



THE SACKLER INSTITUTE  
*for* NUTRITION SCIENCE  
AT THE NEW YORK ACADEMY OF SCIENCES

# ANNUAL REPORT 2014





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# ABOUT US

## THE SACKLER INSTITUTE FOR NUTRITION SCIENCE

The New York Academy of Sciences, in partnership with The Mortimer D. Sackler Foundation, established The Sackler Institute for Nutrition Science to create a coordinated effort to support and disseminate nutrition science research. The Sackler Institute is dedicated to advancing nutrition science research and knowledge, mobilizing communities, and translating this work into the field. The Sackler Institute is generating a coordinated network across sectors, disciplines, and geographies that promotes open communication; encourages exchange of information and resources; nurtures the next generation of scientists; and affects community intervention design and public policy changes. Visit us online at [www.nyas.org/SacklerInstitute](http://www.nyas.org/SacklerInstitute).

## THE NEW YORK ACADEMY OF SCIENCES

The New York Academy of Sciences is an independent, not-for-profit organization that since 1817 has been committed to advancing science, technology, and society worldwide. With more than 22,000 members in 100 countries around the world, the Academy is creating a global community of science for the benefit of humanity. The Academy's core mission is to advance scientific knowledge, positively impact the major global challenges of society with science-based solutions, and increase the number of scientifically informed individuals in society at large. Visit us online at [www.nyas.org](http://www.nyas.org).

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# TABLE OF CONTENTS

From the Executive Director.....	1
2014 at a Glance.....	2
Activation of <i>A Global Research Agenda for Nutrition Science</i> .....	3
Featured Research.....	5
The Sackler Institute Annual Research Award.....	5
High-Level Forum: Activating <i>A Global Research Agenda for Nutrition Science</i> Pre-Studies.....	6
The Sackler Institute Research.....	7
Scientific Conferences.....	9
Technology and Innovation in Agriculture, Food, and Nutrition Conference Series.....	9
Maternal Nutrition and Early Childhood Development Conferences.....	11
Delivery of Interventions Conferences.....	12
Meetings.....	13
Podcasts.....	16
<i>Annals of the New York Academy of Sciences</i> Volumes.....	17
<i>Annals of the New York Academy of Sciences</i> Articles.....	19
A Look Into 2015.....	25
2015 Giving Opportunities.....	26

# FROM THE EXECUTIVE DIRECTOR



Thank you for making 2014 yet another remarkable year for The Sackler Institute for Nutrition Science! The Sackler Institute had a productive year and our dedicated staff has done an incredible job of expanding, and strengthening, our programming.

In partnership with the Division of Human Nutrition at Wageningen University and Research Centre and leaders from academia, government, and the public and private sectors, we reached consensus on critical areas of global research necessary to advance maternal and child nutrition. An international forum that brought together nutrition researchers, heads of policy organizations, program implementation experts, and representatives from public and private institutions, was held in June in Wageningen, Netherlands. This event served as a launching pad for a series of activities to further mobilize the international community around the uptake of research recommendations issued in a report the Sackler Institute developed in collaboration with the World Health Organization, *A Global Research Agenda for Nutrition Science* (2013).

Additionally, the Sackler Institute held its highest attended conference to date in September, which focused on early-life influences on obesity, and completed an 18-month Robert Wood Johnson Foundation grant that looked at perceived priorities and challenges of chronic disease prevention in the United States. Other activities included several *Annals of the New York Academy of Sciences* publications, including a volume with 20 research articles—written by more than 80 leading multidisciplinary researchers—on the topic of integrating nutrition and early childhood development interventions. The volume was launched at an event in collaboration with UNICEF in February.

The Sackler Institute is already gearing up for 2015. Our first conference takes place on March 26-27 and will focus on the role of nutrition in dementia prevention and management. On April 16, the Sackler Institute will host a conference focusing on nutrition in prevention science. Additional 2015 programming includes publication of a policy brief on early childhood development.

This is an exciting time in the Sackler Institute's history; we are catalyzing action to effect changes in human health and quality of life through nutrition science. Thank you again for your continued enthusiasm and commitment.



Mandana Arabi, MD, PhD  
Executive Director  
(2011-2014)

SCIENTIFIC CONFERENCES

**8**  
Conferences

**13**  
Meetings

**1,200**  
Conference Attendees

MEDIA AND PUBLICATIONS

**7** Podcasts, Totaling  
**16,002** Downloads

**8** *Annals of the New York Academy of Sciences* Volumes

**45,318** *Annals of the New York Academy of Sciences* Volume Downloads

**1,050** Social Media Members

**73** *Annals of the New York Academy of Sciences* Peer-Reviewed Articles

**13,421** Total Sackler Institute Webpage Views

**30,268** Total eBriefings Views

SACKLER INSTITUTE NETWORK

**65** Global Scientific Working Group Members

**45** Scientific Organizing Committee Members

**78** Conference Speakers

**8** Research Teams Funded, Totaling **\$363,501<sup>USD</sup>** in Research Awards

2014  
AT A GLANCE

# Activation of A Global Research Agenda for Nutrition Science

The Sackler Institute, with the World Health Organization (WHO), led an initiative to identify research gaps in nutrition science, which resulted in the publication of *A Global Research Agenda for Nutrition Science* (2013). The *Research Agenda* was a two-year process in which 55 researchers were involved and a web-based consultation secured feedback from more than 100 stakeholders in the nutrition science community—from both developed and developing countries.

The Sackler Institute then partnered with the Division of Human Nutrition at Wageningen University to mobilize commitments that address the research gaps outlined in the *Research Agenda's* Focus Area 2: Unresolved Issues of Nutrition in the Lifecycle. The *Research Agenda* identified challenges in understanding the role of nutrition in Developmental Origins of Health and Disease (DOHaD), characterizing normal growth and optimal development during early life, describing and understanding contextual factors, and understanding the relationship between markers of malnutrition (e.g., stunting in children, low height or BMI in women), and functional outcomes.

As a first step in the activation process, an invitation-only preparatory meeting was held on September 26, 2013, where 23 researchers from academia, non-profit organizations, and the private sector met at the New York Academy of Sciences to move this research forward. During the meeting, participants: formulated realistic and pragmatic research questions; identified critical partners that must be involved and brainstormed potential collaborative approaches for supporting research.

