

# Common Fund Glycoscience Program: Human Milk Oligosaccharide Workshop

September 24, 2018  
Natcher Conference Center  
Room H  
8:25 a.m. to 3:00 p.m.  
Bethesda, MD

## Welcome & Introductions

**Dr. Pamela Marino**, Chief, Biochemistry and Biorelated Chemistry Branch, PPBC, NIGMS,  
National Institutes of Health

## Background and data needs for setting research priorities

**8:30 a.m.,**

**Dr. Chris Lynch**, Director, Office of Nutrition Research, NIDDK & Chief, Nutrition Research  
Branch, DDN, NIDDK, National Institutes of Health

**Dr. Kellie O. Casavale**, Senior Nutrition Advisor, Office of Nutrition and Food Labeling  
Center for Food Safety and Applied Nutrition, FDA

**Dr. Daniel J. Raiten**, Program Director, Nutrition Pediatric Growth and Nutrition Branch,  
NICHD, National Institutes of Health

## Synthesis & Analysis of HMO's

**9:00 a.m.,**

*Challenges in the Chemical Synthesis of Human Milk Oligosaccharides at Multiple Scales*

**Dr. Nicola Pohl**, Professor of Chemistry and Joan and Marvin Carmack Chair in Bioorganic  
Chemistry, Department of Chemistry, Indiana University

**9:30 a.m.,**

*Automated chemical synthesis of human milk oligosaccharides*

**Dr. Alexei V. Demchenko**, Curators' Distinguished Professor, Chair-Elect, American  
Chemical Society CARB Division, Department of Chemistry and Biochemistry,  
University of Missouri – St. Louis

**10:00 a.m.,**

Break

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**10:30 a.m.,**

*Chemoenzymatic Synthesis of Comprehensive Libraries of Human Milk Oligosaccharides”*

**Dr. Anthony Prudden** & Dr. Geert-Jan Boons, Complex Carbohydrate Research Center,  
University of Georgia, Athens, Ga

**11:00 a.m.,**

*Access to HMO chemical space through chemical and enzymatic synthesis*

**Dr. George Peng Wang**, Professor & GRA Eminent Scholar, Department of Chemistry, Georgia  
State University

**11:30 a.m.,**

*Human milk oligosaccharide structures and synthesis by one-pot multienzyme (OPME)  
strategies*

**Dr. Xi Chen**, Professor, Department of Chemistry, University of California-Davis

**12:00 p.m.,**

Working Lunch

**1:00 p.m.,**

*Decoding the Detailed Structure and Composition of Milk Oligosaccharides*

**Dr. Parastoo Azadi**, Technical Director, Complex Carbohydrate Research Center, University of  
Georgia

**1:30p.m.,**

*Functional Glycomics of Natural Glycans*

**Dr. David Smith**, Professor Department of Biochemistry, Emory University School of Medicine

**2:00p.m.,**

*Studies of the Molecular Recognition of HMOs*

**Dr. Mark Jones**, Staff Scientist, & Dr. Richard Cummings, Professor of Surgery, Harvard  
Medical School, Beth Israel Deaconess Medical Center

**2:30p.m.,**

**Speakers Round Table Discussion**

Leader, **Dr. Mark Lowenthal**, Chemist, Bioanalytical Science Group, NIST

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Discussion Questions:

Have we defined the chemical space for HMO's? Can we synthesize this space? Do we have appropriate standards for HMO's? Do we have appropriate assays to assess their bioactivity? Do we need additional screening tools?

**3:00p.m.**, Wrap up and adjourn