

**MINUTES OF THE NUTRITION COORDINATING COMMITTEE (NCC)  
MEETING, NATIONAL INSTITUTES OF HEALTH (NIH)  
Rockledge 2, Conference Room 9100-9104, Bethesda, MD  
November 5, 2009 2:00- 4:00 PM**

**WELCOME**

RADM Van Hubbard, Director, NIH Division of Nutrition Research Coordination (DNRC), convened the meeting at 2:05 PM and welcomed participants. Participating via phone were: Dr. Darla Danford, NIH NHLBI; Ms. Karen Donato, NIH NHLBI; Dr. Judy Hannah, NIH NIA; Dr. Molly Kretsch, USDA; Ms. Michele Lawler, HRSA; Dr. Marshall Plaut, NIH NIAID; Dr. Dan Raiten, NIH NICHD, and Dr. Jacqueline Wright, CDC. The agenda for the meeting is provided as Appendix A, and the list of attendees is provided as Appendix B.

**APPROVAL OF MINUTES FROM THE SEPTEMBER 3, 2009 NCC MEETING**

Minutes from the September 3, 2009 NCC meeting had previously been sent to NCC members via email. RADM Van Hubbard asked if there were any other corrections to the minutes. There were none. Dr. David Klurfeld, US Department of Agriculture, made a motion to approve the minutes, and Dr. Barry Portnoy, NIH Office of Disease Prevention, seconded the motion. The minutes were thus approved and will be posted on the DNRC website, <http://www.dnrc.nih.gov>, along with the minutes from previous NCC Meetings.

**CHAOS AND COMPLEXITY IN PUBLIC HEALTH**

Dr. Ken Resnicow, a Professor in the Department of Health Behavior and Health Education at University of Michigan School of Public Health, gave a presentation on the complex and chaotic nature of health behavior change. Much of Dr. Resnicow's work has been informed by Chaos Theory and Complexity Science, and he presents a novel approach to behavior change. He suggests that instead of using models that rely on knowledge to drive human motivation (i.e. Health Belief Model, Transtheoretical Model), we should incorporate the use of models that rely on spiritual or metaphysical motivation and an epiphany or deeper meaning to drive change (Self Determination Theory, Motivational Interviewing).

The view that chaos and complexity drives behavior change is based on several non-linear concepts: 1) Behavior change is often a quantum rather than a linear event (small input - large output); 2) Behavior change is highly variable and difficult to predict (non-deterministic); 3) Behavior change is sensitive to initial conditions; 4) Behavior change is a complex dynamic system that involves multiple component parts that interact (in a nonlinear fashion) and the results of their interaction are often greater than the sum of their parts (non-reductionistic); 5) Patterns of change can be mathematically modeled, however such patterns usually involve non-linear terms and multiple levels of interaction; and 6) Many decisions are not rational - information is necessary but insufficient.

Because health education as currently conducted causes reactants and does not have a long half-life, it may actually do more harm than good. Research by Matzger et al

(2005) has shown this to be the case in a study related to alcohol consumption. It appears that unplanned events or quantum changes have a greater likelihood of instigating sustained behavior change. However, how these events relate to diet and activity behavior is less clear. Does changing diet and activity require transformative motivation? If so, for whom? It is not easy to predict who will have a successful change nor is it easy to predict which events can spur an individual to action. Small changes in initial conditions can have a large impact on outcomes.

There are several implications of chaos and complexity for behavior change. From the standpoint of a health practitioner, it is better to use “pull” messages than “push” messages. Our goal as health behaviorists should be to prime individuals so that when positive chaotic events occur, the appropriate knowledge, attitude, and skills are present. It is also important to provide multiple opportunities for ideas to “stick.” Vary time, mood, and day of intervention. Discuss values to possibly elicit talk of change. Motivational Interviewing can be used to facilitate fully informed, deeply contemplated, and internally motivated choices, not necessarily to change behavior.

From a research standpoint, there are other implications to consider. Further assessment of planned vs. quantum change is needed. Questions that ask individuals who have made behavior changes what process they used would be helpful to include in various surveys. In addition, researchers should rethink the predictability of behavior change and accept the random component of change. In doing this, they should drop the search for the magic main effect. It is also important to rethink the linear modeling of behavior change and reconsider replication studies. Because studies are sensitive to initial conditions, replication is likely not possible. Most importantly, it is important to recognize complexity and recognize that it is here to stay.