Participants agreed to hold a two-day forum at Wageningen University on June 16-17, 2014, with the objective of collectively reviewing and building consensus around research projects specifically focused on maternal and child nutrition.

The High-Level Forum: Activating A Global Research Agenda for Nutrition Science included closed technical sessions that provided an opportunity to discuss promising research projects with small groups of prominent members of the scientific community in the academic, governmental, and private sectors, and focused on the following four themes that were identified during the preparatory work:

1. The health, growth and nutrition of adolescent girls and impact on their future offspring's health;
2. The biological mechanisms that explain differences in response to nutrition interventions;
3. Measurement tools and instruments to assess diets and nutritional status; and
4. Frameworks for scaling up effective nutrition interventions.

Multi-sectoral teams developed preliminary research proposals, guided by the Sackler Institute and Wageningen University, which they presented at a technical session for each theme. Outcomes of these discussions were presented in a public session attended by policymakers and representatives of public and private sectors.

Since the Forum, the working teams have continued to refine the proposals, specifically around the themes related to adolescent girls and dietary assessment (Themes 1 and 3). The Sackler Institute proposes to coordinate a collaborative research initiative aimed at generating research on adolescent nutrition in females through a consultative process involving scientists across sectors and disciplines.

## RESEARCH OBJECTIVES PROPOSED FOR ADOLESCENT FEMALE NUTRITION

- ☛ To identify the nutritional and dietary determinants of preconception nutritional status during adolescence and their drivers;
- ☛ To assess the consequences of changes in nutrition status and its determinants on pubertal development, birth outcomes, and women's health; and
- ☛ To examine the effects of nutrition interventions aimed at improving pre-conception nutritional status on pubertal development, birth outcomes, and women's future health, and to determine if the effectiveness of nutritional interventions is affected by timing of intervention related to lifecycle events.

## RESEARCH OBJECTIVES PROPOSED FOR DIETARY ASSESSMENT

Based on recommendations from the Forum that indicated the need for revisiting dietary assessment methods, the Sackler Institute will host a Stakeholder Consultation on Dietary Assessment Approaches in 2015. Scientists involved in ongoing dietary assessment initiatives will convene to share information to ensure that projects are complementary and consensus over methods can be achieved. Part of the meeting will focus on establishing key recommendations for development of a tool that is methodologically valid. By surveying the landscape of existing and ongoing initiatives, attendees will obtain consensus on what is needed, what can be developed, how the tool will be used, and how current initiatives can be cohesive. This Consultation will continue the discussion from the Forum in a larger group of stakeholders, including those working on developing new dietary assessment tools. The objectives of the Consultation are as follows:

- ☛ To share information on ongoing initiatives to develop and harmonize dietary assessment in various domains, such as WHO/IARC, NHANES, NIH, etc.;
- ☛ To illustrate discussions with concrete examples of various uses of tools and gaps in conducting dietary assessment in research studies; and
- ☛ To deliberate and obtain recommendations for future revision and development of tools for dietary assessments.



# Featured Research

## THE SACKLER INSTITUTE ANNUAL RESEARCH AWARD

The Sackler Institute awarded three researchers with \$50,000 each in early 2014 to pursue innovative research projects related to maternal and child malnutrition. The research award is intended to provide support to researchers concentrating their work on under-explored, and often under-funded, research topics. This year's research projects related to testing new interventions that significantly improve newborn and infant health. Two of the projects support research in Sub-Saharan Africa, where the burden of child malnutrition is among the highest in the world.

### AWARD WINNERS

The research award winners were selected from a pool of 70 high-quality proposals by five expert reviewers. Winners include the following researchers.

#### **Meredith Dyson, MSPH, Catholic Relief Services, Kenema, Sierra Leone**

*Assessing the impact of integrating Early Childhood Development (ECD) into an ongoing child nutrition program for improved child growth outcomes*

“Malnutrition is a persistent problem in Sierra Leone, where one in 10 children die before their first birthday. The standard approaches to prevention and treatment aren't working fast enough. We need a more holistic approach to children's health and wellbeing. We hope that through this research, we can build evidence for a model that supports families to give kids a better start, a better chance for a healthy and happy life.”

#### **Daniel Schober, PhD, MPH, Gretchen Swanson Center for Nutrition, Omaha, Nebraska**

*Effects of a multi-state intervention to promote breastfeeding among mothers with children in childcare*

“This research will help us understand how we can enable more mothers to breastfeed while in childcare facilities. Since the majority of mothers utilize childcare, it is important that this environment helps facilitate child health and well-being through the promotion of breastfeeding.”

#### **Rebecca Stoltzfus, PhD, MS, Cornell University, Ithaca, New York**

*Evaluating the feasibility and acceptability of adherence partners for the prevention of preeclampsia and anemia in pregnant women in Western Kenya*

“Nutrition interventions for pregnant women could greatly benefit women and their infants, but they do not reach women due to a combination of social and health systems barriers. We want to discover whether a home-based support person will help overcome these barriers for pregnant women in rural Kenya.”

## INTEGRATED MULTIPLE MICRO-NUTRIENT AND RESPONSIVE FEEDING INTERVENTION IN GUATEMALA

### **The Mathile Institute for the Advancement of Human Nutrition**

Nutritional deficiencies and the lack of adequate learning opportunities contribute to the loss of developmental potential among more than 200 million children under 5 years of age from low-income and middle-income countries.<sup>1</sup> Without adequate nutrition and responsive feeding opportunities, children are at risk for poor growth, low academic performance and life-long disparities.<sup>2,3</sup>

Recent evidence has shown that in Guatemala, the prevalence of stunting for children under age 5 years exceeds 40%, the highest in the western hemisphere.<sup>4</sup> There is no national preschool and first grade failure is estimated to exceed 40%. The combination of nutritional deficiencies and lack of adequate responsive feeding opportunities undermines the progress of individual children, and threatens the well-being of the entire country.

This project is a collaboration with the Association for the Prevention and Study of HIV/AIDS, in Spanish (APEVIHS) and The Mathile Institute for the Advancement of Human Nutrition. Through the innovative efforts of APEVIHS and The Mathile Institute, a comprehensive micronutrient mix (Chispuditos) has successfully been introduced into the rural communities in Retalhuleu, Guatemala. Early data from over 1,000 stunted children (length-for-age < 1 z-score) have suggested beneficial effects of Chispuditos on children's health, growth, and development.

