Capacity Building in Nutrition Science: Revisiting the Curricula for Medical Professionals

JUNE 6, 2013

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The New York Academy of Sciences

This meeting is part of the Academy’s Translational Medicine Initiative, sponsored by the Josiah Macy Jr. Foundation.

SPECIAL NEEDS

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The Josiah Macy Jr. Foundation and The Sackler Institute for Nutrition Science at the New York Academy of Sciences are very pleased to welcome you to our conference, **Capacity Building in Nutrition Science: Revisiting the Curricula for Medical Professionals**.

The goal of this conference is to revisit the current curricula for medical doctors and relevant professionals, and to explore means to better train professionals to implement the array of preventative and therapeutic nutrition interventions throughout the healthcare system. The questions this conference will address include: Is there a consensus on integrating basic and applied nutrition into the general curriculum and if so, at which stages of training and in what depth? What is the role of nutrition throughout medical specialties? What are current educational models and how do they address needs? This convening will review current practices and their strengths and weaknesses, showcase promising initiatives, and propose new directions for training the future generation of medical practitioners.

This conference is presented as part of the Academy’s **Translational Medicine Initiative** ([www.nyas.org/TransMed](http://www.nyas.org/TransMed)), a three-year partnership between the New York Academy of Sciences and The Josiah Macy Jr. Foundation that has provided a series of publications and events aiming to unite physicians and clinicians with basic researchers, industry and academic scientists, public health experts, and others focused on the pressing issues and challenges of translating new scientific discoveries into real world clinical practice. This initiative closely connects with the Sackler Institute’s aim to build communities and reinforce capacities around key areas of nutritional science, and to encourage knowledge dissemination. The Sackler Institute for Nutrition Science was established by the New York Academy of Sciences, in partnership with The Mortimer D. Sackler Foundation to advance nutrition science research and knowledge, mobilize communities, and apply this work in the field.

To disseminate the day’s scientific discourse, an open-access, multimedia conference eBriefing, featuring a comprehensive meeting report and a selection of speakers’ slides synchronized with high-quality presentation audio, will be made available on the Academy’s website ([www.nyas.org](http://www.nyas.org)) later this year.
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We ask you to take a moment to give us your feedback and help us further improve our scientific programming by completing the online survey for this event at www.nyas.org/MedEdNutrition2013-eval.

We hope that today’s conference will meet your expectations, stimulate exciting discussions, and lead to fruitful new collaborations. Please do not hesitate to notify our staff of any questions, concerns, or suggestions.

Ellis Rubinstein
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Mandana Arabi, MD, PhD
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AGENDA

8:15 AM  Registration and Breakfast

9:00 AM  Welcome Remarks
Brooke Grindlinger, PhD, The New York Academy of Sciences
Mandana Arabi, MD, PhD, The Sackler Institute for Nutrition Science

9:15 AM  Opening Address
Gerald Friedman, MD, PhD, MS, The Icahn School of Medicine at Mount Sinai

9:35 AM  Keynote Lecture I
Be the Change You Want to See in Health: How Changing the Paradigm of Nutrition and Physical Activity Education in Health Professional Training Can Drive the System of Care Toward Better Health
Matthew D. Levy, MD, MPH, FAAP, Georgetown University School of Medicine; Bipartisan Policy Center

10:05 AM  Keynote Lecture II
The Landscape of Nutrition Education in the Medical Student Curriculum
Martin Kohlmeier, MD, PhD, University of North Carolina at Chapel Hill; UNC Nutrition Research Institute

10:35 AM  Networking Coffee Break

SESSION I: NUTRITION FOR HEALTH PROFESSIONALS: CURRENT STATUS AND INNOVATIONS
Session Chair: Martin Kohlmeier, MD, PhD, University of North Carolina at Chapel Hill; UNC Nutrition Research Institute

11:05 AM  Integrating Nutrition in Nursing Education: Pre-Licensure and Advanced Practice
Rose Ann DiMaria-Ghalili, PhD, RN, CNSC, Drexel University; College of Nursing and Health Professions