## **SOY PROTEIN AND ISOFLAVONE RESEARCH: CHALLENGES IN DESIGNING AND EVALUATING INTERVENTION STUDIES**

Ms. Marguerite Klein, NIH Office of Dietary Supplements, provided a summary of the workshop entitled “Soy Protein and Isoflavones Research: Challenges in Designing and Evaluating Intervention Studies” that was held on July 28-29, 2009. The workshop was co-sponsored by the ODS along with other NIH Institutes and Centers (National Center for Complementary and Alternative Medicine, National Cancer Institute, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institute on Aging, and the Division of Nutrition Research Coordination).

The purpose of this workshop was to provide guidance for the next generation of soy protein and isoflavone human research. Specifically, the workshop objectives were to identify (1) methodological issues relative to exposures and interventions that may confound study results and interpretation and (2) identify scientifically sound and useful options and solutions for dealing with these issues in the design, conduct, reporting of results, and interpretation of ongoing and future studies.

Session topics included population exposure, variability of human response, product composition, methods to estimate exposure and adherence, and methods to analyze foods, supplements and biologic tissues. A few of the many take-away messages

from the workshop include the following: not all soy products are created equal; many published papers use incorrect terminology and do not characterize the test agents; soy and non-soy phytoestrogens are present in substantial amounts in foods commonly consumed, the Consolidated Standards of Reporting Trials (CONSORT) checklist should be used when reporting on randomized controlled trials of herbal medicine interventions; valid methods to assess product composition and biomarkers should be used; and bioavailability should be an important component in the interpretation of results.

A publication of guidance will be available in a special supplement to the Journal of Nutrition. Members of the Planning Committee are also continuing to meet to discuss further research recommendations.

### **FOLLOW-UP INTERACTIONS WITH THE EUROPEAN COMMISSION**

RADM Hubbard thanked NCC members who were able to meet with members of the European Commission when they visited on October 14<sup>th</sup>. Discussions took place around obesity-related issues as well as a variety of nutritional science issues. The DNRC will serve as an initial contact point for providing an exchange of additional information. As specific activities are identified, then direct interactions should be between appropriate NIH and EC staff. The DNRC can be kept informed of the information being exchanged and the general topic so as to facilitate coordination of interests across multiple organizations that may have related activities.

### **REPORTS FROM NCC MEMBERS AND LIASONS**

A handout was provided at the NCC meeting to remind federal employees that it is possible to request a complimentary copy of any National Research Council, National Academy of Sciences, National Academy of Engineering, or Institute of Medicine publication from the Office of Congressional and Government Affairs, Please see the following link for instructions.

<http://www7.nationalacademies.org/ocga/RequestReport.asp>

Recent publications that may be of interest are as follows:

- [Integrative Medicine and the Health of the Public: A Summary of the February 2009 Summit](#)  
Released: November 4, 2009
- [Nanotechnology in Food Products. Workshop Summary](#)  
Released: October 29, 2009
- [Community Perspectives on Obesity Prevention in Children. Workshop Summary](#)  
Released: October 21, 2009
- [School Meals: Building Blocks for Healthy Children](#)  
Released: October 20, 2009

- [Local Government Actions to Prevent Childhood Obesity](#)  
Released: September 1, 2009
- [The Public Health Effects of Food Deserts. Workshop Summary](#)  
Released: June 25, 2009
- [Managing Food Safety Practices from Farm to Table. Workshop Summary](#)  
Released: April 22, 2009
- [Nutrition Standards and Meal Requirements for National School Lunch and Breakfast Programs: Phase I. Proposed Approach for Recommending Revisions](#)  
Released: December 3, 2008

### **UPDATE FROM THE NIH OFFICE OF DIETARY SUPPLEMENTS (ODS)**

Ms. Marguerite Klein, ODS, shared the following information with the NCC:

**ODS Seminar Series.** The final seminar of this semester will be given on Wednesday, December 2 by Dr. Ahmed El-Soheby from the University of Toronto. Next semester will feature: Kevin Fritsch, Univ of Missouri (Jan); Raphaela Goldbach-Mansky, NIAMS (Feb), Marie Caudill, Cornell Univ (Mar), Mindy Kurzer, Univ of Minnesota (Apr), and Gary Foster, Temple Univ (May).