## HIGH-LEVEL FORUM: ACTIVATING A GLOBAL RESEARCH AGENDA FOR NUTRITION SCIENCE PRE-STUDIES

To inform the proposals that were presented at the High-Level Forum: Activating A Global Research Agenda for Nutrition Science held in Wageningen, The Netherlands, the Sackler Institute commissioned two studies to provide much-needed background information on the current state of adolescent female nutrition.

### SYSTEMATIC LITERATURE SEARCH AND REVIEW ON BIOLOGICAL MECHANISMS OF PUBERTAL DEVELOPMENT AND THE ROLE OF CRITICAL NUTRITION FACTORS IN ADOLESCENT GIRLS

**Machteld Van Lieshout, PhD, Lucy Elburg, Marianne Renkema, PhD, Inge D. Brouwer, PhD, and Frans J. Kok, PhD, Wageningen University**

About 17% of the world's population is adolescent, of which 88% lives in developing countries. Each day, about 20,000 girls under the age of 18 give birth, of which 25% are <15. Adolescence—from approximately 10 to 19 years of age and a period of rapid growth and maturation—provides a unique intervention point in the life-cycle to

address problems originating early in life in offspring, as well as to set the stage for preventing or delaying adult-onset diet-related illnesses. After the first 1,000 days of life (starting at conception), adolescence is a second chance for optimizing health and well-being. The biological mechanisms of the complex series of molecular and physiological events during pubertal development and menarche, and the role of nutritional factors in pubertal development and menarche are not yet well understood. In addition, data on adolescent nutrition status and dietary intake during adolescence are sparse. Nutrition-modifiable factors could play an important role in taking the second chance of adolescence. Evidence about the effects of improving critical nutrition factors on pubertal development (like age at menarche, nutritional status, stature and BMI), birth outcomes, and benefits or risks for adult health need to be built to focus international attention on the range of solutions that will be required to address adolescent malnutrition and fetal and postnatal growth.

A need for a comprehensive and extensive literature search and review that provides the current knowledge on the following questions was needed.

-  What are the biological mechanisms of the complex series of molecular and physiological events during pubertal development and menarche, and how do they affect birth outcome?
-  What are the critical nutritional factors related to dietary practices, nutrient intake (like iron, Ca, Vitamin D intake) and nutritional status (like BMI, body composition, anemia) of adolescents, and their role in the biological mechanism?
-  What are the key research questions to fill knowledge gaps in the above in order to support pubertal development?

<sup>1</sup> Grantham-McGregor, S., et al. 2007. Developmental potential in the first 5 years for children in developing countries. *Lancet*. 369: 60-70.

<sup>2</sup> Shonkoff JP, Garner AS, Siegel BS, et al. The Lifelong Effects of Early Childhood Adversity and Toxic Stress. *Pediatrics*. Jan 2012;129(1):e232-e246.

<sup>3</sup> Black, M. M., et al. 2009. Maternal depressive symptoms and infant growth in rural Bangladesh. *American Journal of Clinical Nutrition*. 89: 951S-957S.

<sup>4</sup> de Onis M, Blössner M, Borghi E. Prevalence and trends of stunting among pre-school children, 1990-2020. *Public Health Nutr*. 2012 Jan;15(1):142-8.





# Scientific Conferences

The Sackler Institute offers the nutrition community access to the latest scientific developments in nutrition and related disciplines through a set of mission-driven program activities including public scientific conferences. Bringing together international experts and partners from academia, industry, government, and beyond, the Sackler Institute provides a neutral forum for participants to exchange critical nutrition research findings.

Through the Sackler Institute Working Groups, innovative conference ideas are generated. Each conference then has a Scientific Organizing Committee that is comprised of a cross-sectoral group of researchers who are experts in the conference theme. The goal of each conference is to have an agenda that is as inclusive as possible while supporting the objectives of the sessions.

The 2014 conferences were developed to complement the three Focus Areas in *A Global Research Agenda for Nutrition Science* (2013). Focus Area 1 discusses sustainability, agricultural, and environmental contexts related to nutrition. Focus Area 2 looks at the research gaps in nutrition science related to nutrition across the lifecycle including maternal nutrition, first 1,000 days, and population effects. And, Focus Area 3 examines delivery of interventions. Topics for this year's conferences ranged from early-life influences on obesity to food safety.

## TECHNOLOGY AND INNOVATION IN AGRICULTURE, FOOD, AND NUTRITION CONFERENCE SERIES

Quickly after the launch of the Sackler Institute's Technology and Innovation in Agriculture, Food, and Nutrition Working Group in Summer 2013, the Group decided on three conference topics from discussions on what they perceived as the leading issues in agriculture and nutrition today. These conferences commenced agriculture and food science as topics at the Academy and introduced a new audience critical in nutrition science.



## Food Safety Considerations for Innovative Nutrition Solutions

November 6, 2014, held at the New York Academy of Sciences, NYC

*eBriefing:* [www.nyas.org/FoodSafety-eB](http://www.nyas.org/FoodSafety-eB), page views not available at time of printing

Failure to provide safe and affordable food to the world's ever-growing population has disastrous consequences. Food scientists have a responsibility to improve and use science-based tools for addressing risk and to advise food handlers and manufacturers with best-practice recommendations. With collaboration from production agriculture, food processors, State and Federal agencies, and consumers, implementation of science-based strategies that address food safety is critical. Food safety concerns of the future are expected to undergo parallel evolution as priorities shift to finding enough food. This conference addressed these issues through the thoughts and predictions of internationally acclaimed experts as we prepare for the food safety issues of the future. Bronze sponsorship was provided by Cargill.



## Consumer Behavior and Food Science Innovations for Optimal Nutrition

March 26, 2014, held at the New York Academy of Sciences, NYC

*eBriefing:* [www.nyas.org/FoodInnov-eB](http://www.nyas.org/FoodInnov-eB), 856 views

Consumer behavior has an enormous impact on nutritional outcomes, particularly in the developed world. Thus, the ability to predict, manipulate, and meet consumer demand confers substantial influence over public health and wellness. The Sackler Institute convened stakeholders from academia, the food industry, retail, government, and nonprofits to consider how to influence consumer behavior to improve nutrition. Highlights of the conference included discussion of how taste, texture, and odor influence food choice; how ingredients are developed to optimize food; and how food selection is influenced by physiological and psychological prompts, social stimuli, media, and technology. Bronze sponsorship was provided by Firmenich.

