

A photograph of young corn plants in a field, with the sun low on the horizon creating a warm, golden glow. The plants are in the foreground, with their leaves reaching upwards. The background is a soft-focus landscape of rolling hills.

TEXAS A&M  
**AGRI**LIFE

INSTITUTE FOR ADVANCING  
HEALTH THROUGH AGRICULTURE

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# 2023 REPORT

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# AGRICULTURE IS THE SOLUTION

Dear IHA members, colleagues and supporters,

On behalf of the entire team at the Texas A&M Institute for Advancing Health Through Agriculture (IHA), I thank you for your continued support of the IHA as we completed our second year of operation. We have seen continued growth and new opportunities in the past year.

Earlier this year, Dr. Patrick Stover stepped down as the IHA's inaugural director. It is my honor to serve this organization on an interim basis as IHA director and more permanently as director of Texas A&M AgriLife Research. I thank Dr. Stover for his visionary leadership in launching the IHA and many of the programs in our portfolio. We have initiated a search for a new IHA director and hope to have someone on board to continue the institute's mission and vision.

I commend the efforts of our associate directors, Drs. Regan Bailey and Rebecca Seguin-Fowler, who have provided excellent leadership through the transition as we continue to move IHA's mission of bringing together Precision Nutrition, Responsive Agriculture and Healthy Living to reduce diet-related chronic diseases. This past year (2023) was exceptional for introducing new ideas and initiating innovative research.

Congratulations to Rebecca Seguin-Fowler, elected into the National Academies of Science, Engineering, and Medicine, an elite honor for the nation's top scientific minds. We kicked off the Responsive Agriculture task force in ongoing endeavors to improve human health through food and agriculture, and the broader IHA team continued securing new publications in high-impact journals. These are a few accomplishments from a rewarding and busy year.

With gratitude for the strides the IHA has made in establishing itself as a dynamic, leading entity in the relationship between agriculture and nutrition, I invite you to join me in embracing its bright future. The IHA and its programs remain a top priority for Texas A&M AgriLife Research. The collective strength of our entire organization will help us effectively bridge the gap between agriculture and nutrition to reduce diet-related chronic diseases.



Dr. G. Cliff Lamb  
*Interim Director, Texas A&M Institute for  
Advancing Health Through Agriculture*





# ABOUT THE IHA



## IHA Mission

The Texas A&M Institute for Advancing Health Through Agriculture exists 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 focus areas:*

### **Precision Nutrition**

Research that identifies how dietary exposures differentially impact individuals and population subgroups in order to provide more specific nutrition guidance to promote health and reduce risk of diet-related chronic diseases.

### **Healthy Living**

Social and behavioral research that promotes health, reduces chronic disease and advances health equity through developing, evaluating and disseminating 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.

# PRECISION NUTRITION



## Precision Nutrition

Precision Nutrition research identifies how dietary exposures differentially impact individuals and population subgroups in order to provide more specific nutrition guidance to promote health and reduce risk of diet-related chronic diseases.



*“Poor nutrition and diet quality are directly related to lifelong health. Just like medicine, people react differently to foods – understanding this is called Precision Nutrition. We use research to understand how to tailor dietary recommendations to optimize human health. The future of making food the solution to health requires new innovations and discoveries in Precision Nutrition.”*

—Dr. Regan Bailey, associate director of Precision Nutrition

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- Dr. Bailey participated in a President's Council of Advisors on Science and Technology Meeting at the White House and was asked to be a Fellow of the Royal Society of Medicine.
  - She served on the Committee for the National Academies of Science, Engineering, and Medicine 2023 Dietary Reference Intakes for Energy, and is a consultant to H-E-B on wellness initiatives, Mathematica on the USDA Thrifty Food Plans and Nestle on infant feeding best practices.
  - She is a co-investigator on a Bill and Melinda Gates Foundation grant to improve maternal and child health in developing nations. She is also a co-investigator on a USDA National Institute of Food and Agriculture (NIFA) grant to better understand nutrition education to improve diet quality among individuals living with food insecurity and low resources.
  - Project partners included the USDA-ARS Food Surveys Research Group, NIH Office of Dietary Supplements, USDA-ARS Grand Forks Human Nutrition Research Center, Wake Forest School of Medicine and many more.
  - 12 new publications in high-impact journals and 11 national and international presentations across the Precision Nutrition team.



# HEALTHY LIVING



## Healthy Living

Healthy Living research engages people in the communities in which they live, work and play to help develop and test health promotion programs that are relevant, acceptable and tailored to their personal, cultural, community and environmental context. Projects within Healthy Living aim to use participatory approaches that address health disparities with sustainability and scalability in mind, focusing on people in both urban and rural settings, from young children and their families to adolescents and older adults.