11:25 AM  Nutrition Education for Dental Professionals: Past, Present, and Future
Carole A. Palmer, EdD, RD, LDN, Tufts University School of Dental Medicine

11:45 AM  A Novel Student-Centered Nutrition Medicine Education Model
Carine M. Lenders, MD, MS, ScD, Boston University Medical Center; Boston University School of Medicine
12:05 PM  Panel Discussion

Gaps, Hurdles, and Progress in Current Nutrition Education for Health Professionals
Moderator: Martin Kohlmeier, MD, PhD, University of North Carolina at Chapel Hill; UNC Nutrition Research Institute
Panelists:
Rose Ann DiMaria-Ghalili, PhD, RN, CNSC, Drexel University; College of Nursing and Health Professions
Carole A. Palmer, EdD, RD, LDN, Tufts University School of Dental Medicine
Carine M. Lenders, MD, MS, ScD, Boston University Medical Center; Boston University School of Medicine

12:25 PM  Networking Lunch

SESSION II: APPROACHES FOR INTEGRATING NUTRITION INTO THE MEDICAL CURRICULUM
Session Chair: Charlotte Pratt, PhD, RD, National Institutes of Health

1:25 PM  Nutrition Education in Women's Health
Ellen Landsberger, MD, MS, Montefiore Medical Center; Albert Einstein College of Medicine

1:45 PM  Nutrition Science in Clinical Pediatrics for Prevention and Management of Childhood Obesity
Eugene Dinkevich, MD, SUNY Downstate Medical Center

2:05 PM  Integration of Nutrition into the Medical Curriculum: The Life Cycle Approach - Nutrition Education for Aging
Marilyn S. Edwards, PhD, RD, University of Texas Medical School at Houston

2:25 PM  Panel Discussion

How Can Health Professionals Be Empowered to Address Nutrition Issues Across the Life Cycle?
Moderator: Charlotte Pratt, PhD, RD, National Institutes of Health
Panelists:
Ellen Landsberger, MD, MS, Montefiore Medical Center; Albert Einstein College of Medicine
Eugene Dinkevich, MD, SUNY Downstate Medical Center
Marilyn S. Edwards, PhD, RD, University of Texas Medical School at Houston
SESSION III: CHALLENGES TO IDENTIFYING COMPETENCIES AND ASSESSING NUTRITION TRAINING FOR HEALTH PROFESSIONALS
Session Chair: Mandana Arabi, MD, PhD, The Sackler Institute for Nutrition Science

3:15 PM *Nutrition and Physical Activity Competencies in the Health Professions*
Sharon R. Akabas, PhD, Institute of Human Nutrition; Columbia University

3:35 PM *Implementing Nutrition Across the Continuum of Medical and Health Professions, Education and Training, and Research: A Summary of an NHLBI Workshop and Related Activities*
Penny M. Kris-Etherton, PhD, RD, The Pennsylvania State University

3:55 PM *Rapid Overview of Insights and Strategies for Assessment in Continuing Education in Nutrition for Health Professionals*
Kathy West, MS, RD, LD, Abbott Nutrition Health Institute

4:00 PM Panel Discussion
*Challenges to Nutrition Education Assessment*
Moderator: Mandana Arabi, MD, PhD, The Sackler Institute for Nutrition Science

Panelists:
Sharon R. Akabas, PhD, Institute of Human Nutrition; Columbia University

Penny M. Kris-Etherton, PhD, RD, The Pennsylvania State University

Kathy West, MS, RD, LD, Abbott Nutrition Health Institute
SESSION IV: NEW DIRECTIONS IN NUTRITION EDUCATION

4:30 PM  Panel Discussion

*Mainstreaming Nutrition Education for Medical Professionals: The Case of the New York State Area*