## Frontiers in Agricultural Sustainability: Studying the Protein Supply Chain to Improve Dietary Quality

December 12, 2013, held at the New York Academy of Sciences, NYC

*eBriefing:* [www.nyas.org/ProteinSupply-eB](http://www.nyas.org/ProteinSupply-eB), 1,000 views

*Annals of the New York Academy of Sciences Meeting Report:* [www.nyas.org/Annals-ProteinSupply](http://www.nyas.org/Annals-ProteinSupply), 745 downloads

*Annals of the New York Academy of Sciences Volume 1328:* [www.nyas.org/Annals-1328](http://www.nyas.org/Annals-1328), downloads not available at time of printing

Podcast: [www.nyas.org/Protein-Podcast](http://www.nyas.org/Protein-Podcast), 2,876 downloads

The world population has undergone tremendous and steady growth since 1950, adding nearly a billion people every 12 to 13 years. More food will be required during the next 50 years than has been produced in all human history, mainly because of the demands of a burgeoning middle class for animal-source protein. However, inefficiencies in the production system, such as waste along the nutrient supply chain, greenhouse gas emissions, and overuse of water, exist alongside diminishing natural resources and shortages of water and cultivable land. The conference focused on improving the protein supply chain, especially through programs designed to increase access to a high-quality diet for malnourished populations.



## MATERNAL NUTRITION AND EARLY CHILDHOOD DEVELOPMENT CONFERENCES

Three conferences this year covered topics revolving around maternal nutrition and early childhood development. The Sackler Institute hosted its highest attended conference to date with 250 in attendance at its Obesity, Diabetes, and Nutrition-Related Diseases Working Group conference: Early-Life Influences on Obesity: From Pre-Conception to Adolescence.



### Early-Life Influences on Obesity: From Pre-Conception to Adolescence

September 26, 2014, held at the New York Academy of Sciences, NYC

*eBriefing:* [www.nyas.org/EarlyObesity-eB](http://www.nyas.org/EarlyObesity-eB), 501 page views (publish date of December 16, 2014)

The double-burden of under- and overnutrition has grave effects on human health globally. According to the World Health Organization (2013), obesity and diabetes rates have almost doubled since 1980 worldwide and more than 40 million children under 5 were overweight in 2011. Factors such as maternal nutrition, paternal genetic contributions, and the intrauterine environment play a role in diabetes. This conference examined the roles of pre-conception and generational effects of nutrition; intrauterine environment and ‘programming’; and re-setting the program after birth in development of chronic disease later in life. Global experts from the fields of maternal nutrition, obesity, the microbiome, metabolic disorders, and fetal development discussed factors affecting obesity rates.

### High-Level Forum: Activating A Global Research Agenda for Nutrition Science

June 16-17, 2014, held at Hotel de Wageningen Berg, Wageningen, The Netherlands

The two-day international Forum hosted a public session with diverse groups of speakers and participants, who convened to discuss maternal and child nutrition and the need for public private partnerships (PPPs) in nutrition science. Speakers included Francesco Branca, MD, PhD, Director of Nutrition for Health and Development at the World Health Organization; Paulus Verschuren, Special Envoy Food and Nutrition Security for Development at



### Shaping the Developing Brain: Prenatal through Early Childhood Fifth Annual Aspen Brain Forum

November 11-13, 2014, held at the New York Academy of Sciences, NYC

*eBriefing:* [www.nyas.org/DevelopingBrainNutrition-eB](http://www.nyas.org/DevelopingBrainNutrition-eB), page views not available at time of printing

This conference featured a dedicated session: Spotlight on Nutrition and Brain Development, co-presented with the Sackler Institute for Nutrition Science. During this session, speakers presented the latest discoveries from cognitive neuroscience and experimental psychology regarding typical and atypical development of human learning and memory, emotion, and social behavior in the first few years of life. They also explored socioeconomic, family, and nutritional factors that can affect brain and behavior. The conference highlighted educational practices, health and nutrition practices, applied research, and government policy with the potential for enhancing healthy brain development and improving outcomes for at-risk children.

the Ministry of Foreign Affairs of The Netherlands; from DSM, CEO Feike Sijbesma, and Manfred Eggerdorfer, PhD, Senior Vice President Nutrition Science & Advocacy; and Zulfiqar A. Bhutta, PhD, Head, Division of Women and Child Health, The Aga Khan University. The public session concluded with a panel discussion on creating successful partnerships in research chaired by the New York Academy of Sciences' President and CEO Ellis Rubinstein. Panelists included Pamela A. Byrne, PhD, Chair of the Management Board, EU-JPI Joint Program Initiative; Lynette Neufeld, PhD, Director of Monitoring, Learning and Research, The Global Alliance for Improved Nutrition; and, Stephen J. Simpson, PhD, The Charles Perkins Centre Academic Director at the University of Sydney.

## DELIVERY OF INTERVENTIONS CONFERENCES

The Sackler Institute hosted two conferences related to Focus Area 3 of the *Research Agenda*. The staff traveled to Washington, DC to host a meeting specifically targeted to policymakers and health economists that looked at nutrition interventions across the continuum of care. The Sackler Institute also hosted its first event in collaboration with UNICEF, which included the launch of an *Annals of the New York Academy of Sciences* volume focusing on early childhood development nutrition interventions.

### Clinical and Economic Outcomes of Nutrition Interventions Across the Continuum of Care

March 13, 2014, held at the Omni Shoreham, Washington, DC

*eBriefing*: [www.nyas.org/NutritionInterventions-eB](http://www.nyas.org/NutritionInterventions-eB), 756 views

*Annals of the New York Academy of Sciences Meeting Report*: [www.nyas.org/Annals-NutritionInterventions](http://www.nyas.org/Annals-NutritionInterventions), 687 downloads

Worldwide, an estimated one in three people admitted to the hospital each year are malnourished. Malnutrition can increase health care costs by delaying patient recovery and rehabilitation and increasing the risk of medical complications. But nutritional interventions may lower these risks, thus shortening hospital stays, preventing

readmissions, and improving malnourished patients' quality of life. Diagnosing and treating malnutrition could improve patient outcomes and reduce health care costs, but more research is needed on the clinical and economic impacts of nutritional interventions for malnourished patients. Researchers, clinicians, economists, and policymakers met in Washington, DC, for this conference, presented jointly by the Abbott Nutrition Health Institute and the Sackler Institute. The conference focused on the role nutrition plays in clinical and home care settings, and speakers discussed new approaches to integrated care and the delivery of nutritional interventions.

