



COLUMBIA UNIVERSITY

*College of Physicians
and Surgeons*



the Naomi Berrie **DIABETES CENTER**
Columbia University Medical Center
the care until the cure

19th Annual Conference

***Frontiers in Diabetes Research:
Advances and Challenges in the
Neuroscience of Ingestive Behaviors***

Saturday, November 18, 2017



Course Directors

Domenico Accili, M.D., *Russell Berrie Foundation Professor of Medicine (in Diabetes); Director, Diabetes and Endocrinology Research Center; Head of Endocrine Division; Columbia University College of Physicians & Surgeons, New York, New York*

Robin S. Goland, M.D., *J. Merrill Eastman Professor of Diabetes (in Medicine, Pediatrics, and the Naomi Berrie Diabetes Center) at CUMC; Co-Director, Naomi Berrie Diabetes Center, Columbia University College of Physicians & Surgeons, New York, New York*

Rudolph L. Leibel, M.D., *Christopher J. Murphy Memorial Professor of Diabetes Research; Professor of Pediatrics and Medicine; Head, Division of Molecular Genetics; Co-Director, Naomi Berrie Diabetes Center, Columbia University College of Physicians & Surgeons, New York, New York*

Faculty

Wendy K. Chung, M.D., Ph.D., *Kennedy Family Professor of Pediatrics and Medicine, Columbia University College of Physicians & Surgeons, New York, New York*

Bradford B. Lowell, M.D., Ph.D., *Professor of Medicine; Division of Endocrinology, Diabetes, and Metabolism, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, Massachusetts*

C. Daniel Salzman, M.D., Ph.D., *Professor, Departments of Neuroscience and Psychiatry, Columbia University College of Physicians & Surgeons, New York, New York*

Nathaniel B. Sawtell, Ph.D., *Associate Professor of Neuroscience, Department of Neuroscience, Columbia University College of Physicians & Surgeons, New York, New York*

Scott Sternson, Ph.D., *Janelia Group Leader, Chemical Biology, Neuroscience, Howard Hughes Medical Institute, Janelia Farm Research Campus, Ashburn, Virginia*

Lorenz Studer, M.D., *Director, Center for Stem Cell Biology, Developmental Biology, Memorial Sloan Kettering Cancer Center, New York, New York*

Greg S.B. Suh, Ph.D., *Associate Professor, Skirball Institute of Biomolecular Medicine, Molecular Neurobiology, Department of Cell Biology, NYU School of Medicine, New York, New York*

Charles S. Zuker, Ph.D., *Investigator, Howard Hughes Medical Institute, Professor of Biochemistry and Molecular Biophysics and of Neuroscience, Columbia University College of Physicians & Surgeons, New York, New York*



Saturday, November 18, 2017

- 8:00 a.m. *Registration; Continental Breakfast*
- 8:45 a.m. Welcome and Introduction
Robin S. Goland, M.D. & Rudolph L. Leibel, M.D.
- 9:00 a.m. From Receptors to Behavior
Charles S. Zuker, Ph.D.
- 9:30 a.m. Feeding, Nutrient Sensing by the Brain in Flies and Mice
Greg S.B. Suh, Ph.D.
- 10:00 a.m. Panel Discussion
- 10:15 a.m. *Refreshment Break*
- 10:35 a.m. Locally Complete, Molecularly Defined Neuroscience of Need States Such as Hunger
Scott Sternson, Ph.D.
- 11:05 a.m. Neural Control of Hunger by Arcuate → Paraventricular Hypothalamic Circuits
Bradford B. Lowell, M.D., Ph.D.
- 11:35 a.m. Panel Discussion
- 12:00 p.m. *Lunch*
- 1:15 p.m. Genetic “Dark Matter” of Human Energy Homeostasis: Gene Finding and Gene Vetting
Wendy K. Chung, M.D., Ph.D.
- 1:45 p.m. Strategies for Using Stem Cells to Generate Region-specific Neural Constructs/Organoids and Circuits
Lorenz Studer, M.D.
- 2:15 p.m. Panel Discussion
- 2:30 p.m. *Refreshment Break*
- 2:50 p.m. A Role for the Cerebellum in Feeding Behavior
Nathaniel B. Sawtell, Ph.D.
- 3:20 p.m. The Role of the Amygdala in Modulating Feeding Behavior
C. Daniel Salzman, M.D., Ph.D.
- 3:50 p.m. Panel Discussion
- 4:05 p.m. General Discussion
Domenico Accili, M.D.
- 4:25 p.m. *Adjourn*

Program Description & Objectives

This one-day program at the Naomi Berrie Diabetes Center at Columbia University is designed for research scientists, clinicians and students with an interest in the latest insights with regard to the neurobiology of ingestive behaviors. These behaviors are clearly influenced by systemic and brain energy needs, but also by the hedonic qualities of available foods and by the environments in which food intake takes place. The neural circuits and genes that mediate these complex behaviors are just beginning to be understood. They play important roles in the pathogenesis of human obesity and eating disorders, and their elucidation is likely to lead to more effective interventions.