Facilitator:  
**Judith Wylie-Rosett**, EdD, Albert Einstein College of Medicine  
Panelists:  
**Darwin Deen**, MD, MS, The City College of New York  
**Gerald Friedman**, MD, PhD, MS, The Icahn School of Medicine at Mount Sinai  
**Nancie H. Herbold**, EdD, RD, MS, Simmons College  
**Yasmin Mossavar-Rahmani**, PhD, RD CDN, Albert Einstein College of Medicine  
**Christina Stark**, MS, RD, CDN, Cornell University  
**Riva Touger-Decker**, PhD, RD, FADA, University of Medicine & Dentistry of New Jersey

5:35 PM  Closing Remarks

5:50 PM  Networking Reception

7:00 PM  Conference Adjourns

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Health professionals are uniquely positioned to inform and motivate patients on the subjects of nutrition and physical activity—two key health behaviors underpinning much of our chronic disease epidemic. But the current training and education systems are not aligned to ensure that health professionals have the incentives and expertise to deliver effective messages that positively affect outcomes related to weight, nutrition, and physical activity. Providers lack consistent knowledge of nutrition and physical activity guidelines, understanding of how to deliver key messages, and exposure to complementary health care and community resources for patients. The consensus among medical organizations and experts is that nutrition education at all levels of health training is uneven at best and often inadequate. While some schools and training programs are experimenting with new educational models, these models should be consistent with emerging evidence. In order for these emerging models to take effect to achieve better health however, the behavioral drivers must change. As health professionals we can advocate for better policies and programs through our health institutions, communities, and professional associations. Federal, state, and private sector organizations and individuals are beginning to see the critical role of nutrition and physical activity education on both individual and population health. However, there is still limited evidence about which strategies are most efficient. Nutrition science is the link between pure science and better health, and if we can change the incentives, programs, and policies to support a better understanding then we will improve health and lower costs over time.

KEYNOTE LECTURE II

The Landscape of Nutrition Education in the Medical Student Curriculum

Martin Kohlmeier, MD, PhD1,2
1University of North Carolina at Chapel Hill, North Carolina, United States; 2UNC Nutrition Research Institute, Kannapolis, North Carolina, United States

Most physicians care for patients with nutrition-responsive diseases and conditions, but medical school training often does not prepare students adequately for common clinical nutrition tasks. Few medical schools provide the mandated 25 hours of nutrition education across the four-year curriculum and a
majority offer less than 20 hours. Nutrition content is most often taught as part of
the basic science courses. Integrated programs, often by organ systems, are a
great opportunity to teach about typical nutrition challenges in clinical medicine,
but the nutrition content is often diminished and presented by faculty with limited
qualifications in nutrition instruction and practice. Only a minority of medical
schools incorporates any nutrition education during clinical training and most of
those who do add fewer than seven hours to the total. The precarious situation is
compounded by the very limited number of nutrition questions on licensing exams
and the lack of attention to nutrition education during accreditation reviews of
medical programs. Diverse innovative instructional models can achieve nutrition
teaching goals both quantitatively and qualitatively. Online instruction can support
coverage of a wider range of topics and add more hours than could otherwise
be sustained by the limited number of instructors. Well-planned longitudinal
programs lay the basic science foundations and then teach their students to
apply evidence-based nutrition practices to common case scenarios within
the context of the various clinical disciplines. What is needed most is a broad
consensus on core clinical nutrition competencies, targeted instructor training in
nutrition education, and ready availability of instructional resources.

SESSION I: NUTRITION FOR HEALTH PROFESSIONALS: CURRENT
STATUS AND INNOVATIONS

Integrating Nutrition in Nursing Education: Pre-Licensure and
Advanced Practice

Rose Ann DiMaria-Ghalili, PhD, RN, CNSC, Drexel University; College of
Nursing and Health Professions, Philadelphia, Pennsylvania, United States