### Every Child's Potential: Integrating Nutrition and Early Childhood Development Interventions

February 6, 2014, held at UNICEF Headquarters, NYC

Event Livestream: [www.nyas.org/UNICEF-Livestream](http://www.nyas.org/UNICEF-Livestream)

Podcast: [www.nyas.org/ChildNutrition-Podcast](http://www.nyas.org/ChildNutrition-Podcast), 2,468 downloads

*Annals of the New York Academy of Sciences* Volume 1308: [www.nyas.org/Annals-1308](http://www.nyas.org/Annals-1308), 21,240 downloads

The Sackler Institute and UNICEF hosted a launch event for "Every Child's Potential: Integrating Nutrition and Early Childhood Development Interventions"—a special volume of *Annals of the New York Academy of Sciences*. The event focused on how to optimize and integrate two highly complementary fields: nutrition and child development. Held at UNICEF headquarters, the event brought together diplomats, policymakers, and researchers from key institutions with an interest and investment in furthering children's optimal survival, growth, and development.

# Meetings

Along with hosting public scientific conferences, the Sackler Institute convenes experts for small, closed-door meetings. Many of these meetings are working sessions, where attendees are gathered to deliberate on a certain task. Ongoing meetings consist of two Sackler Institute Board meetings and in-person meetings of the Sackler Institute Working Groups.



## **Technology and Innovation in Agriculture, Food, and Nutrition Working Group In-Person Annual Meeting** *(above)*

November 5, 2014

This meeting was the Working Group's annual in-person meeting where Working Group members Gary Acuff, PhD, Texas A&M University, and Juan M. Gonzalez, PhD, MBA, Mead Johnson Nutrition presented. To follow the theme of the food safety conference on the following day, invited guest Sandra B. Eskin, Pew Charitable Trusts, discussed her work in Pew's food safety program. The Working Group also took time to discuss potential topics for a 2015 conference tentatively scheduled for Spring 2016.

## **The Sackler Institute Board Meeting**

October 9, 2014



## **Obesity, Diabetes, and Nutrition-Related Diseases Annual In-Person Working Group Meeting** *(above)*

September 25, 2014

This meeting was the Working Group's annual in-person meeting where Working Group members Wan Nazaimoon binti Wan Mohamad, PhD, Malaysia Ministry of Health, and Claire Wang, MD, ScD, Columbia University, discussed their current research. Guest presenter, Susanne Stormer, Novo Nordisk, shared information regarding Novo Nordisk's new program "Cities Changing Diabetes Initiative." The Working Group also took time to discuss potential topics for a 2015 conference scheduled for Fall 2015.

## **Prevention of Chronic Diseases in the United States and the Role of Health Technologies: Reviewing the Evidence and Perceived Barriers to Identify Innovative Solutions Workshop**

September 12, 2014

As part of the research methodology in the Sackler Institute's Robert Wood Johnson Foundation grant, government, industry, and nonprofits gathered at the Academy for a workshop to explore and expand the role of prevention in American healthcare. The full-day meeting included presentations on the results from the grant, a panel discussion, and small group work. The data collected during the meeting was the final research methodology for the grant.



**Fortification of Condiments and Seasonings with Vitamins and Minerals in Public Health: From Proof of Concept to Scaling Up** *(above)*

August 26-28, 2014, held at the New York Academy of Sciences, NYC

The Department of Nutrition for Health and Development, World Health Organization (WHO), in collaboration with the Sackler Institute and the Micronutrient Initiative (MI) hosted a three-day technical consultation in August. The objectives of this consultation were to review: the role of condiments and seasonings in improving micronutrient status as constituent of regular diets and patterns of production and consumption worldwide; the technical considerations with regard to amount of fortifiers used, their stability, and bioavailability as well as the acceptability of the final products; the economy of condiment and seasoning fortification and equitable marketing to ensure access by vulnerable populations; and the legal and regulatory issues related to condiment and seasoning fortification and the research priorities to better support evidence of improved nutrition and unintended adverse effects.

**High-Level Forum: Activating A Global Research Agenda for Nutrition Science**

June 16-17, 2014, held at Hotel de Wageningsche Berg, Wageningen, The Netherlands

Over two days, approximately 60 nutrition researchers convened to peer-review four proposals developed for the Forum in partnership with Wageningen University. Each researcher was pre-selected to be in a theme that related to his or her research background.

**Theme 1: The Health, Growth and Nutrition of Adolescent Girls and Impact on their Future Offspring's Health**

Two preliminary studies commissioned for the Forum were presented: a review of biological mechanisms involving growth and nutrition in adolescence (presented by Machteld van Lieshout, PhD, Wageningen University) and a preliminary study of existing datasets to explore nutrition during adolescence using data from Pakistan and Kenya (presented by Zulfiqar Bhutta, MD, PhD, The Aga Kahn University, see pg. 7). The proposal presented aimed to identify determinants of adolescent nutrition, to assess the effect of nutrition interventions on pubertal development, birth outcomes, and adult health, and to determine the best timing of these interventions.



## Theme 2: The Biological Mechanisms that Explain Differences in Response to Nutrition Interventions

This theme formulated the following objective: to assess heterogeneity caused by intrinsic and extrinsic factors and their interactions in growth, immune, and health response. The proposal is to focus research on the 1,000 day period and adolescent girls. The proposed method is to use a systems biology approach accounting for environmental factors to identify the causes of inter-individual variability in growth pattern in response to nutrition interventions. Context information was presented by James Kaput, PhD, Nestlé Institute of Health Sciences, and the proposal was presented by Alida Melse, PhD, Wageningen University.

