

Nutrition Platform Updates 2024

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ILLINOIS TECH

Center for Nutrition Research

Nutrition Platform

- Provide a research platform to support scientific inquiry of food and nutrition related *issues* impacting public health

Objectives

- Work closely with FDA on nutrition priorities
- Work closely with industry to support /facilitate collaborative projects and discussion between stakeholders on key issues

Center for Nutrition Research

What We Do

- **Human Research:** Design, Conduct, Analyze, Communicate

Clinical trials

- Interventional: efficacy, safety, characterize human response variability to diets, specific foods, dietary components

Chemical, Biological and Behavioral Signatures

- Nutrient and phytochemical composition of foods
- Metabolic fate in vivo
- Host-Microbiome interactions
- Influence on biological/clinical and behavioral outcomes

Consumer Behavior

- Dietary patterns, attitudes and behaviors
- Key terms on Labels using survey and ingestive behavior designs.

2023-2024 Updates

Peer Review Publications

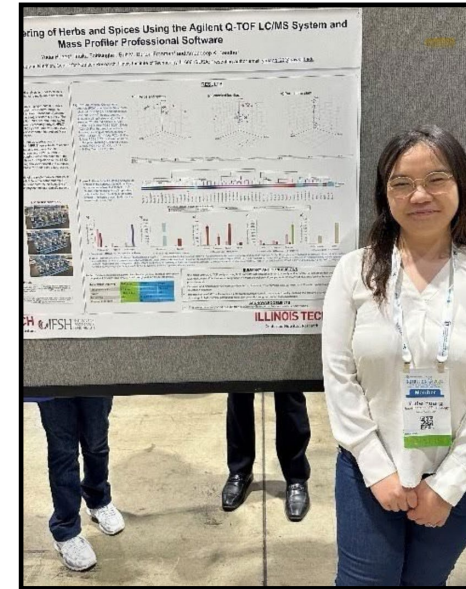
- 1: Smith M et al, Investigation of the tolerability and potential health benefits of a novel butyrate generating supplement in a pilot human study, Nutrition and Healthy Aging, 2024, Accepted
- 2: Smith M et al, An Improved Validated Method for the Determination of Short-Chain Fatty Acids in Human Fecal Samples by Gas Chromatography with Flame Ionization Detection (GC-FID). Metabolites. 2023 Oct 24;13(11):1106.
- 3: Sandhu AK et al, Phytochemical Composition and Health Benefits of Figs (Fresh and Dried): A Review of Literature from 2000 to 2022. Nutrients. 2023;15(11):2623.
- 4: Huang et al. Characterization and Pharmacokinetic Profile of Herbs and Spices' Phytochemicals over 24 h after Consumption in Overweight/Obese Adults. Mol Nutr Food Res. 2023 Jul;67(14)
5. Five Manuscripts are in preparation

Abstract Presentation in Conferences

Total 10 – Includes seven presentations at ASN 2024

Grants/Awards

Research Grants: ~ 5.5 millions
Two USDA awards
NIH – Nutrition for Precision Health
Hass Avocado
California Strawberry Commission
National Mango Board
National Watermelon Board
California Figs.
National Beef and Cattle Association
Sorridi Therapeutics Inc
E. & J. Gallo Winery



Yudai Huang received 3rd place in Emerging Leaders in Nutrition Science at the American Society of Nutrition 2024 Conference, Chicago, IL

New Metabolic Kitchen

Support meal for



Nutrition for Precision Health

Powered by the All of Us Research Program, part of the National Institutes of Health



Illinois Precision Nutrition Network (IPNN)



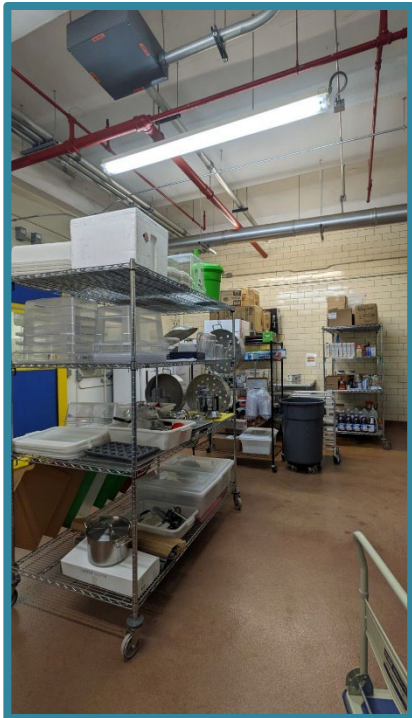
National Institutes of Health

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Northwestern University

THE UNIVERSITY OF CHICAGO



ILLINOIS TECH

FDA

IFSH INSTITUTE FOR FOOD SAFETY AND HEALTH

The Luminex xMAP INTELLIFLEX –An advanced multiplexing platform



An advanced multiplexing platform that delivers accurate and reliable protein measurement results.

Designed for a 96- or 384-well high throughput format, the xMAP INTELLIFLEX system can save substantial time and sample volume.

