Nutrition Platform Overview

2019 IFSH Annual Meeting
September 24-25, 2018

Indika Edirisinghe, Ph.D.
Britt Burton-Freeman, PhD
Amandeep Sandhu, PhD
Overview

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

Platform objectives:

- Industry, academic and Government collaboration
- Excellence in science
- Self supported Program
Nutrition Research Program at IIT

Team

Faculty Scientists, PhD (3)
  B. Burton-Freeman
  I. Edirisinghe
  A. Sandhu
Ezhil Azari, PhD (New Hire -Chemistry/Nutrition) - (1)
Postdoctoral Fellow, PhD (Genomics) (Recruiting)
Bio-statistician (Consulting)
Clinical Sci / Coordinators (4)
Medical Staff (5)
Chemistry support scientist (1)
PhD students (2)
MS students (2 thesis)
MS students (Special Projects 5)
OPT (3)
IIT Undergraduates (3)
High school summer Interns (2)
Organization

U.S. FDA CFSAN

Institute for Food Safety and Health

School of Applied Technology

National Center for Food Safety & Technology

Center for Processing Innovation

Center for Nutrition Research

Center for Specialty Programs

Department of Food Science and Nutrition
Nutrition Research Program at IIT

Locations

Bio- & Analytical Chemistry Labs Moffett Campus

Clinical Nutrition Research Center IIT Campus
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<tr>
<th><strong>WHAT</strong></th>
<th><strong>WHERE</strong></th>
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<tbody>
<tr>
<td>Human Research</td>
<td>(Mies campus - Tower)</td>
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<tr>
<td>Biochemistry</td>
<td>(Mies and Moffett campus)</td>
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<tr>
<td>Analytical Chemistry</td>
<td>(Moffett campus)</td>
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<tr>
<td>Imaging Suite</td>
<td>(Mies campus - Tower)</td>
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<td>Cognitive function Suite</td>
<td>(Mies campus - Tower)</td>
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<td>Cell culture</td>
<td>(Moffett campus)</td>
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<tr>
<td>Metagenomics</td>
<td>(Moffett campus)</td>
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Nutrition Research Program at IIT

What we do

Human Research: Design, Conduct, Analyze, Publish

Clinical trials
- Intervention – Clinical Validation studies
- Bioavailability and Pharmacokinetic profiling

Consumer Behavior
- Dietary patterns, attitudes and behaviors. Key terms on Labels using ingestive behavior paradigms

Mechanism of Action
- Cell signaling: culture and real time harvesting from humans
- Gut Microbes: Food–Microbes- Metabolic Health

Chemical, Biological and Behavioral Signatures
- System characterization (structure – function)
Support research needs of FDA/CFSAN Office of Nutrition and Food Labeling (ONFL) to understand:

- Consumer perceptions and behaviors associated with key terms used in labeling:
  1. “Natural” – 2017-2018 - Completed the project/Manuscript submission
  2. “Milk” – dairy vs plant-based milk alternatives

We will be learning FDA’s Perspective on the Use of the Term “Natural” in Food Labeling – Patricia Hansen, Ph.D., Deputy Director – Office of Nutrition and Food Labeling, FDA CFSAN
What nutrient do you most associate with dairy milk?

What nutrient do you most associate with non-dairy milk?
“MILK” Study - Dairy vs plant-based milk alternatives

We are Recruiting Human Volunteers – IRB approved (IIT IRB # 2019_059)

We want your opinion!

- Participate in an activity involving your thoughts on dairy milk and plant-based milk alternatives
- Drink a strawberry banana smoothie
- $25 compensation for a 1.5-hour study day visit

Complete an online survey to see if you qualify:
https://www.surveymonkey.com/r/MILK_PRESCREEN

If you have any questions or want more information, contact us via:
(312) 567-5300
freemanstudies@iit.edu

Clinical Nutrition Research Center
Institute for Food Safety and Health
Our Story 2019 - Nutrition platform

EXCELLENCE IN SCIENCE

Industry, Academic and Government collaboration

TOTAL FUNDING 2019-2.9 MILLIONS.

- FDA Collaboration: 10%
- Industry Contracts (Non-FDA): 21%
- Research Grants (Non-FDA): 69%
- Other: 69%

Reseach Grants (Non-FDA)
- 69%
- 2 USDA Grants
- 1 From HASS Avocado
- 1 California Strawberry
- 2 National Raspberry

Industry Contracts (Non-FDA)
- 21%
- 2 National Raspberry

FDA Collaboration
- 10%

Other
- 69%
Pipeline Projects - Industry, Academic and Government collaboration

Industry Projects (In negotiation) : Total funding ~1 million

1. Bioavailability and Pharmacokinetic profiling
2. Sweetness intensity perception study in healthy adults

Two Pending decision (Submitted Grants) - ~600 K
   1. California Strawberry Commission
   2. National Mango Board

Review and Resubmission – American Pecan Council - 450 K

Collaboration with FDA : Total funding ~500 K (Proposal Submitted).

1. Non-Nutritive Artificial Sweeteners (NNAS) Research – OWH/ OCS grant
Differences in function and composition of the gut microbiome linked to food additive consumption between men and women
Our Story 2019 - Nutrition platform
PRODUCTIVITY- ACCOUNTABILITY

Posters and Presentation at International conferences

Nine Poster presentations

We have 6 posters Presenting at this meeting.

1. Amandeep Sandhu, Jiayi Fan, Eunyoung Park, Indika Edirisinghe, Britt Burton-Freeman. A pilot study in humans to investigate the relationship between circulating L-citrulline and arginine after watermelon intake (rind, flesh and seeds) on endothelial function

2. Eunyoung Park, Gabriela Guzman, Yujie Du, Anqi Zhao, Xuhuiqun Zhang, Di Xiao, Rebecca Replogle, Thomas W. Boileau, Britt M. Burton-Freeman. Indika Edirisinghe, Addition of Orange Pomace to 100% Orange Juice Attenuates Acute Glucose Response Compared to 100% Orange Juice but not whole Fruit in Healthy Adults

3. Di Xiao, Leailin Huang, Indika Edirisinghe, Britt Burton-Freeman. Effect of strawberry intake for 4 weeks on vascular endothelial function and blood pressure in adults with moderate hypercholesterolemia


5. Anqi Zhao, Xuhuiqun Zhang, Amandeep Sandhu, Indika Edirisinghe, Barbara Shukitt-Hale, Britt Burton-Freeman. 6. Polyphenol Consumption on Human Bile Acids Metabolism: Preliminary Data of Bile Acid Profiles in Human Biological Samples

6. Xuhuiqun Zhang, Anqi Zhao, Indika Edirisinghe, Amandeep Sandhu, Britt Burton-Freeman. Effect of red raspberry (Rubus idaeus L.) consumption with or without fructo-oligosaccharide on metabolic indices: a single-blinded randomized, crossover clinical trial
Excellence in science - Peer Review Publications

Published:


Submitted: 3 manuscript
Under preparation: 3 manuscript
Our Story 2019 - Nutrition platform

EXCELLENCE IN SCIENCE

Rock Star Students/Staff

Our Ambassadors
Our Story 2019 - Nutrition platform

Self supported Program “Sustainability”

Excellent:
Three Faculty + Post doc./PhD/MS students/Staff

Effective:
Industry/ Academic / Government - collaboration

Successful:
Competitive Grants Peer Review Publications

$$$$$$$
Recognition

Sustainable Nutrition Research Program at IIT