## Theme 3: Measurement Tools and Instruments to Assess Diets and Nutritional Status

Current estimates are based on food frequency questionnaires and dietary recalls, as well as on biomarkers of intake when they are available. Overall, the information collected through these estimates is inaccurate, and it particularly fails to reflect different dietary patterns in specific population sub-groups. An interest exists in identifying a hybrid method combining food frequency questionnaires and dietary recalls and using new mobile technologies to improve the precision of estimates of dietary intake and validate this tool using biomarkers. The proposal was presented by Katherine Tucker, PhD, University of Massachusetts, Lowell.

## Theme 4: Frameworks for Scaling Up Effective Nutrition Interventions

The need for this research theme arises from the difficulties to shift from effective small scale interventions to programs that are rolled out on a very large scale, adding dimensions of policy, governance, and capacity that are difficult to measure. The proposal was based on the premise that systems science approaches could help the nutrition community address the complexity of scaling up nutrition interventions. Some background about systems science and how it can apply to nutrition intervention in a context of scaling up was presented by Rafael Perez Escamilla, PhD, Yale University, and Mireille Mclean, MA, MPH, the Sackler Institute.

## The Sackler Institute Board Meeting

May 1, 2014

## Technical Assistance Cost-Effectiveness Workshop

May 5-6, 2014

The Sackler Institute developed a Technical Assistance Cost-Effectiveness Workshop for the Ministry of Health Malaysia as part of an ongoing partnership. Workshop participants included a contingency from the Ministry of Health Malaysia and its partner research institutions. The goal of the Workshop was to foster a greater understanding of an ongoing research project at the Ministry of Health (MyBFF@School) while providing insight into specific analytic methods that might be used to demonstrate program impact and provide justification for nationwide dissemination. On the second day, participants visited one of the NYC schools enrolled in Columbia University's Food, Health & Choices intervention grant. Workshop participants engaged in a discussion with the nutrition committee and the principal of the school and viewed a lesson delivered by the Columbia research staff.

## Systems Thinking and Nutrition

February 21, 2014

Twenty researchers attended this full-day workshop, which aimed to explore the potential contribution of a systems-thinking approach to conducting applied nutrition research. The objectives of such research would be to identify the elements of design, implementation, and monitoring and evaluation that can significantly enhance the impact of nutrition programs.

## High-Level Forum Planning Meeting

January 23-24, 2014

This two-day meeting included planning Wageningen University partners and Scientific Organizing Committee members.

# Podcasts

## Food as Medicine: Nutrition and Global Health

[www.nyas.org/FoodMed-Podcast](http://www.nyas.org/FoodMed-Podcast), 1,524 downloads

In the second of a two-part series, experts look at the links between health and nutrition. They examine everything from how nutrition impacts hospital stays, to cancer and aging, to developing food science innovations, and improving diet.

## Micronutrients: Supplementation, Fortification, and Beyond

[www.nyas.org/Micronutrient-Podcast](http://www.nyas.org/Micronutrient-Podcast), 1,410 downloads

In this first of a two-part series, experts from various sectors explore the available options to reduce “hidden hunger”—micronutrient deficiencies in a population.

## A Research Agenda for Nutrition Science: Why and How?

[www.nyas.org/AgendaWhy-Podcast](http://www.nyas.org/AgendaWhy-Podcast), 2,556 downloads

Nutrition science can help make the world a healthier, happier place, but how do researchers know where to start?

## A Research Agenda for Nutrition Science: Mobilizing the Community

[www.nyas.org/AgendaCommunity-Podcast](http://www.nyas.org/AgendaCommunity-Podcast), 2,525 downloads

Scientists, health professionals, and food industry representatives discuss the importance of addressing global nutrition needs from a multidisciplinary perspective.

## A Research Agenda for Nutrition Science: Activating the Agenda

[www.nyas.org/ActivatingAgenda-Podcast](http://www.nyas.org/ActivatingAgenda-Podcast), 2,643 downloads

Scientists, health professionals, and food industry representatives discuss the process of putting *A Global Research Agenda for Nutrition Science* into action.

## Nutrition and Early Childhood Development

[www.nyas.org/ChildNutrition-Podcast](http://www.nyas.org/ChildNutrition-Podcast), 2,468 downloads

Integrating nutrition and early childhood development interventions may amplify the benefits of both for the world’s underprivileged children.

## The Problem with Protein

[www.nyas.org/Protein-Podcast](http://www.nyas.org/Protein-Podcast), 2,876 downloads

Experts discuss innovations in food science and programming that are aimed at sustainably producing adequate protein for the global population.



# Annals of the New York Academy of Sciences Volumes

*Annals of the New York Academy of Sciences* is one of the oldest scientific serial publications in the United States and among the most cited multidisciplinary scientific serials worldwide. Continually published since 1823, *Annals* is the premier publication of the Academy, offering review articles in special topical areas and proceedings of conferences sponsored by the Academy as well as other scientific organizations. The Sackler Institute provides funding for the following open-access volumes and articles.

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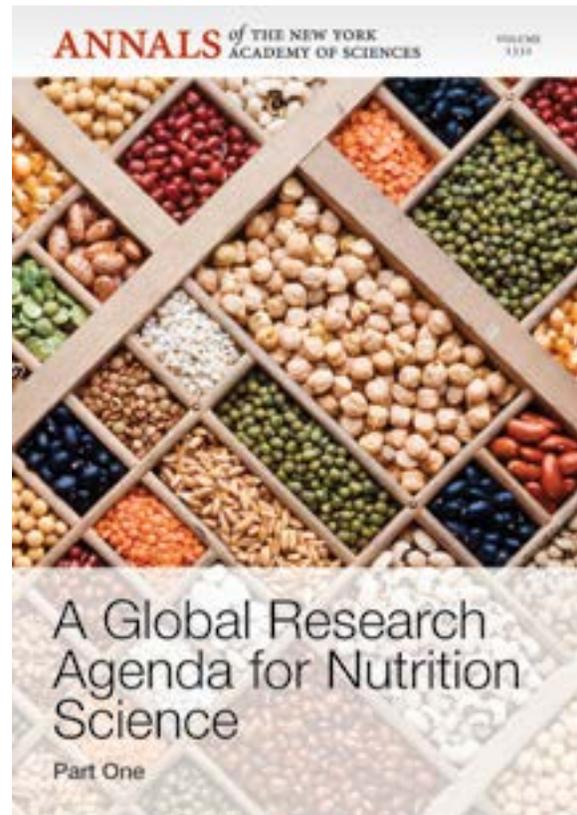
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## **A Global Research Agenda for Nutrition Science, Part One**

December 2014, Volume 1332, [www.nyas.org/Annals-1332](http://www.nyas.org/Annals-1332), downloads not available at time of printing

Edited by *Annals of the New York Academy of Sciences* editorial staff

This *Annals* volume is the first of a two part series presenting A Global Research Agenda for Nutrition Science, which is the culmination of a two-year initiative by the Sackler Institute for Nutrition Science, in collaboration with leading NGOs/IGOs, academic researchers, and the World Health Organization, to identify the most critical knowledge gaps in the field of nutrition. The second volume will be published in 2015.