The American Nurses Association defines nursing as the “protection, promotion,
and optimization of health and abilities; prevention of illness and injury; alleviation of
suffering through the diagnosis and treatment of human responses; and advocacy
in the care of individuals, families, communities and populations.” Nutrition is an
integral component of nursing care as nurses assess and monitor nutrition and
hydration status, and manage clients with an alternation in nutritional intake. In pre-
licensure nursing programs, nutrition content is delivered in stand-alone nutrition
courses, integrated throughout nursing courses, or through a hybrid approach.
However, standards for nutrition curricula in pre-licensure and graduate nursing
programs do not exist. While advanced practice nurses (i.e. nurse practitioners)
are required to complete the “Direct Care Core 3 P’s”: advanced physiology/
pathophysiology, advanced health assessment, and advanced pharmacology at
the graduate level, no formal coursework or training is required in nutrition. This
presentation will discuss models for infusing nutrition content into pre-licensure
and advanced practice nursing education.
Nutrition Education for Dental Professionals: Past, Present, and Future

Carole A. Palmer, EdD, RD, LDN, Tufts University School of Dental Medicine, Boston, Massachusetts, United States

Dentists and their teams see more patients than any other health care providers. Of the common dental problems experienced by patients, diet and nutrition play a major role in the development of dental caries (tooth decay), and in the extent and progression of periodontal disease (disease of the soft tissue and oral bone surrounding the teeth). Thus providing nutrition education to dental patients for the prevention of dental diseases is considered an important component of dental and dental hygiene practice. The need for a meaningful nutrition curriculum is implied in the accreditation standards of dental schools, and is clearly stated in the dental hygiene program standards.

Today’s focus upon the importance of general as well as dental health promotion and the movement towards interprofessional practice, provides great opportunities for meaningful nutrition programs in dental education. Yet, despite recognition of the importance of nutrition in patient dental care and thus in dental education, nutrition curricula in dental schools have suffer from numerous barriers including lack of time in the curriculum, lack of faculty skilled in applied nutrition, and lack of good models of nutrition practice in dental education. This presentation will review the landscape of dental education in dentistry and dental hygiene, and offer suggestions for models of education appropriate to the needs of a 21st century dental curriculum.

A Novel Student-Centered Nutrition Medicine Education Model

Carine M. Lenders, MD, MS, ScD1,2, Kathy Ireland, MS, RD, LDN1,2, and Cynthia Schoettler, BS2

1Boston University Medical Center, Boston, Massachusetts, United States; 2Boston University School of Medicine, Boston, Massachusetts, United States

For more than a decade, national surveys have reported that most common deaths in the United States are preventable and related to nutrition. As a result, physicians have been urged to counsel their patients but with minimal improvement noted in nutrition medicine education in US medical schools. Our goal was to partner with various Boston University (BU) communities to enhance medical students’ knowledge, attitudes, and practice skills in nutrition medicine. Following the development of a multidisciplinary elective in Advanced Pediatric Nutrition in 2005 and with support from the Physician Nutrition Specialist Award from the American Society for Nutrition and the Associate Dean of Academic Affairs, we assessed the medical school curriculum and developed a novel student–centered model of nutrition medicine education that focuses on student-mentored extra-curricular activities to develop, evaluate, and sustain nutrition medicine. Student interest in nutrition medicine is increasing and has resulted in the development of a nutrition student interest group at BU School of Medicine (2009) and the creation of an intercollegiate alliance in greater Boston (2011).
Using the NIH Nutrition Academic Award (NAA) nutrition objectives to evaluate nutrition in the curriculum, we found that most pre-clerkship objectives were met while United States Medical Licensing Examination (USMLE) step 1 scores continue to improve. However, results of surveys on practical nutrition knowledge and perceived self-efficacy are suboptimal in students across the curriculum. We plan to further administer surveys to students and faculty, and partner with national groups to improve nutrition services and population wellness. Supported by the New Balance Foundation and the Allen Foundation.

