

Clinical and Translational Science Awards (CTSA) Program

Michael G. Kurilla, MD, PhD

Director of the Division of Clinical Innovation, NCATS, NIH

National Academies of Sciences, Engineering, Medicine
April 26, 2023



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NCATS' MISSION

Turn research observations
into health solutions through
translational science



The Division of Clinical Innovation



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Director
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NCATS Division of Clinical Innovation

Innovating Clinical and Translational Science



Plans, conducts, and supports research to **develop new methods** that enhance clinical processes



Plans, conducts, and supports research to **evaluate existing approaches and technologies** in the clinical spectrum



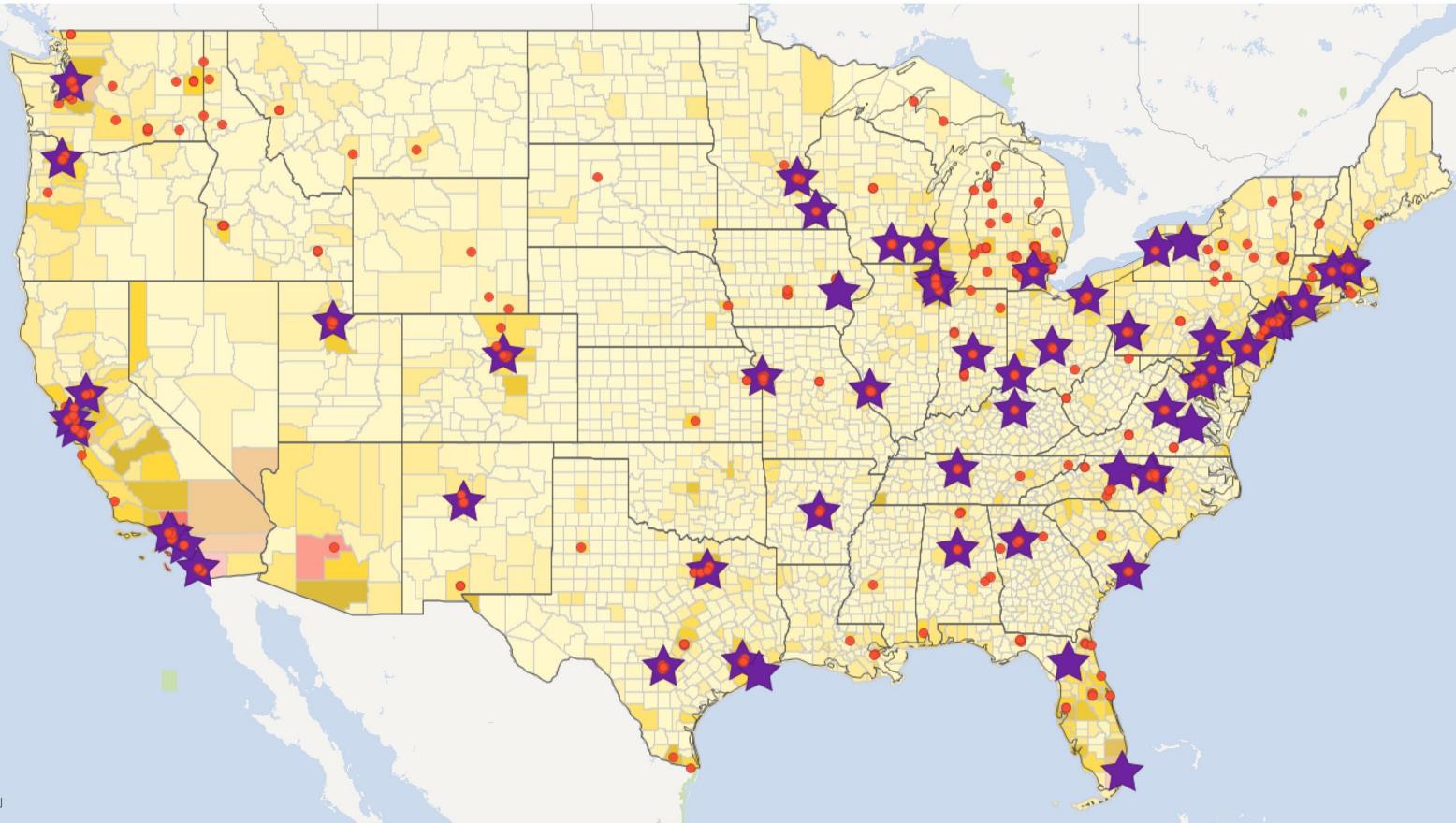
Allocates resources to clinical and translational infrastructure and investigators



