# Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Letter from the Director</td>
</tr>
<tr>
<td>4</td>
<td>IHA Overview</td>
</tr>
<tr>
<td>7</td>
<td>Organizational Update</td>
</tr>
<tr>
<td>14</td>
<td>IHA Facilities</td>
</tr>
<tr>
<td>15</td>
<td>Research Highlights</td>
</tr>
<tr>
<td>18</td>
<td>Research Initiatives</td>
</tr>
<tr>
<td>20</td>
<td>Events: IHA Led</td>
</tr>
<tr>
<td>25</td>
<td>Events: IHA Participation</td>
</tr>
</tbody>
</table>
Dear IHA Members, Colleagues and Supporters,

I want to thank all of you for your strong and sustained engagement with the Institute for Advancing Health Through Agriculture (IHA) in our inaugural year! We all share the same vision and passion for positioning agriculture, food and nutrition as the solution to the health care crisis in the United States.

Our innovative research is directly addressing the challenge of better aligning our agriculture and food environments with human health through Responsive Agriculture. We are developing new technologies and approaches to match dietary patterns to individuals to support their life-long health through Precision Nutrition. Through participatory Healthy Living research, we are working in partnership with our Texas communities, providing assistance for them to adopt positive health behaviors in the context of their established environment. I dare say no other university has developed such a comprehensive systems approach to improve the lives of so many through food and agriculture. Because of this, we have been able to recruit the best talent to Texas A&M in this space, including six National Academy of Science, Engineering and Medicine (NASEM) members.

IHA researchers are performing transformative research in developing novel food sources of vitamin B12 and protein, using new miniaturized spectroscopic methods to determine food composition, improving dietary assessment methodologies, and enabling the adoption of healthy eating practices for chronic disease reduction in our underserved communities. Our researchers are sought out to serve on advisory panels for prestigious institutions including the USDA and the United Nations Organizations. Events that the IHA have led this year have attracted and engaged agricultural producers and consumer organizations throughout the country, as well as the USDA Undersecretary and Chief Scientist Dr. Chavonda Jacobs-Young. We’re excited about our partnership with the Chicago Council on Global Affairs, launching an 18-month event to lead the national dialogue and implement the concept of Responsive Agriculture in support of human, environmental and economic health.

We have accomplished much together this year, and recognize we are just at the beginning of making food and agriculture the solution! We look forward to furthering our collaborations this coming year for the benefit of IHA, Texas A&M and the nation.

Patrick Stover, Ph.D.
Director
Institute for Advancing Health Through Agriculture
Mission and Focal Areas

IHA Mission

To improve human health for all by leading science-driven solutions in agriculture, nutrition and food systems in a way that supports economic prosperity, environmental sustainability and community well-being for current and future generations through innovative research-based guidance, policies, programs and practice.

The IHA achieves its mission through three synergistic focal areas:

- **Precision Nutrition**
  research that identifies how diet differentially affects individuals and population subgroups to reduce the risk of chronic disease and promote health equity.

- **Healthy Living**
  social and behavioral research that promotes health, reduces chronic disease and advances health equity through the development, evaluation and dissemination of community-engaged intervention programs.

- **Responsive Agriculture**
  research that promotes innovations in the agricultural system and food environment to optimize human health while ensuring the system is economically robust and environmentally sustainable.
Overview of the IHA

TAMUS Vice Chancellor for Research

- Internal Executive Committee
- Internal Scientific Advisory Committee
- External Advisory Board
- USDA-ARS Research Scientists

IHA Director

- Associate Director, Precision Nutrition
  - Precision Nutrition Team
- Associate Director, Healthy Living
  - Healthy Living Team
- Associate Director, Responsive Agriculture
  - Responsive Agriculture Team

Assistant Director, Operations

- Administrative Support
- Communications
- Event Coordinator
- Business Administration
- Grants Administration