SESSION II: APPROACHES FOR INTEGRATING NUTRITION INTO THE MEDICAL CURRICULUM

Nutrition Education in Women’s Health

Ellen Landsberger, MD, MS¹,²
¹Montefiore Medical Center, Bronx, New York, United States;
²Albert Einstein College of Medicine, Bronx, New York, United States

Many women consider their OBGYN doctor to be their primary physician. As such, they expect and deserve their physician to be able to counsel them about nutrition and dietary issues. Historically, there has been a dearth of formal nutrition education to medical providers. Due to this lack of knowledge, physicians are uncomfortable with the topic of nutrition. Opportunities to incorporate nutrition counseling into women’s health visits are numerous. Many women improve their lifestyle habits during pregnancy. Advising women about nutrition and appropriate gestational weight gain can positively influence both the mother and baby. Folic acid intake before pregnancy is critical to decreasing birth defects. Prevention and treatment of osteoporosis is important throughout a woman’s lifecycle. In order to efficiently teach women’s health and other medical practitioners about nutrition, it is essential to consider how they will learn the information and skills most efficiently and effectively.

Nutrition Science in Clinical Pediatrics for Prevention and Management of Childhood Obesity

Eugene Dinkevich, MD, SUNY Downstate Medical Center, Brooklyn, New York, United States

Abstract not available at time of printing.

Integration of Nutrition into the Medical Curriculum: The Life Cycle Approach - Nutrition Education for Aging

Marilyn S. Edwards, PhD, RD, University of Texas Medical School at Houston, Texas, United States

Nutrition is an important topic in medical education and clinical practice yet a majority of physicians report lack of training in nutrition counseling skills. With the current rise in the incidence of chronic diseases related to diet and lifestyle,
nutrition knowledge is essential among all health care professionals and particularly among physicians. Medical students and primary care residents need to be trained in medical nutrition therapy (MNT) related to obesity, diabetes, hypertension, and cardiovascular disease. As a result of the Nutrition Academic Award (NAA) program sponsored by the National Heart, Lung, and Blood Institute (NHLBI) from 1998 to 2005, more nutrition content has been integrated into the curricula at 21 US medical schools. However, the design and implementation of an effective nutrition curriculum remains challenging. This presentation will focus on an integrated nutrition curriculum at the University of Texas Medical School at Houston based on work that was done through the NAA program. In addition to a nutrition theme, the curriculum also incorporates a geriatrics theme which was supported by a Reynolds Foundation grant from 2009 to 2012. Didactic training in nutrition begins in the basic science courses during first year. Problem Based Learning (PBL), a clinical case-based curriculum during second year, builds on the basic sciences and serves as a major focal point for students to apply evidence-based nutrition and prevention strategies to patients at different stages of the life cycle. Clinical clerkships during third and fourth year include lectures and clinical nutrition relative to pediatrics, family medicine, and critical care. Finally, during a fourth year transition to residency workshop using the Nutrition in Medicine short courses, students are provided the opportunity to review motivational interviewing and counseling skills related to diet and lifestyle modification for chronic diseases. This presentation will conclude with recommendations for sustainable integration of nutrition into a four-year medical curriculum.

SESSION III: CHALLENGES TO IDENTIFYING COMPETENCIES AND ASSESSING NUTRITION TRAINING FOR HEALTH PROFESSIONALS

**Nutrition and Physical Activity Competencies in the Health Professions**

**Sharon R. Akabas**, PhD, Nathalie Marchand, MS, and Jill Thekkekera, MS, Institute of Human Nutrition; Columbia University, New York, New York, United States

An important step in the integration of nutrition and physical activity into health professional training is the development of core competencies. As an extension of the National Heart, Lung and Blood Institute (NHLBI) meeting held in September 2012, a working group was formed to identify and map the core competencies that currently exist in dentistry, medicine, nutrition, nursing, pharmacy, and training of physician assistants. The core competencies will include basic knowledge about nutrition and exercise science, skills related to patient assessment, and training in behavioral science. The process of identifying competencies will acknowledge the different stages wherein nutrition and physical activity are relevant, including prevention, treatment of chronic disease, and intervention in acute care settings. Where possible, common core competencies across professions will be developed and evaluation of the core competencies will be included in their development. Once existing competencies are identified, the development of new ones will be informed by a broader initiative currently
Implementing Nutrition Across the Continuum of Medical and Health Professions, Education and Training, and Research: A Summary of an NHLBI Workshop and Related Activities