Supports training programs relevant to clinical phases of translational science



NCATS Clinical and Translational Science Awards (CTSA) Program



- National network of medical research institutions (★) and their partners/collaborators (●)
- Works to speed translation of research discoveries into improved patient care



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CTSA Program Focus



Develop, demonstrate, and disseminate innovations that turn science into health faster



Promote impactful partnerships and collaborations



Address health disparities



Provide a national resource for the rapid response to urgent public health needs



Promote training and career support



Nurture emerging field of translational science

CTSA Mechanisms Mapped to Stages of Clinical and Translational Science (CTS)

Single Site

CTSA Hubs

Multi-Site

CTSA Collaborative Innovation Awards

Consortium

Consortium-Wide Centers: Resources for Rapid Demonstration & Dissemination

IDENTIFICATION
of processes &
innovations that feed
CTS

DEVELOPMENT
of new approaches,
technologies,
resources and models

DEMONSTRATION
of their utility

DISSEMINATION
of the data, analysis
and methodologies
to the community



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Nutrition Related Resources

- Cincinnati CTSA: **Bionutrition Core** provides services to support research-quality data collection in all areas of nutrition to trainees and faculty.
- Columbia CTSA: **Bionutrition Research Core (BRC)**
- Emory University Georgia CTSA: **Bionutrition Unit**
- Tufts CTSI: **Self-paced course** is designed to help nutrition and dietetics professionals review, evaluate, and interpret human nutrition research.



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TUFTS CTSI I LEARN NUTRITION-RELATED RESEARCH: BEST PRACTICES FOR EVALUATING AND INTERPRETING STUDIES



Year Published: 2022

Time to Complete: 45 minutes

Course Type: Self-paced Online

Instructors: Alice H. Lichtenstein, DSc, FAHA, Penny Kris-Etherton PhD, RDN, LDN, FAHA

Learning Level: Commission on Dietetics Registration Level II

Credits: 1.5 CPE

Primary Audience: Registered Dietitian Nutritionists; Registered Dietitians; Dietetic Technicians, Registered; Nutrition and Dietetic Technicians, Registered

Prerequisite: None

Skills Domain: [Scientific Concepts and Research Design](#)

Price: This Course is Free

https://ilearn.tuftsctsi.org/product?catalog=NUR2022_01_Online

Tufts Clinical and Translational Science Institute,
CTSA Program Grant UL1TR002544



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Pilot Grant Awardee Erica Kenney, ScD

Assistant professor at the Harvard T.H. Chan School of Public Health
Awardee of pilot grant (2018-2019) "Primary and Secondary
Prevention of Eating Disorders"

Pilot Project: Understanding how youth experience
weight stigma and the role of weight-focused intervention
programs in U.S. schools.

Current Research:

- Identifying strategies to modify children's environments to make the healthiest choice the easiest choice
- Evaluating recent changes to the Child and Adult Care Food Program meal patterns in family child care settings



"Most of my work focuses on nutrition promotion and a fair amount of it also focuses on childhood obesity prevention. One of the things that cuts across eating disorders and obesity is the issue of weight stigma."
– Erica Kenney, ScD

Source:
<https://catalyst.harvard.edu/news/article/five-questions-with-erica-kenney/>



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Ensure the development of a 21st century workforce capable of advancing clinical and translational science



Diversity and Re-Entry Supplements (hub grant)

Loan Repayment Program

NRSA Training Award Pre/Post/ST (TL1/T32/R25)

Institutional Career Development Award (KL2/K12)

Small Grants Program for K Scholars (R03)

<https://ncats.nih.gov/ctsa/funding>

CTSA Program

Institutional Career Development Program (KL2/K12)

Preparing scholars for careers in clinical and translational science research

- Offers early-career postdoctoral scholars and junior investigators advanced training in clinical and translational science research.
- Offers flexible learning models to engage scholars in team science, individual development plans, advanced research training, and career guidance.