Precision Nutrition

Healthy Living

Responsive Agriculture
Organizational Update

Leadership

Patrick Stover, Ph.D.
Director

Regan Bailey, Ph.D., M.P.H., R.D.N.
Associate Director for Precision Nutrition

Rebecca Seguin-Fowler, Ph.D., R.D.N., L.D., C.S.C.S.
Associate Director for Healthy Living

Elizabeth Parker, D.V.M.
Interim Associate Director for Responsive Agriculture, and Associate Director for International Programs and Strategic Initiatives

Arin Reeder
Assistant Director, Operations

Operations

Courtney Charanza
Administrator I

Ashley Woolard
Grant Administration

Kendall Bassett
Outreach Specialist

Sherri MacWillie
Special Events

Lindsay Hess
Senior Creative Specialist

Nadia Penrod
Science Writer

Megan Westerman
Program Coordinator

Jamie Garcia
Business Coordinator II

James Bender
MHACs Program Manager

Shannon Wiley
Business Administrator 1
Organizational Update

Programmatic Scientists/Managers Recruited in 2022

Dr. Catharine (Cathy) Ross joined the IHA as the scientific director of the Cohort of Mothers/Madres in Texas (COMMIT) study and professor in the Department of Nutrition in the College of Agriculture and Life Sciences in late 2022. Her addition is part of the Governor’s University Research Initiative, enacted in 2015 to help higher education public institutions in recruiting distinguished researchers from around the world to Texas. Dr. Ross is a member of the National Academy of Sciences and has twice served on the Food and Nutrition Board of the Health and Medicine Division, forming networks with leading academic centers across the country.

Erica Bender is the COMMIT clinical program director and holds a master's degree in nursing, and is a nurse practitioner. She joins the IHA from Cornell University where she facilitated and oversaw numerous Institutional Review Board-approved research studies on human participants. She also conducts and trains IHA staff and affiliates on clinical procedures. During her early career, she concentrated heavily on obstetrics. She has delivered over 1,000 babies and provided prenatal/postnatal care to thousands of women. In her later career, she focused on gynecology and primary care for women. She has worked in diverse environments such as private practice, indigent care, health departments and hospital systems, as well as academia.

Diane Mitchell joins the IHA from Pennsylvania State University as the director of the Individualized Dietary Exposure Assessment (IDEA) Center. She brings more than 30 years experience in Nutritional Science and Public Health and is a registered dietitian nutritionist. The IDEA Center research will be conducted on dietary intake methodology including studies examining the accuracy and underreporting of dietary intake, errors in estimation, food group methodology, comparison of food pattern analysis methods, and methods for calculating energy density and diet quality indices.
Organizational Update

Visiting Members

Visiting Members provide valuable input on a variety of matters, such as strategic areas of opportunity the Institute should or could pursue, significant issues of emerging or substantial concerns related to the entire food system and how the Institute can effectively communicate its philosophy, goals and technological accomplishments. Selected Members receive resources and support from the IHA while conducting research and participating in the IHA post-doc program. Members serve a renewable three-year term.
Organizational Update

Associate Members

TAMUS faculty and scientists were invited to apply to become Associate Members of the IHA. Associate Members typically devote at least 25% of their research effort in support of the mission and vision of IHA, receive resources and support from IHA and serve a renewable fixed term (typically three years). To date, Associate Members have received $6.5M in funding. Associate Member research areas can be viewed by clicking here.

[Images of faculty and scientists]
Organizational Update

Affiliate Members

Affiliate Members have a one-year appointment, with some being granted seed funding based on their research and its mutually beneficial qualities. Collaboration with one or more of our three focus areas was strongly encouraged. Over 60 people applied, and 33 were accepted for one-time funding.