Penny M. Kris-Etherton, PhD, RD¹, Sharon R. Akabas, PhD², Charlotte Pratt, PhD, RD³, Edward Saltzman, MD⁴, Nancy Krebs, MD⁵, and Matthew D. Levy, MD, MPH⁶

¹Nutritional Sciences, The Pennsylvania State University, University Park, Pennsylvania, United States, ²Institute of Human Nutrition, Columbia University, New York, New York, United States, ³National Heart, Lung, and Blood Institute, Bethesda, Maryland, United States, ⁴Tufts University School of Medicine, Boston, Massachusetts, United States, ⁵University of Colorado, Aurora, Colorado, United States and ⁶Medstar Georgetown University Hospital, Washington, District of Columbia, United States

The National Heart, Lung, and Blood Institute (NHLBI) collaborating with the NIH Office of Disease Prevention and the Division of Nutrition Research Coordination convened a meeting on implementing nutrition across the continuum of training medical students through residency, and training other health professionals in September, 2012. The objectives were to make recommendations 1) on the content and implementation of nutrition and healthy lifestyles education, training, and competency testing and 2) on the integration of nutrition education, training and research to improve population health, patient care, and health outcomes. Guiding principles for nutrition education in professional schools were defined. Crosscutting themes for health professional training recommendations were: 1) revise the Nutrition Academic Award (NAA) Curriculum Guide and update learning objectives and competencies for all relevant health professionals; 2) support a Nutrition Education and Research Coordinating Center that would serve as an oversight and coordinating body for nutrition education and research; and 3) encourage multi-disciplinary teams, approaches, and referral systems across the continuum of health professional training. Nutrition education research priorities were identified to advance nutrition education in training health professionals. A core paper and companion papers on the need for nutrition education in training medical and health care professionals and the research recommended to evaluate it have been prepared for publication in an American Society for Nutrition (ASN) journal. There is interest among professional organizations in advancing nutrition education activities for health care professionals. One example is that the ASN Nutrition Education Planning Committee and the Subcommittee for Professional Nutrition Education have begun to build a road map for nutrition education of health care professionals. Implementation of recommendations will require partnership with a broad coalition of organizations.
Annals of the New York Academy of Sciences

The Year in Diabetes and Obesity
Edited by Alvin C. Powers (Vanderbilt University, Nashville, Tennessee) and Rexford S. Ahima (University of Pennsylvania, Philadelphia, Pennsylvania), Volume 1281, April 2013

This series explores timely topics in obesity and diabetes research, including scholarly reviews on inflammatory cytokines in the pathogenesis of type 1 diabetes, cardiovascular disease and glycemic control in type 2 diabetes, type 2 diabetes in Asian compared to Caucasian populations, Islet β cell mass in diabetes, nonalcoholic fatty liver disease, metabolic syndrome in children, the role of physical activity, human adipose dynamics and metabolic health, the genetics of human obesity, and managing obesity in primary care.

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The Sackler Institute for Nutrition Science at the New York Academy of Sciences, and in collaboration with the World Health Organization, launched a global initiative to formulate a research agenda for nutrition science to set the stage for new explorations, finding ways to best translate this agenda into effective action to improve human nutrition worldwide. The Research Agenda was created through a collaborative process over the past year involving stakeholders from every aspect of the global nutrition community, concluding with the following three Focus Areas.

**Focus Area 1:** Environmental and societal trends affecting food and nutrition among vulnerable populations

**Focus Area 2:** Unresolved issues of nutrition in the lifecycle, with particular focus on the mother and child

**Focus Area 3:** Delivery of interventions and operational gaps

*Learn more about the Research Agenda and the global conference held on Dec.17 & 18, 2012 at: [www.nutritionresearchagenda.org](http://www.nutritionresearchagenda.org)*

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