63 Programs (FY22):
• 349 positions (postdoctoral scholars and junior faculty)



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CTSA Program

Institutional Training Program (TL1/T32)

Preparing trainees to advance diagnostics, therapeutics, clinical interventions and behavioral modifications that improve health

- **Clinical and Translational Science Research:**
 - Pre-clinical research, clinical research, clinical implementation, and public health research
 - Entrepreneurship, regulatory science, team science and community engagement
- **Multi-disciplinary:**
 - Engage multiple departments, schools and clinical research institutes to support a range of disciplines: medicine, dentistry, nursing, pharmacy, public health, epidemiology, biostatistics, bioinformatics, and bioengineering
- **Enhancement of the translational scientists' skill set:**
 - Optional experiential learning experiences (industry, community health settings, other hubs or research institutions, other)



Image modified from Gerd Altman, Pixabay

50 Programs (FY22):

- 509 positions: 174 postdoctoral fellows, 305 predoctoral fellows; 3/50 Programs with 30 short-term / summer trainee positions



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Supporting Diversity and Re-Entry

To address complex translational problems the translational science workforce must broadly representative across racial, ethnic, sex, gender, age, socioeconomic, geographic and disability status

Fact Sheet

Research Supplements to Promote Diversity and Re-entry in the Clinical and Translational Science Workforce

NCATS' [Clinical and Translational Science Awards \(CTSA\) Program](#) supports a national network of medical research institutions—called hubs—that work together to improve the translational research process to get more treatments to more patients more quickly. The hubs collaborate locally and regionally to catalyze innovation in training, research tools and processes. The CTSA Program [diversity and re-entry research supplements](#) opportunities promote diversity in health-related research and re-entry into biomedical and behavioral research careers. The goal of these supplements is to build the clinical and translational research workforce that is prepared to improve the quality, safety, efficiency and speed of clinical and translational science research nationally.

What Do Diversity and Re-entry Supplements Offer?

- **Diversity supplements** provide opportunity (salary, fringe benefits, travel and limited supplies) to improve the diversity of the research workforce by recruiting and supporting students, postdoctorates and eligible investigators from diverse backgrounds, including those from groups that have been shown to be underrepresented in health-related research.
- **Re-entry supplements** provide opportunity (salary, fringe benefits, travel and limited supplies) to support individuals with high potential to re-enter an active research career after an interruption for family responsibilities or other qualifying circumstances.

ncats.nih.gov/diversity_factsheet



Aisha Langford, Ph.D., M.P.H., New York University School of Medicine, CTSA diversity supplement awardee



Juan Vasquez, M.D., Yale School of Medicine, CTSA diversity supplement awardee

Awardee Profiles



Jennifer Cunningham Erves, Ph.D., M.P.H., M.A.Ed., M.S., CHES

Assistant Professor of Research, Department of Internal Medicine, Meharry Medical College
Working to Reduce Cancer Disparities and Fulfilling Childhood Dreams

[Profile](#)



Anandi Krishnan, Ph.D.

Instructor, Department of Pathology, Stanford University
Discovering Science Yet Driven by the Heart

[Profile](#)



Aisha Langford, Ph.D., M.P.H.

Assistant Professor, Department of Population Health, New York University School of Medicine
Celebrating Wins Both Big and Small!

