharan Africa (Figures 1 and 2). There are no restrictions on



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country of origin and religious or ethnic background. We believe that science is a universal language that transcends borders and that effective scientific advancement in the region can only occur once cross-border collaboration is the norm.

Where does funding for MeBoP come from?

Funding for MeBoP comes from a number of sources, including several research foundations and private donations. Past funders have included the Bill and Melinda Gates Foundation, The Burroughs Wellcome Fund, The Wellcome Trust, and Paratryp. The vast majority of these funds are utilized for student participation (visa, travel, accommodation, food). We are constantly looking for funding opportunities and welcome suggestions from the community.

Importantly, a major support, and one without which we would be unable to run the course, comes from the volunteer spirit and generosity of our colleagues. Most speakers and teaching assistants cover their travel expenses and are not paid for lecturing. Likewise, as mentioned, the faculty and staff in Bern have been generous in donating the necessary facilities and their time.

What is the impact of MeBoP on the students?

There are a number of outcomes for MeBoP students, which, in most cases, are not available to them without this course. These include:

- Exposure to first rate scientific talks.
- Exposure to cutting edge laboratory and bioinformatic techniques.



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Figure 1. The Last Three MeBoP Courses Included Students from 21 Countries in the Middle East, North and Sub-Saharan Africa.



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Figure 2. MeBoP Students Listening to Instructions from Dr Charles Jaffe during the *Leishmania* Diagnostic Laboratory Module.

- Both of the above outcomes contribute to the progress in students' ongoing research when they get back to their home institutes.
- Networking opportunities with visiting speakers, which most students otherwise do not get due to limited resources for travel to international conferences. This has a major impact on the students and helps in facilitating the next steps in their careers.
- Exposure to young scientists from the region which may lead to future collaborations.
- Experience presenting their science to an international audience. The students present three times during the course, and we can see an improvement in their science communication skills between the first and the third presentation. The students answer a survey each year, and their responses have reflected that these outcomes are indeed delivered.

What is the future vision of MeBoP?

It is our dream to hold future MeBoP workshops in institutions in the target region. Our future strategic goals include:

- Providing seed grants for collaborative projects for former attendees. Such collaborative projects would be designed for establishing cross-border scientific collaborations to solve local problems.
 - Holding MeBoP in the target regions. This may be complicated by the local political situations and availability of appropriate teaching facilities. However, we have built a network of local institutes and researchers willing to help.
 - Establishing or renovating a teaching laboratory in the host institution to serve as a place for MeBoP to be held and as a place where other courses and teaching could occur.
- Additionally, the potential outcome of enhancing collaborations and communications between countries in the target region is an important goal that we hope will not be limited to parasitology. We hope to expand the 'me' initiative model to more areas in the future.

What are the main challenges course participants encounter that MeBoP may help ease?

Many of the students attending MeBoP come from countries where resources are lacking. In addition, the political situation in the entire region often forms a barrier for collaborative work. We believe that MeBoP can be part of the solution: we achieve this by exposing young scientists to potential collaborators outside their country, and outside their region, and providing them with the opportunity to interact face to face. Such personal meetings can pave the way for future scientific collaborations that should help in improving the scientific output of the region.

What is the impact of MeBoP on the parasitology field?

While there are several advanced courses in parasitology, the Middle East has been underserved for such opportunities compared with other regions. MeBoP enhances the link between target region parasitologists and the international parasitology community. Moreover, MeBoP increases the diversity of the field and provides possibilities for unique collaborations as well as access to local samples.

MeBoP is a unique opportunity in the field of parasitology where a focus on excellence in science provides a conducive platform for scientific discourse which we believe can contribute not only to elevating the scientific throughput of the region but also to conflict resolution in general. There are too few initiatives like this, and MeBoP is another sign of the general commitment of the parasitology field to deliver impact to underserved populations.

Resources

ⁱwww.middle-eastbop.com

ⁱⁱwww.mbl.edu/biology-of-parasitism/

ⁱⁱⁱwww.youtube.com/watch?v=BGECO_dgASY&feature=youtu.be

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