**Nutrient Biomarkers Analytical Methodology Workshop.** ODS will convene the 3<sup>rd</sup> in a series of workshops on analytical methodology. The first two focused on vitamins and minerals in dietary supplement matrices. We are now moving to the challenges of measuring biomarkers of nutrient status in biological samples, beginning with a workshop on Wednesday, Dec 16, to address the analytical measurement of 25-hydroxyvitamin D in serum. The agenda can be found at: [http://dietary-supplements.info.nih.gov/News/Vitamin\\_D\\_Biomarkers\\_Methods\\_Workshop.aspx](http://dietary-supplements.info.nih.gov/News/Vitamin_D_Biomarkers_Methods_Workshop.aspx). Space will be limited, so if you are interested in attending, you are encouraged to register soon.

### **UPDATE OF DNRC ACTIVITIES**

RADM Hubbard informed the NCC that CAPT Margaret McDowell has joined the DNRC from the National Center for Health Statistics at CDC and will be heading the NCC Nutrition Education Subcommittee. The DNRC is very excited to welcome CAPT McDowell to the NIH community.

*Nutrition Education Subcommittee (NES).* CAPT Margaret McDowell, DNRC, provided an update on the activities of the NIH NCC NES. For the calendar year 2009, the NES has reviewed 18 documents: 12 from NIH (7 from NHLBI, 4 from ODS and 1 from NCI),

3 from FDA, 2 from CDC, and 1 from ODPHP. One document has been reviewed since the last NCC meeting on September 3, 2009:

- o Alaska Native easy-to-read booklet promoting heart healthy lifestyles (NHLBI)

The DNRC listing of NIH nutrition education materials is available on the DNRC website ([http://dnrc.niddk.nih.gov/nutrition\\_education/index.shtml](http://dnrc.niddk.nih.gov/nutrition_education/index.shtml)). NCC members are requested to check the information on the website and provide any updates or other changes to Ms. Karen Regan, DNRC. The DNRC would appreciate receiving 10-20 copies of newer NIH nutrition-related publications for display in the DNRC Office. Please send them through interoffice mail to Ms. Sharon Frazier, DNRC, Democracy 2, room 624A.

*International Committee Information:*

On behalf of Dr. Dan Raiten (NICHD), RADM Hubbard shared several items from the International Committee:

World Health Organization Report

A link to a new WHO report, *Global Health Risks: Mortality and burden of disease attributable to selected major risks*, was sent to the NCC prior to the meeting and is also included below.

[http://www.who.int/healthinfo/global\\_burden\\_disease/GlobalHealthRisks\\_report\\_full.pdf](http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf)

This report covers some very important information that NCC members may be interested in including in some of their future presentations. If reading the report stimulates ideas for future actions that could be taken by the NCC, please contact Dr. Hubbard ([hubbardv@mail.nih.gov](mailto:hubbardv@mail.nih.gov) )

ICN:

NIH staff attending the recent International Congress of Nutrition (ICN) in Bangkok, Thailand, presented a pre-Congress seminar highlighting NIH interests, processes and opportunities in international nutrition research. In addition to NIH staff representing DNRC, NCI and NICHD, Dr. Reynaldo Martorell presented on perspectives of an investigator about NIH's role in international nutrition research. NIH participating staff included: Dr. Pamela Starke-Reed (DNRC), Dr. John Milner (NCI) and Dan Raiten (NICHD). This was the second time NIH staff have presented to the ICN and as with the original effort the seminar was well received by the attendees.

Biomarkers of Nutrition for Development (BOND):

The following was not discussed at the NCC meeting but was provided by Dr. Raiten for the minutes.

The first major activity under this program will be a workshop to be hosted by the International Atomic Energy Agency (IAEA) at their headquarters in Vienna on February 8-10, 2010. The goal of the meeting will be to reach agreement about definition of terms and a process for making recommendations about biomarkers under specific conditions

and for specific uses. In anticipation of the meeting, working groups have been formed according to four major "user" groups: research, clinical (point of care), program, policy. Each working group will develop a working paper that will serve as the basis for deliberations at the meeting. The definitions and process will then be applied to 4 case study nutrients (iron, zinc, vitamin A, folate/B12). The current roster of participating agencies and organizations includes NIH (DNRC, NCI, NICHD, FIC, ODS), CDC, USDA/ARS, FDA, USAID, WHO, UNICEF, WFP, IAEA, MI, HKI, Bill and Melinda Gates Foundation, GAIN, ILSI, PEPSICO and the academic community.