[Profile](#)



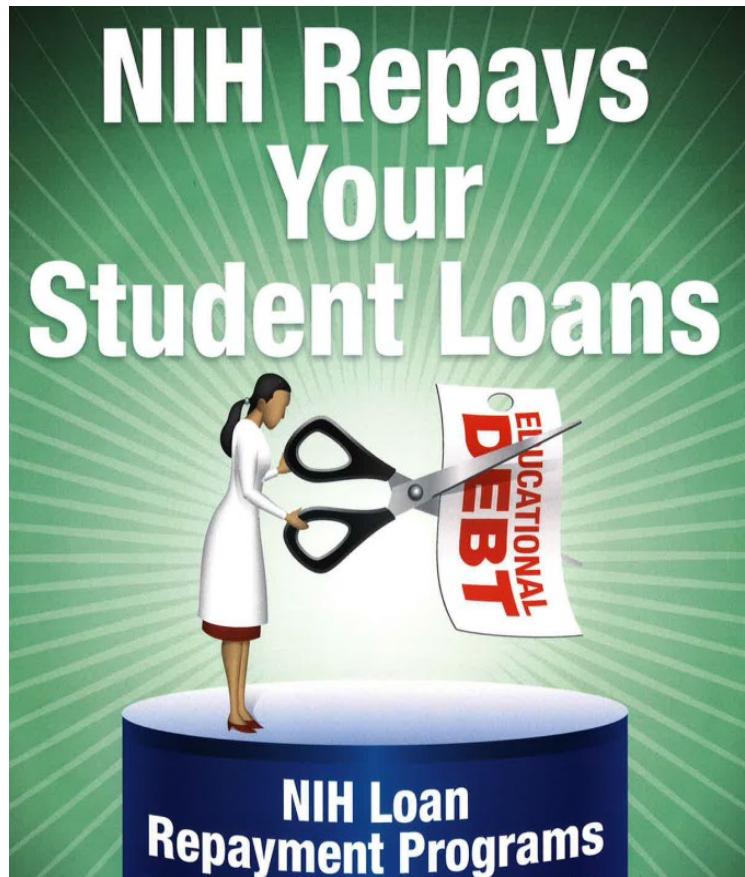
Juan Vasquez, M.D.

Assistant Professor, Department of Pediatrics (Hematology/Oncology), Yale School of Medicine
Harnessing the Immune System to Help Treat Cancer

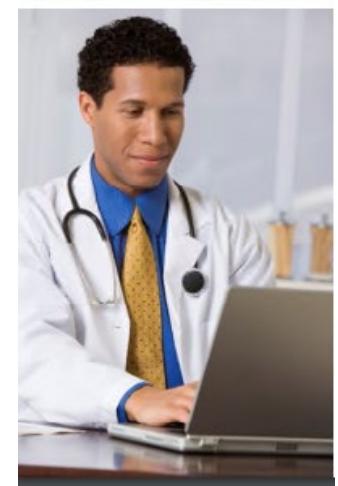
[Profile](#)



NIH Loan Repayment Programs



- NIH Loan Repayment Programs (LRPs) are a set of programs established by Congress and designed to recruit and retain highly qualified health professionals into biomedical or biobehavioral research careers.
- NCATS CTSA Program supports:
 - Clinical Research LRP
 - Pediatric Research LRP
 - Health Disparities Research LRP

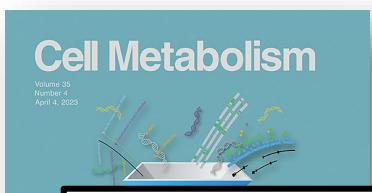


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KL2 Scholar Highlight

You are also WHEN you eat:

- Conducted controlled feeding studies of early time-restricted feeding
- Exploring the intersection of circadian rhythm and metabolism



Cell Metabolism
Volume 35
Number 4
April 4, 2023

Early Time-Restricted Feeding Improves Insulin Sensitivity, Blood Pressure, and Oxidative Stress Even without Weight Loss in Men with Prediabetes

<https://doi.org/10.1016/j.cmet.2018.04.010>

CellPress



“I think that within 10 years we will have some really clear guidelines for meal timing. But we are in the early stages of this research. There is a lot more work we need to do.”