Srinivasulu Ale
Giri Athrey
Gurjinder Baath
Muthukumar Bagavathiannan
Fuller Bazer
Salvatore Calabrese
Yuri Clements Daglia Calil
Oral Capps
Rodolfo Cardoso
John Cason
Jaehyun Cho
Luis Cisneros-Zevallos
Susie Dai
Jorge DaSilva
Paul DeLaune
Youjun Deng
Senarath Dharmasena
Xuejun Dong
Kim Dooley
Fugen Dou
Paul Feldman
Sandun Fernando
Kiran R. Gadhave
Delbert Gatlin
Erin Giles
Vishal Gohil
Nuria Gomez-Casanovas
Andy Herring
Chris Hollenbeck
Amir Ibrahim
Tazim Jamal
Jaehak Jeong
Russell Jessup
Vijay Joshi
Eunsung Kan
Mikhailo Kolomiets
Holli Leggette
Pingwei Li
Shuyu Liu
Zong Liu
Kranthi Mandadi
Grace Melo
Jake Mowrer
Genhua Niu
Wesley Osburn
Devendra Pandey
Vlad Panin
Jean-Philippe Pellois
George Perry
James Petrick
Ky Pohler
Michael Polymenis
Nithya Rajan
Juliana Rangel
Keerti Rathore
Waltram Ravelombola
Steven E. Riechma
Jackie Rudd
Stanley Samonte
Michael Satterfield
Endang Septiningsih
Stephen Smith
Gerald Smith
Shyamal Talukder
Lee Tarpley
Luis Tedeschi
Michael Thomson
Gary Voelker
Rosemary Walzem
Aruna Weerasooriya
Tryon Wickersham
Ximing Wu
Guoyao Wu
Chaodong Wu
Jenny Wu
Linglin Xie
Wenwei Xu
Qingwu Xue
Qingyi Yu
Azlan Zahid
Lanying Zeng
Yvette Yu Zhang
Ke Zhang
Xiuren Zhang
Shuyang Zhen

If you are interested in becoming an Affiliate Member, please click here for more information.
The External Advisory Board, EAB, consists of members who serve in an executive capacity in the private sector, government, or academia. The EAB advises the IHA on strategic areas of opportunity to better serve the stakeholders, the people of Texas, the nation and the world.

John Chambers  
Bayer Corporation

Amy McCormick  
The Kroger Co.

Amy Myrdal Miller  
Farmer’s Daughter Consulting, Inc.

Eduardo Sanchez  
American Heart Association

Antonio Tatarrani  
PepsiCo

Bernhard Van Lengerich  
Seeding The Future Foundation

Ross Wilson  
Texas Cattle Feeders Association (retired)
IHA Facilities

Borlaug Center

Renovations on the Norman E. Borlaug Center building on the Texas A&M campus in College Station are scheduled to be completed in Summer 2024. This will be the IHA’s home.

A Footprint in Fort Worth

Texas A&M University is expanding its footprint in downtown Fort Worth, Texas, starting with three buildings over the next six to seven years. Dubbed "Aggieland North," the IHA will hold real estate once these buildings are complete, allowing us to reach farther and wider across Texas.
Research Highlights

Precision Nutrition

- Funded nearly $500,000 in Associate Member research
- Hired key programmatic leadership
- Presented in the 3rd International Conference on Precision Nutrition and Metabolism in Public Health and Medicine in Crete, Greece

Healthy Living

- $6 million awarded
- 14 funded community-engaged projects currently underway
- 15 national and international scientific presentations and 20+ peer-reviewed manuscripts published in high-impact journals

Responsive Agriculture

- Defined Responsive Agriculture
- Agriculture Nutrition Workshop
- In partnership with the Chicago Council on Global Affairs, convened important stakeholders on the food-ag value chain to start a priority setting process for Responsive Agriculture
Research Highlights

Grants Awarded

In 2022, the IHA leadership team secured $18.5M in grants to support the following projects:

- Responsive Agriculture and Food Systems to Promote Health and Quality of Life across the Life Span (USDA-ARS)
- Aligning Production Agricultural Systems to Enhance Diet and Health Outcomes (USDA-ARS)
- A Systematic Research Approach to Responsive Agriculture for the Advancement of Health (USDA-ARS)
- Integrating Community Nutrition with Improved Pregnancy Outcomes (USDA-ARS)
- Homeostatic Regulation of Folate Metabolism (NIH and Digestive and Kidney Disorders)
- Maximizing the Impact of Nutrition Education to Meet the Dietary Quality and Food Security Needs of Children and Parents (Purdue University)
- Rural Libraries Promoting Walking and Walkability in Their Rural Communities (Oregon Health and Science University)