If any ICs/agencies are interested in more information about BOND please contact Dr. Raiten ([Daniel.Raiten@nih.hhs.gov](mailto:Daniel.Raiten@nih.hhs.gov)).

### **NEXT NCC MEETING**

The next meeting will be December 3, 2009

### **ADJOURNMENT**

The meeting was adjourned at 3:50 PM

### **LIST OF APPENDICES**

Appendix A: NIH NCC Meeting Agenda for November 5, 2009

Appendix B: NIH NCC Meeting Attendees for November 5, 2009

## APPENDIX A: NIH NUTRITION COORDINATING COMMITTEE MEETING AGENDA

1. **Welcome**.....Van Hubbard
2. **Approval of Minutes of the September 3, 2009 meeting**.....Van Hubbard
3. **Scientific Presentation: Chaos and Complexity in Public Health** .....Ken Resnicow, University of Michigan
4. **Soy Protein and Isoflavone Research: Challenges in Designing and Evaluating Intervention Studies**.....Marguerite Klein, ODS
5. **Follow-up interactions with the European Commission**.... Van Hubbard and other participants
6. **Reports from NCC Members and Liaisons**..... NCC Members
7. **ODS Activities Update**.....Marguerite Klein, ODS
8. **Current DNRC Update of Activities** .....DNRC Staff
  - Nutrition Education Subcommittee Update.....Margaret McDowell\*
  - International Committee Information.....Pam Starke-Reed/Dan Raiten\*
  - HNRIM Update.....Jim Krebs-Smith/Karen Regan
9. **Next Meeting** .....December 3, 2009

**Will feature a presentation on Nanotechnology and Nutrition by**  
Dr. Tania Vu, Ph.D.  
Assistant Professor  
Division of Biomedical Engineering  
School of Medicine, Oregon Health and Science University

\* Updates will be included in the minutes of the meeting only

## APPENDIX B: NCC MEETING ATTENDEES FOR NOVEMBER 5, 2009

	Members Present	Members Absent	Alternates Present
<u>Chairperson:</u>	V Hubbard		
<u>NIH Members:</u>			
NCI		J Milner	
NHLBI	D Danford		K Donato
NIDCR		R Nowjack-Raymer	
NIDDK	C Miles		
NINDS		M Mitler	
NIAID	M Plaut		
NIGMS		S Somers	
NICHHD		G Grave	D Raiten
NEI		N Kurinij	
NIEHS		E Maull	
NIA		J Hannah	
NIAMS			T Smith
NIDCD		B Wong	
NIMH		W Riley	
NIDA		G Lin	
NIAAA		R Breslow	
NINR		P Cotton	
NCCAM		L Duffy	
NCMHD		D Tabor	
NCRR	K Arora		
FIC		M Levintova	
NHGRI		S Basaric	
<u>NIH Liaison Members:</u>			
CC		N Sebring	
CIT		J Mahaffey	
CSR	S Kim		N Sheard
NLM		S Phillips	
OBSSR	L Bosco		
ODS		P Coates	
OD/ODP	B Portnoy		
OLPA			
ORWH			
PRCC		M Vogel-Taylor	
<u>Agency Liaison Representatives:</u>			
AHRQ		I Mabry-Hernandez	
CDC/NCCDPHP		H Blanck	
CDC/NCHS		C Johnson	
FDA		K Ellwood	
HRSA	M Lawler		
IHS		T Brown	
ODPHP		K McMurry	
USDA, ARS	D Klurfeld		
USDA, REE	M Kretsch		
DOD		K Friedl	

DNRC: R Fisher, S Frazier, W Johnson-Askew, C McDade-Ngutter, M McDowell

Guests: J Burdg (Moveable Feast), L Caccavale (NICHHD), K Engeln (NICHHD), A Ershow (NHLBI), P Gao (NIAAA), A Gerber (Wellness on the Run), J Heap, M Klein (ODS), M Mattingly (NIDDK), C Pratt (NHLBI), D Rabinowitz, K Resnicow (Univ. of Michigan), B Simon-Ogan (Moveable Feast), J Tse (NICHHD), X Wang (NIAMS), and K Willson (NICHHD)