– Courtney M. Peterson, PhD

University of Alabama at Birmingham
Center for Clinical and Translational Science at UAB
CTSA Grant KL2TR001419



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KL2 Scholar Highlight

Anna Kahkoska, MD, PhD

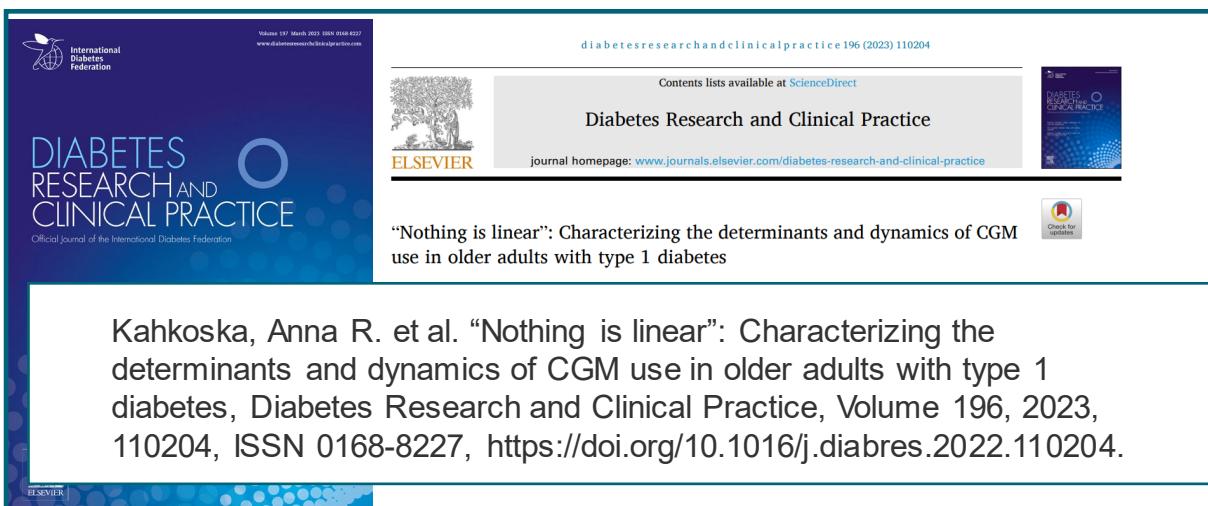
Named one of two winners of the American Diabetes Association's Pathway to Stop Diabetes grants

- Study is first of its kind to "map" the journey of continuous glucose monitoring in older adults.
- Small sensor inserted under the skin.
- Real-time glucose levels transmitted wirelessly.



"Our goal is to use this information as a framework for developing new interventions to better support older adults to incorporate technology as a part of their diabetes management ...and ideally, pre-empt the challenges they may encounter."

– **Anna Kahkoska, MD, PhD**



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journal homepage: www.journals.elsevier.com/diabetes-research-and-clinical-practice

Check for updates

"Nothing is linear": Characterizing the determinants and dynamics of CGM use in older adults with type 1 diabetes

Kahkoska, Anna R. et al. "Nothing is linear": Characterizing the determinants and dynamics of CGM use in older adults with type 1 diabetes, Diabetes Research and Clinical Practice, Volume 196, 2023, 110204, ISSN 0168-8227, <https://doi.org/10.1016/j.diabres.2022.110204>.

University of North Carolina Chapel Hill, North Carolina
Clinical and Translational Sciences (NC TraCS),
CTSA Program Grants KL2TR002490 and UL1TR002489