INTELLIFLEX allows the user to view multiple analyte statistics concurrently. Combined with added heat map visualizations, this provides rapid insights into run performance in real-time.



Nutrition for Precision Health

Powered by the All of Us Research Program,
part of the National Institutes of Health

Nutrition for Precision Health

Common Fund invests \$170 MM

- 10,000 adults who are enrolled in the *All of Us* Research Program will participate in Nutrition for Precision Health.



Analytic Centers



Research Infrastructure Centers



Study Locations

1. University of Alabama
2. University of California, Los Angeles
3. University of California, Davis
4. Cedars Sinai Medical Center
5. Northwestern University
6. Illinois Institute of Technology
7. University of Chicago
8. Louisiana State University Pennington Biomedical Research Center
9. Louisiana State University Health Sciences Center
10. Tufts University
11. Massachusetts General Hospital
12. University of North Carolina at Chapel Hill Chapel Hill North Clinic
13. University of North Carolina at Chapel Hill Nutrition Research Institute Clinic





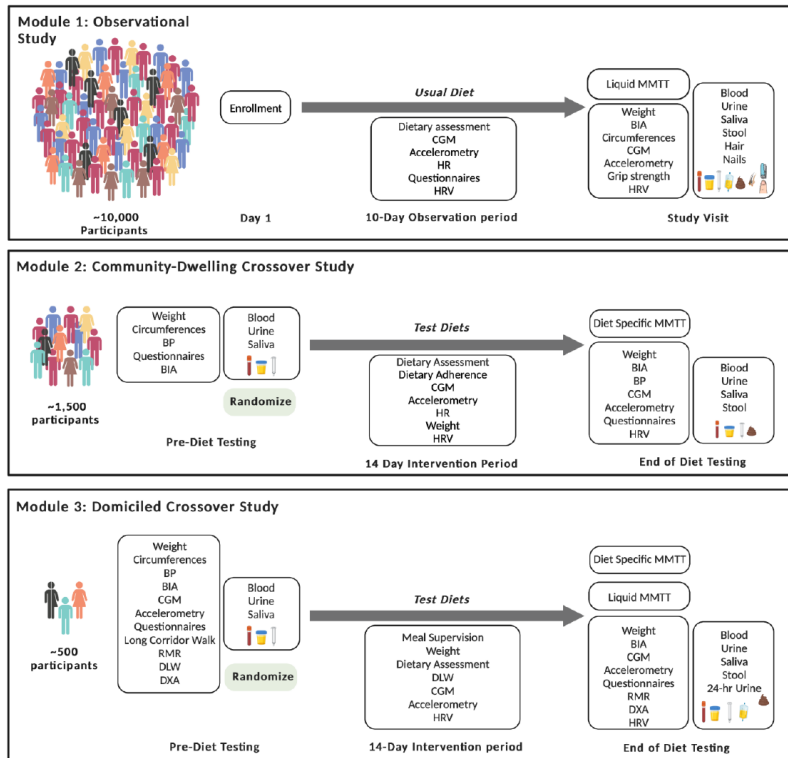
Nutrition for Precision Health

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Nutrition for Precision Health

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Nutrition is not one-size-fits-all.

Join the Nutrition for Precision Health study to help researchers learn how nutrition can be tailored to each person's **genes, culture, and environment** to improve health.

Nutrition, or the foods we eat, can help prevent and fight conditions like high blood pressure, diabetes, stroke, and cancer. But we all live in different environments and come from different cultures. Each of us is starting from a different place with our health. And everyone breaks down food differently. For these reasons, nutrition is not one-size-fits-all.

To qualify for this research study, participants should be

- 18 years of age or older
- Enrolled in the All of Us Research Program*

*If you are not already an All of Us participant, you can learn more at JoinAllOfUs.org
 Compensation of up to \$300 is offered for the completion of the study.



Scan QR code and complete online survey to see if you qualify!

For more information: freemanstudies@iit.edu | (312) 567-5300

Clinical Nutrition Research Center, Institute for Food Safety and Health, 3rd floor, IIT Tower, Chicago, IL, 60616

All of Us and Nutrition for Precision Health, powered by the All of Us Research Program, are service marks of the U.S. Department of Health and Human Services (HHS).