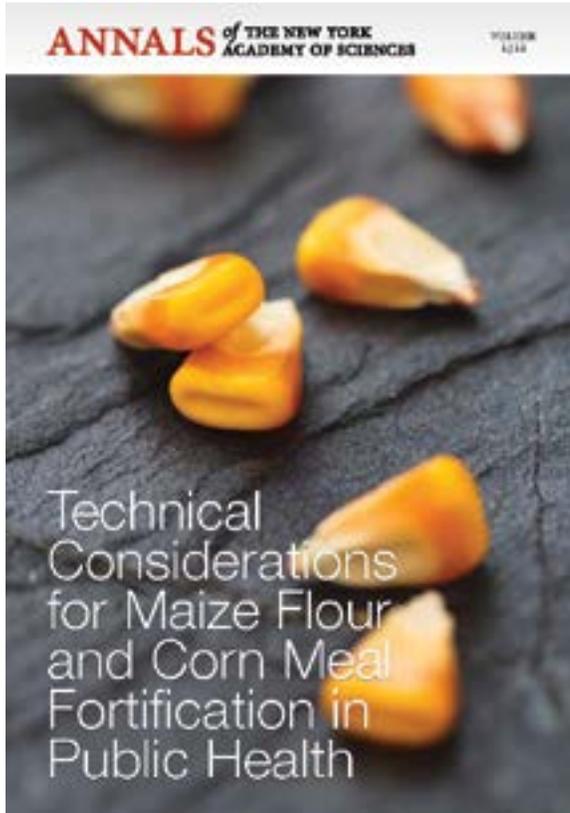


## **Frontiers in Agricultural Sustainability: Studying the Protein Supply Chain to Improve Dietary Quality**

November 2014, Volume 1328, [www.nyas.org/Annals-1328](http://www.nyas.org/Annals-1328), downloads not available at time of printing

Edited by *Annals of the New York Academy of Sciences* editorial staff

This *Annals* volume explores sustainable protein innovations in food science and programming that are aimed at producing the required quality and quantity of protein to consumers worldwide.



## **Technical Considerations for Maize Flour and Corn Meal Fortification in Public Health**

April 2014, Volume 1312, [www.nyas.org/Annals-1312](http://www.nyas.org/Annals-1312), 4,986 downloads

Edited by Juan Pablo Peña-Rosas (World Health Organization, Geneva, Switzerland), Maria Nieves Garcia-Casal (Venezuelan Institute for Scientific Research, Caracas, Venezuela), and Helena Pachón (Flour Fortification Initiative and Emory University, Atlanta, Georgia)

This *Annals* volume explores fortification of staple foods with micronutrients as a public health intervention, with a special focus on technical considerations for maize flour and corn meal.

## **The Year in Diabetes and Obesity**

April 2014, Volume 1311, [www.nyas.org/Annals-1311](http://www.nyas.org/Annals-1311), 17,189 downloads

Edited by Rexford S. Ahima (University of Pennsylvania, Philadelphia, Pennsylvania) and Alvin C. Powers (Vanderbilt University, Nashville, Tennessee)

The fourth installment of this *Annals* series presents scholarly reviews on timely topics in diabetes and obesity.

## **Every Child's Potential: Integrating Nutrition and Early Childhood Development Interventions**

January 2014, Volume 1308, [www.nyas.org/Annals-1308](http://www.nyas.org/Annals-1308), 21,240 downloads

Edited by Maureen M. Black (University of Maryland School of Medicine, Baltimore, Maryland) and Kathryn G. Dewey (University of California, Davis, California)

This *Annals* volume explores the effectiveness of integrating early childhood development and nutrition interventions.

## **Technical Considerations for Rice Fortification in Public Health**

September 2014, Volume 1324, [www.nyas.org/Annals-1324](http://www.nyas.org/Annals-1324), 1,903 downloads

Edited by Luz Maria De-Regil (World Health Organization), Arnaud Laillou (Global Alliance for Improved Nutrition), Regina Moench-Pfanner (Global Alliance for Improved Nutrition), and Juan Pablo Peña-Rosas (World Health Organization)

This *Annals* volume presents papers stemming from a WHO consultation on technical considerations for the fortification of rice with micronutrients as a public health intervention.

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Edited by *Annals of the New York Academy of Sciences* editorial staff

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## TECHNICAL CONSIDERATIONS FOR RICE FORTIFICATION IN PUBLIC HEALTH

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Edited by Luz Maria De-Regil (World Health Organization), Arnaud Laillou (Global Alliance for Improved Nutrition), Regina Moench-Pfanner (Global Alliance for Improved Nutrition), and Juan Pablo Peña-Rosas (World Health Organization)

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April 2014, Volume 1312, [www.nyas.org/Annals-1312](http://www.nyas.org/Annals-1312)

Edited by Juan Pablo Peña-Rosas (World Health Organization, Geneva, Switzerland), Maria Nieves Garcia-Casal (Venezuelan Institute for Scientific Research, Caracas, Venezuela), and Helena Pachón (Flour Fortification Initiative and Emory University, Atlanta, Georgia)

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Edited by Rexford S. Ahima (University of Pennsylvania, Philadelphia, Pennsylvania) and Alvin C. Powers (Vanderbilt University, Nashville, Tennessee)

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## EVERY CHILD'S POTENTIAL: INTEGRATING NUTRITION AND EARLY CHILDHOOD DEVELOPMENT INTERVENTIONS

January 2014, Volume 1308, [www.nyas.org/Annals-1308](http://www.nyas.org/Annals-1308)

Edited by Maureen M. Black (University of Maryland School of Medicine, Baltimore, Maryland) and Kathryn G. Dewey (University of California, Davis, California)