TL1 Trainee Highlight

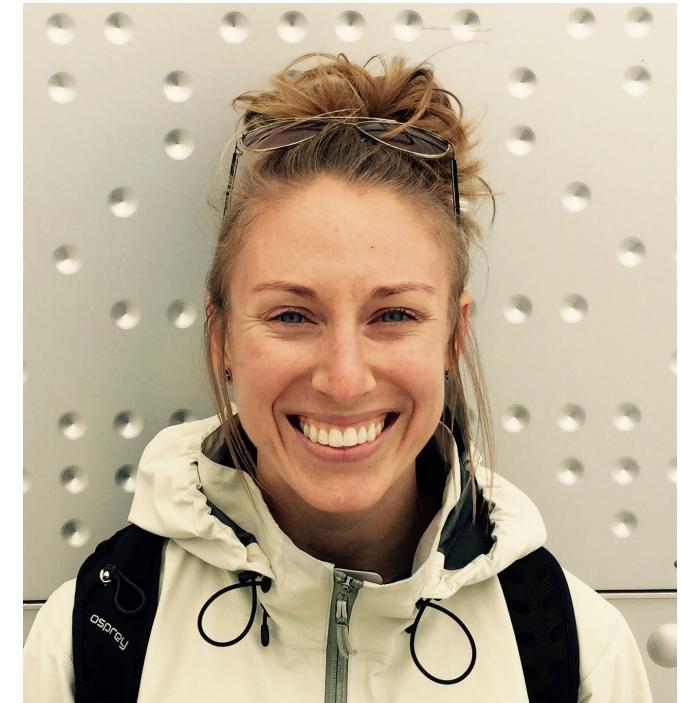
Sally G. Eagleton, PhD

PhD in Nutritional Sciences and Clinical and Translational Sciences, Penn State University

Improving Screening and Referrals for Federal Nutrition Program Participation using Electronic Health Records (EHR)

Expand an EHR-based Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) screening and referral in pediatric clinics to obstetrical clinics

- Understand barriers to WIC update in pregnancy, desire for care coordination between providers, and clinic workflow
- Modify the current EHR-based WIC screening
- Compare groups of pregnant patients enrolled in WIC during pregnancy vs. not enrolled for key pregnancy outcomes



Sally G. Eagleton PhD

Wake Forest University Health Sciences, CTSA
Program Grant TL1TR003136(2023-2024)



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TL1 Trainee Highlight

‘Waisting away’



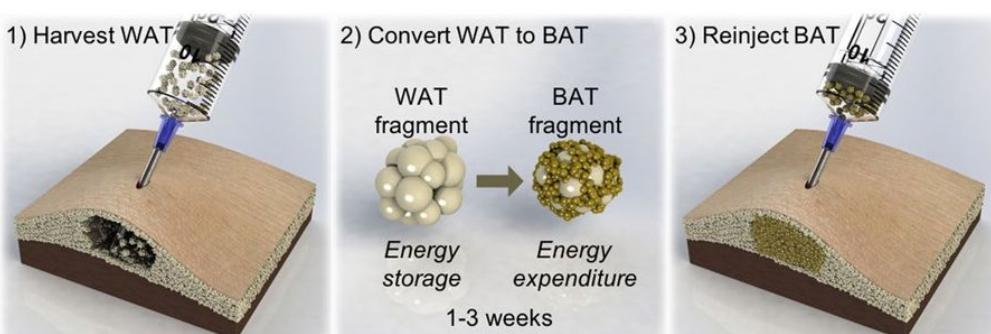
Article | OPEN | Published: 21 May 2018

A direct tissue-grafting approach to increasing endogenous brown fat

Nicole R. Blumenfeld, Hwan June Kang, Anna Fenzl, Ziwei Song, Janice J. Chung, Ranjodh Singh, Roshawn Johnson, Ayse Karakecili, Jun B. Feranil, Ninna S. Rossen, Vivian Zhang, Sahir Jaggi, Bret McCarty, Steven Bessler, Gary J. Schwartz, Robert Grant, Judith Korner, Florian W. Kiefer, Brian M. Gillette & Samuel K. Sia

Scientific Reports 8, Article number: 7957 (2018) | Download Citation

Envisioned exBAT procedure in clinical setting:



“...it might be possible one day to attempt our approach in humans as a potential therapy to help with weight loss, control of blood glucose levels, or to prevent weight gain...”
– Nicole Blumenfeld

Columbia Irving Institute for Clinical and Translational Research
CTSA Program Grant TL1TR00187501



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Where are they now?

Christina Valentine, MD, MS, RD, FAAP

Neonatologist and nutritionist at The University of Cincinnati and Cincinnati Children's Hospital

Medical Director, Medical Affairs (North America), Mead Johnson Nutrition

Former KL2 Scholar (2014)

- Physician-Scientist focused on maternal / infant diet strategies to improve health outcomes.
 - KL2 project: Dietary docosahexaenoic acid (DHA) for women with preeclampsia; Subsequently awarded R01 for DHA supplementation in pregnancy to reduce early preterm birth
 - [Research and publications](#) in neonatal nutrition and human milk composition.



Christina Valentine,
MD, MS, RD, FAAP

University of Cincinnati, CTSA Program Grant KL2TR00007805



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