At the conclusion of this activity, participants will be better able to:

- Identify brain regions critical in the control of the amounts and types of food ingested.
- Recognize the molecular physiological relationships among these brain regions.
- Identify current and oncoming technical strategies for deeper understanding of these processes.
- Discuss how human molecular genetics relates to understanding of this neurobiology.

The Naomi Berrie Diabetes Center

The Naomi Berrie Diabetes Center, combining premier family-centered patient care and education for children and adults with world-class research, opened in October 1998. The Center offers coordinated, multidisciplinary clinical care for adults and children with diabetes. Educational, nutritional and psychosocial counseling help the patient and family to cope effectively with diabetes. Basic and clinical research programs at the Berrie Center focus on the biologic bases for diabetes and obesity. The Naomi Berrie Diabetes Center's commitment to patient care, research and education reflects its mission to improve the lives of people with diabetes and its dedication to finding a cure. For additional information, call the Center at (212) 851-5492 or visit our web site:

www.nbdiabetes.org

Additional Information

Contact: Center for Continuing Medical Education
Columbia University College of Physicians & Surgeons
630 West 168th Street, Unit 39
New York, NY 10032
Telephone: (212) 305-3334
Fax: (212) 305-5740
e-mail: cme@columbia.edu
<http://ColumbiaCME.org>

Meeting Location

Russ Berrie Medical Science Pavilion
Columbia University Medical Center
1150 St. Nicholas Avenue
1st Floor Conference Room
New York, New York 10032

Complimentary parking will be available in the Herbert Irving Comprehensive Cancer Center parking lot located at 1130 St. Nicholas Avenue (167th Street between Audubon Avenue and St. Nicholas Avenue).

Accreditation Statement

The College of Physicians and Surgeons of Columbia University is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

AMA Credit Designation Statement

The College of Physicians and Surgeons designates this live activity for a maximum of 5.5 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Tuition

Physicians & Research Scientists: \$150; Other Health Professionals: \$90; Residents & Fellows in training (with a letter from program director certifying status): \$50; Students (not affiliated with Columbia University): \$25; CUMC Faculty, Students & Staff (with valid I.D.): Free. The fee includes the academic presentations, continental breakfast, lunch, and refreshments. Confirmation of registration will be sent upon receipt of the registration form. Refund of registration fee, less a \$15 administrative charge, will be made if written notice of cancellation is received by November 8, 2017. No refunds can be made thereafter.

Registration

Space is Limited. Early Registration is Encouraged.

By Mail:

Complete the registration form and mail with full payment to:

**Columbia University
College of Physicians & Surgeons
Center for Continuing Medical Education
630 West 168th Street, Unit 39
New York, NY 10032**

On-Line:

<http://columbiacme.org>

**Telephone registrations and/or
cancellations are not accepted.**

Americans with Disabilities Act

The Columbia University College of Physicians and Surgeons fully complies with the legal requirements of the ADA and the rules and regulations thereof. Any participant with special needs must submit a written request to our office at least one month prior to the course date.

Registration Form

COLUMBIA UNIVERSITY

Diabetes
(Please print or type)

Last Name Degree

First Name Middle Initial

Address

City State Zip

Daytime Phone Daytime Fax

e-mail

Please note: Your e-mail address is used for critical information about the course including: registration confirmation, course evaluation and certificate. Please be sure to include an e-mail address you check daily or frequently.

Institution

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UR002370/5.5

- ☐ \$150 Physicians & Research Scientists
- ☐ \$90 Other Health Professionals
- ☐ \$50 Residents & Fellows in training
(with a letter from program director certifying status)
- ☐ \$25 Students
(not affiliated with Columbia University)
- ☐ Free CUMC Faculty, Students & Staff
(with valid I.D.)

☐ Enclosed is a check or money order made payable to
Columbia University
Checks must be in U.S. Dollars drawn on a U.S. bank.
Money Orders must be in U.S. Dollars.

For security purposes, credit card payments cannot be accepted by mail or fax. Please visit www.columbiacme.org to register and pay by credit card. American Express, Discover, MasterCard and Visa only.



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presented by the
Naomi Berrie Diabetes Center
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