Additional Awards

- $10M to Cohort of Mothers/Madres in Texas (COMMIT), Dr. Catharine Ross (Texas A&M University Chancellor's Research Initiative, Governor's University Research Initiative)
- $10M to Precision Nutrition, Dr. Regan Bailey (Texas A&M University Chancellor's Research Initiative, Governor's University Research Initiative)
Research Highlights

Publications

Selected Publications


Projects Currently Underway

Food Safety
- USDA-ARS plans to expand its embedded program with the IHA to include a food-safety component.
  - Both nutrition and food safety utilize risk-assessment frameworks in normative standard setting; both rely on newer data science technologies.
  - Expanded funding will allow the ARS program to achieve center designation.

COMMIT
- Cohort of Mothers/Madres in Texas (COMMIT)
  - Improve maternal-child health across diverse population groups in Texas.
  - Revolutionize our understanding of the role maternal diet has on programming the fetal genome.
  - Aid in the reduction of chronic disease from the very outset of life.

IDEA Center
- Individualized Dietary Exposure Assessment (IDEA) Center
  - Create a core set of shared facilities and multi-disciplinary research teams in the Precision Nutrition and translational research space to transform dietary recommendations.
Research Initiatives

Projects Currently Underway

Mobile Health Assessment Centers

*Reaching Across Texas - Coming Soon!*

![Mobile Health Assessment Centers](image)

**Capabilities**

- Clinical assessment space
- Exam rooms
- Phlebotomy stations
- Lab counters
- Indoor and outdoor kitchens
- Live-stream and recording
- Fully autonomous
- Large and small (urban) units
On August 1-2, 2022 the IHA held its first workshop in Dallas to engage selected key stakeholders from the food-ag value chain. The workshop enabled production agriculture groups to future expand research priorities, gaps and opportunities in Precision Nutrition, Responsive Agriculture and Healthy Living social and behavioral research.

At the workshop, groups representing row food crops, nuts, tree nuts, fruits and vegetables, livestock and dairy highlighted several key priority areas, many of which surrounded cardiometabolic health, gut health, antioxidants, anti-inflammatory substances and other key health attributes of foods.

This workshop marks the first in a series of stakeholder workshops that seek to generate awareness, gather input and ultimately inform research and innovation throughout the food-agriculture value chain as the IHA further develops and implements its research programs.
The IHA hosted a celebration of agriculture as the solution to diet-related chronic disease in a way that supports economic prosperity, environmental sustainability and community well-being for current and future generations.

The event had over 150 guests in attendance, with guest speakers Dr. Chavonda Jacobs-Young, Chancellor John Sharp, Dr. Howarth Bouis, Dr. Patrick Stover, Dr. Yuxiang Sun, Dr. Regan Bailey, Dr. Marco Palma, Dr. Beth Racine, Dr. Bill Rooney and Dr. Sunil Dhoubhadel.

“The health of every Texan has the potential to be improved by our work. It will require that we all collaborate, look for opportunities to engage with fellow land-grant universities and work together.”

John Sharp
Chancellor
Texas A&M University System
The IHA partnered with the Chicago Council on Global Affairs to host the Conference on Agriculture for Health: Priority Setting to Solve the Ultimate Grand Challenge on November 3, 2022, in Chicago. At the event, the IHA laid out a path toward strengthening agriculture’s integral role in reducing chronic disease. Attendees included experts from higher education, agriculture, government and the private and nonprofit sectors.

