

and good nutrition in the first two years of life? Because a lot of child growth faltering happens in that period. The third focus area is around delivering and implementing interventions. Whether we use the market or the public health system for delivery, how to make lasting behavior changes and how to bring programs to scale are key implantation issues, and there is an emerging science around such decisions.

What kinds of projects are underway?

It's a very ambitious, large agenda, so we are tackling it on different fronts. As an example, we started an initiative working with the Global Child Development Group, WHO, UNICEF—all the key partners—to see how we can better integrate research and interventions around early childhood growth, early childhood nutrition and early childhood brain and psychosocial development. We would like to generate more studies that help us understand the systems-biology perspective and the integrated aspect of human metabolism of nutrients.

We are working with a university in Europe and a couple of partners to initiate some work next year looking at how the microbiome affects the absorption of nutrients. That could answer questions about why you see different impacts when you give the same supplement to a population in Africa and another in the Middle East, for instance. It could be the beginning for some interesting, exciting research that connects the dots.

The three winners of the Sackler Institute's inaugural research awards will each receive \$50,000. Tell me about their projects.

One study involves very basic science. It's going to look at the metabolism of fructose and glucose and its linkage to obesity. There has been some evidence from mouse models that the two are linked; we don't have evidence from human models. The samples were already collected from another study, so this will make it easy for them to test the hypothesis.

The second awarded project is exploring how you can look at the global pattern of chronic diseases and the role of nutrition in them, and how policy can help address these. It also examines the comparative effectiveness of strategies that have been used in different places to improve diet. The third study is looking at medical interventions that can enable people to make better choices when they are shopping for groceries based on their budget. It's called a personal shopper, something that they could take with them—it's technically savvy and it's innovative.

Do pharmaceutical companies care about nutrition science?

I think they do care. We have a few pharmaceutical companies on our leadership council. Their scientists have been very, very involved. One area of discussion has been sarcopenia [a disease causing muscle wasting] and how nutrition can help overcome the outcomes of frailty in the elderly. Another area of interest is the link between cognitive function and obesity in older age, and whether some interventions could actually target both of them.

Are there other industries or groups you'd like to partner with?

We would like to work with the private sector, with the public sector, with the nongovernmental organizations, with the UN, and try to find common ground. These are all really important agenda items for the whole global community to address and of course for the institute to be part of to bring partners together who can be really effective in moving this work forward.



Ron Jautz

Straight talk with... Mandana Arabi

Malnutrition affects more than 2 billion people worldwide today, making them more prone to disease and cognitive development problems and more likely to die young. To address this massive health threat, the New York Academy of Sciences created the Sackler Institute for Nutrition Science in 2011. At its helm is Mandana Arabi, a physician-scientist born in Iran who previously worked as a nutrition scientist for UNICEF, the United Nations agency devoted to helping children, where she traveled the world developing large-scale programs to address infant and child malnutrition.

Arabi may now be more rooted to her office in lower Manhattan, but she has certainly kept things moving at the newly established institute. This past December, she hosted a two-day conference, attended by World Health Organization (WHO) officials and many global experts, dedicated to creating a forward-looking research agenda for nutrition science. And last month the institute awarded its first research grants to investigate the intersection of nutrition and disease prevention. Arabi spoke with **Alisa Opar** about how the Sackler Institute hopes to put nutrition research on the scientific map.

What main knowledge gaps did you identify in developing the Global Research Agenda for Nutrition Science?

In really broad strokes, there are three focus areas. The first looks at the knowledge gaps that are related to linking the big, macro-level changes that affect the human population in general. Things like global warming, environmental changes, changes in agricultural productivity, changes in policies—how do you link those to potential nutrition outcomes? For example, we think that biodiversity is good for nutrition diversity, but we can't necessarily show it.

The second gap area is around the first 1,000 days of life. How can we better ensure a healthy pregnancy and an optimal birth weight