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IRB Approval # Pro00062970

Collaborative Projects with FDA

Relative absorption of fat-soluble vitamins (A and D) and minerals from select plant-based milks in human subjects

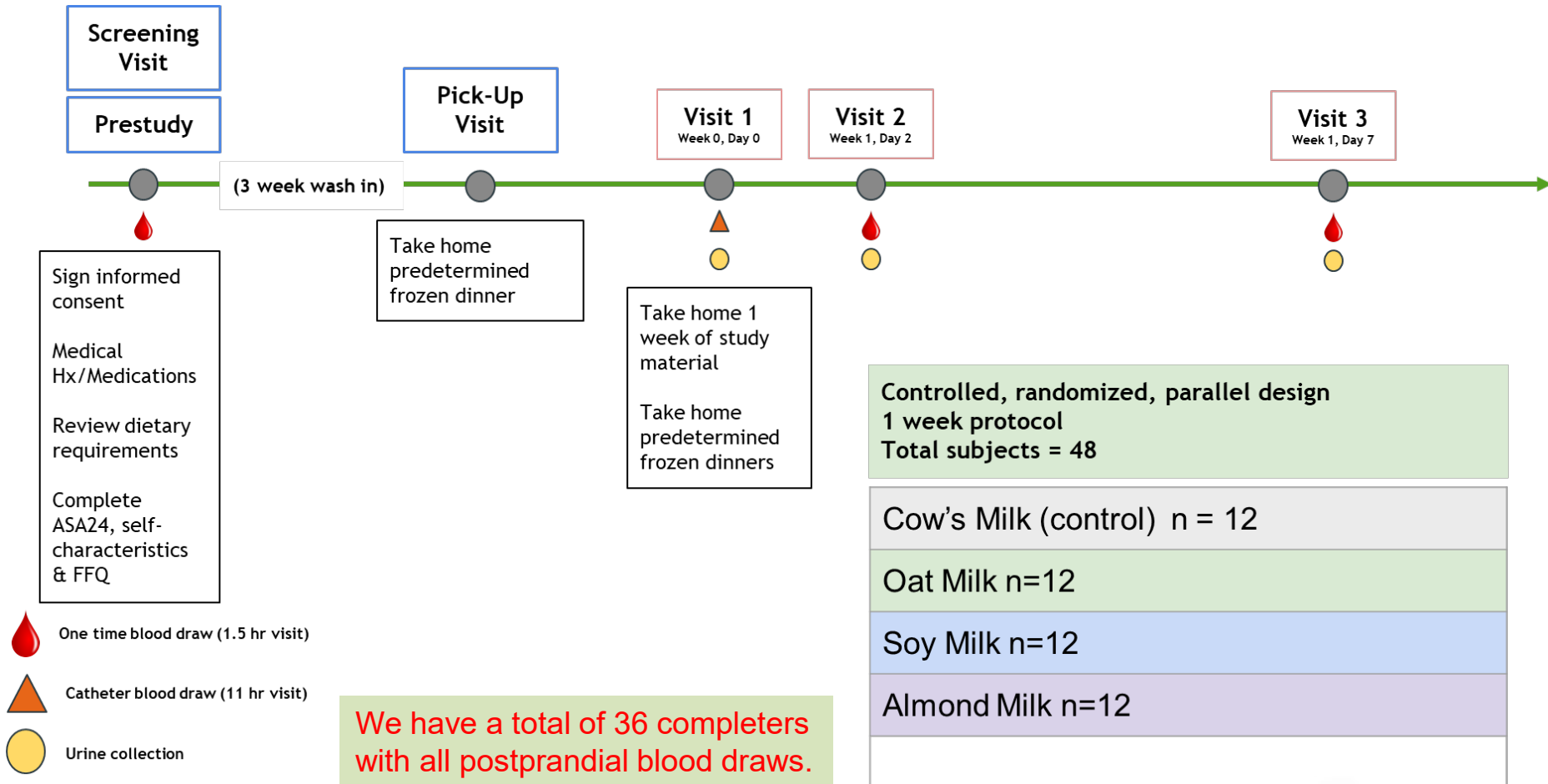
Plant based milk alternatives (PBMA) are becoming more popular with consumers.

Bovine milk products provide a key source of nutrients in the American diet. Many plant-based milks are also fortified with these nutrients, but it's unclear if they are as accessible to the body as those in cow's milk.

This study will test how well certain nutrients are taken up by the body after drinking milk or after drinking almond, soy, and oat milks.



Clinical Protocol



IRB Approval # IRB-2023-83

Clinicaltrials.gov # NCT05898217

Research Milestones and Updates

	Milestone	Timeline
1	Develop the Institutional Review Board (IRB) documents and other study-related documents.	<i>March 31, 2023; completed</i>
2	Subject recruitment to conduct research collecting samples for analyses	<i>Feb 28, 2024; completed with a modification</i>
3	Develop and validate LC-MS/MS method to determine concentrations of vitamin A and D in plasma/serum and urine.	<i>September 30, 2023, ongoing</i>
4	Develop and validate ICP-MS methods to determine concentrations of target minerals in human serum and urine	<i>January 31, 2024, ongoing</i>
5	Analyze collected plasma/serum and urine samples for select micro-nutrients using validated methods.	<i>September 30, 2024</i>
6	Data and statistical analysis to calculate relative bioavailability of select micro-nutrients after intake of PBMA	<i>March 31, 2025</i>
7	Complete draft report/manuscript for internal review at FDA and draft manuscript to a journal for publication	<i>September 30, 2025</i>

Thank You

Indika Edirisinghe, PhD



Our Team

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Undergraduate and Graduate Students

Research Participants

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Health care / Medic Staff