Presenters included Patrick Stover, Ph.D., director of the IHA, and Chavonda Jacobs-Young, U.S. Department of Agriculture undersecretary and chief scientist. Other speakers included Peggy Yih, managing director of the Center on Global Food and Agriculture at the Chicago Council on Global Affairs; Catherine Bertini, the 2003 World Food Prize Laureate; Ellen Shanley, president, Academy of Nutrition and Dietetics; Daniel Gustafson, Ph.D., special representative of the director-general of the Food and Agriculture Organization of the United Nations; and Prabhu Pingali, Ph.D., founding director of the Tata-Cornell Institute for Agriculture and Nutrition.

A conference panel discussion focused on identifying research priorities to solve the ultimate grand challenge of how to make agriculture and food systems better align to support outcomes around human health, environmental health and economic vitality.

Working groups of agriculture and food system leaders organized to inform and initiate a process that will set priorities and identify barriers for better aligning sustainable agri-food systems and human health. The IHA over the next year will convene committees that will publish and present their findings at a national symposium.
Events: IHA Led

Ag for Health Conference | November 3, 2022 (continued)

TIMELINE FOR AG FOR HEALTH: SOLVING THE ULTIMATE GRAND CHALLENGE

Nov 2022
Dr. Patrick Stover delivers keynote introducing The Ultimate Grand Challenge at Chicago Council event to a national audience

Dec 2022
IHA plans committees to guide academic work

Q1 2023
IHA launches Task Force for Laying Out a Roadmap for Responsive Agriculture and committees to develop a series of papers that prioritize areas of focus to solve this problem

Q2 2023 - Q3 2024
Development of manuscripts; scientific steering committee plans presentation of findings

Q4 2024 - Q1 2025
Papers presented at a symposium or national conference from the basis of the agenda to solve The Ultimate Grand Challenge

2025 - 2026
Workshops continue to advance thinking alongside IHA research

2026 - 2027
2nd biannual symposium or presentation at a national conference revisits the status of the science
Several IHA members organized and participated in the 3rd International Conference on Precision Nutrition and Metabolism in Public Health in Medicine held in Crete, Greece on October 15-20, 2022. This 4-day meeting brings together experts in nutrition, metabolomics, systems biology and computer science who otherwise would not interact to advance the fundamental understanding of biological networks, their dynamics, changes with age and interactions with nutrients. This meeting also encourages future research to identify next generation biomarkers for assessment of nutrient needs in health and disease.

IHA participation included:

- IHA Director Patrick Stover, Ph.D. serving as the chair of the "Gene-nutrient interactions and precision nutrition outcomes" section and presented "SHMT1 and the etiology of folate-responsive neural tube defects" with colleagues Kendra Tiana and Martha Field.

- IHA Associate Director Regan Bailey, Ph.D., M.P.H., R.D.N. leading a session titled, "What Does Precision Nutrition Mean for Public Health Nutrition?"

- Agriculture, Food and Nutrition Evidence Center Director Amanda MacFarlane, Ph.D. presenting "Folate intake-response in mice suggests that commonly used diet formulations do not reflect human folate exposure: Implications for translation."

- Associate Member Dmitry Kurouski, Ph.D. sharing his presentation "Raman spectroscopy enables phenotyping and assessment of nutrition values of plants."
President Biden reignited the Cancer Moonshot in 2022 and set a new national goal stating: if we work together, we can cut the death rate from cancer by at least 50% over the next 25 years, and improve the experience of people and their families living with and surviving cancer.

In one of its first efforts, the White House held the USDA’s Cancer Moonshot Day of Action event on August 10, 2022 featuring the latest science and resources on food and nutrition, and healthy eating habits to help reduce the risk of cancer and chronic disease. Two IHA members were invited to participate in this virtual roundtable event which consisted of two webinars.

IHA Director Patrick Stover, Ph.D. was invited to present at the first webinar session which was focused on showcasing the latest agriculture and nutrition science for preventing cancer and leading a healthy life free from chronic disease. Texas A&M Assistant Professor and IHA Associate Member Alexandra (Lexi) MacMillan Uribe, Ph.D. spoke in the second webinar session on how increasing adoption of healthy eating practices for cancer prevention in low-income communities.
Agriculture is the Solution

iha.tamu.edu