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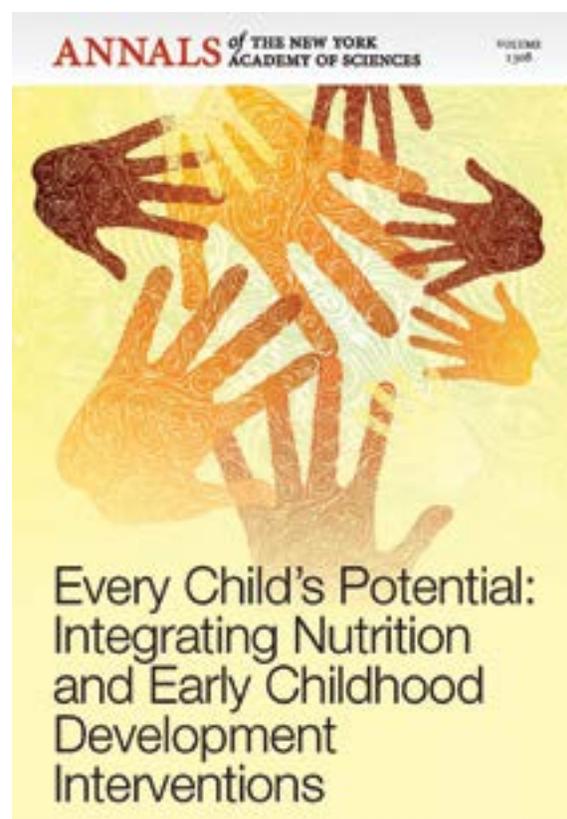
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# A Look Into 2015

## **The Role of Nutrition in Dementia Prevention and Management**

March 26-27, 2015

[www.nyas.org/NutrDementia](http://www.nyas.org/NutrDementia)

Every four seconds, someone is diagnosed with dementia. As the world's aging population continues to grow, dementia and optimal nutrition among the elderly are global health and economic challenges. Today, approximately 44 million people worldwide live with dementia and by 2050 the estimate will reach 135 million. These alarming statistics have widened dementia research to not only focus on pharmaceutical solutions but to investigate prevention and progression strategies through nutritional interventions. On March 26-27, nutrition and dementia researchers and practitioners will gather to discuss emerging nutrition research for the prevention and management of dementia. The conference will focus on three aspects of nutrition for aging populations: 1) Nutritional consequences of the aging demographic: epidemiological perspectives; 2) The role of nutrition in dementia prevention; and, 3) The role of nutrition and distinct nutritional requirements in the management of dementia. This conference is jointly presented by the Nestlé Nutrition Institute and The Sackler Institute for Nutrition Science.

## **Nutrition and the Science of Disease Prevention**

April 16, 2015

[www.nyas.org/PreventionScience](http://www.nyas.org/PreventionScience)

As the global population is characterized by dietary imbalance, rising obesity, nutrient deficiencies and aging, promoting optimal nutrition is an integral part of prevention strategies. Nutrition contributes to physical and cognitive development and affects metabolic and immune functions, thus playing a critical role in protective and risk factors for both population and personal health. This one-day conference

aims to explore the role of nutrition science as a component of innovative approaches in prevention science, and to identify means to better position nutrition interventions within the spectrum of preventative health services.

## **Ministry of Health Malaysia Workshop**

In early June 2015, the Sackler Institute and its collaborators at Harvard and Columbia Universities will travel to Malaysia to present a workshop focusing on cost-effectiveness in obesity research. These activities are part of the ongoing partnership with the Malaysia Industry-Government Group for High Technology (MIGHT). The goal of the workshop is to foster a greater understanding of an ongoing research project at the Ministry of Health (MyBFF@School) while providing insight into specific analytic methods that might be used to demonstrate program impact and provide justification for nationwide dissemination.

## **Year of Pulses: Health, Nutrition, and Food Innovation**

November 19, 2015

The UN General Assembly declared 2016 to be the International Year of Pulses (IYOP). Pulses are the edible seeds of plants in the legume family, which include dried beans, dried peas, chickpeas, and lentils. Pulses are low in fat, high in protein and fiber, and contain various vitamins and amino acids—they also improve the environmental sustainability of annual cropping systems because they are nitrogen-fixing crops. Throughout 2016, global activities will be held that will include governments, farmers, NGOs, retailers, food manufacturers, health and science organizations, and UN bodies. The goal of the 2016 IYOP is to position pulses as a primary source of protein and other essential nutrients. The Sackler Institute and the Global Pulse Confederation, with the support of Pulse Canada, will host the first event in November 2015 at the New York Academy of Sciences, focusing on health, nutrition, and food innovation.

# 2015 Giving Opportunities

The Sackler Institute leverages and builds on the reputation of the New York Academy of Sciences to convene experts from multiple sectors and foster transformative partnerships in the field of nutrition. The Sackler Institute provides key advantages for partners and supporters and depends on financial support from those who value nutrition science and the critical role it plays in improving health outcomes globally. We invite you to join us.

## **A Forum for Debate, Analysis, Networking, and Convening**

Guided by dedication to program excellence, the Sackler Institute facilitates unprecedented debate and analysis among disparate groups in order to drive nutrition research and advocate for positive changes in nutrition policy and practice.

## **Direct Grant Support**

Using *A Global Research Agenda for Nutrition Science* (2013), the Sackler Institute provides direct grant support to research that aims to fill in the gaps in knowledge and evidence, and advocates for evidence-based changes in policy and practice that can ultimately impact medical education, public health practice, and population health.

## **Neutrality**

The principles of neutrality and independence are central to the *modus operandi* of the Sackler Institute and the Academy as a whole. These principles have special meaning in the nutrition field because of its long history of stalled progress stemming from disparate views regarding which approaches and solutions in the areas of food production and consumption are in the best public interest.

Engagement with the Sackler Institute as a supporter can take many forms, including Partnerships, Leadership Initiatives, Special Projects, and Working Group and

Conference Sponsorships. The Sackler Institute also welcomes additional support through customized opportunities. Partnerships allow organizations to participate in the ongoing activities of the Sackler Institute in substantive ways, and provide numerous possibilities for organizations and their leadership and researchers to engage scientifically with the Sackler Institute.

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