*This year, the IHA continued its community-centric work to improve the behavioral health and overall lifestyle and wellness of underserved communities, bringing in key funding and securing high-impact publications. The work we're doing here starts in Texas but has far-reaching implications for the rest of the country and the entire world."*

—Dr. Rebecca Seguin-Fowler, associate director for Healthy Living

- Dr. Rebecca A. Seguin-Fowler was elected to the National Academy of Medicine, which is considered one of the highest honors in health and medicine.
- Dr. Rebecca A. Seguin-Fowler received the American Public Health Association's Excellence Award, which honors excellence and innovation in public health leadership.
- She received the Tufts University Friedman School of Nutrition Alumni Award.
- Her Healthy Living team authored 24 new publications in high-impact journals, gave 22 national and international presentations and received funding from USDA, NIH and the American Heart Association to support their work.

# RESPONSIVE AGRICULTURE



## Responsive Agriculture

Responsive Agriculture research promotes innovations in the agricultural system and food environment to optimize human health while ensuring the system is economically robust and environmentally sustainable for producers.



“The IHA is leading a full system approach to achieving Responsive Agriculture supporting its ultimate goal of optimizing human health. The previous year was a landmark time of focused development alongside strategic partners from across the agriculture industry, with three key strategies: reduce diet-related chronic diseases for healthier people and lower health care costs, achieve nutrition security in the food environment to eliminate diet-related health inequities and transform agricultural ecosystems and the ag-food value chain for economic viability and environmental sustainability.”

—Dr. G. Cliff Lamb, interim director of the IHA

- An internal search has been initiated for an interim director of the Responsive Agriculture hub. We hope to have an individual identified in the summer of 2025.
- The interim director will re-evaluate previous efforts in Responsive Agriculture such as the Responsive Agriculture study.





# 2023 PROJECT SPOTLIGHT

## HIGH-IMPACT RESEARCH DRIVING THE GLOBAL CONVERSATION

### Maternal/Child Health Project

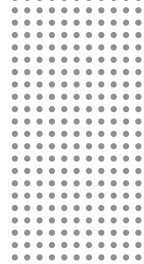
- Continued development of a statewide longitudinal prospective cohort study focusing on the connection between diet and maternal/child health outcomes.
  - > Partnership formed with the Research Triangle Institute for the formative planning phase of the study.
  - > Planning a new clinical research facility in downtown Fort Worth, as part of the Aggieland North expansion, that will be used to support this study as well as similar research.
  - > Took ownership of two new additional Mobile Health Assessment Centers (MHACs) that will support this research effort by providing clinical assessment space, exam rooms, phlebotomy stations, lab counters, indoor and outdoor kitchens and livestream recording.

### Diet Exposure Assessment Project

- The Individualized Diet Exposure Assessment (IDEA) Center will take an innovative approach to advance the science of precision nutrition through major research focus areas:
  - > Diet Assessment: Measuring factors that connect diet and health, including what, when and how much we eat, leveraging technology with targeted novel tools.
  - > Biomarkers: Looking at a person's chemical and biological makeup to establish links between what we eat and health. Wearable devices have transformed the way people think about their exercise habits, and we need similar devices for nutrition and health. Omics technology helps us to better understand variability in the response to diets.
  - > Data Science: Tapping into artificial intelligence and machine learning to gather information on individual health behaviors and then taking what we learn to help people change food habits to reduce their risk for chronic disease.

### Healthy Living Partners and Projects

- The Healthy Living team hosted the Society of Behavioral Medicine Meetup on October 13, 2023, at the Texas A&M AgriLife Center at Dallas.
- 14 active Healthy Living Projects in community-based settings.
  - > 64 urban and rural counties engaged.
  - > More than 4,000 active study participants.
  - > More than 50 partnerships established including AgriLife Extension, academic, faith-based, clinical and civic/community organizations.



# 2023 HIGHLIGHTS

Innovation, Accomplishments and Elite Partnerships

## Associate Director Rebecca Seguin-Fowler Elected to Elite National Academy of Medicine

Dr. Rebecca Seguin-Fowler's work in community-engaged health and nutrition research earned an invitation for membership in congressionally chartered scientific academy.

*"Dr. Seguin-Fowler's research exemplifies the kind of public service research the A&M System is proud to support. She is now the 57th national academy scholar working at Texas A&M University, the No. 1 public university in Texas, according to The Wall Street Journal."*

—John Sharp, Chancellor of The Texas A&M University System

Texas A&M's Co-Director Of Institute For Advancing Health Through Agriculture Elected To National Academy Of Medicine

Editorial Team | October 9, 2023

Updated on October 9, 2023

PATIENT CARE

Rebecca A. Seguin-Fowler, Ph.D., is a field of nutrition, the Institute for Advancing Health



**HEALTHCARE**  
**BUSINESS TODAY**

## IHA Led NASEM Artificial Intelligence/Machine Learning Workshop Through Sponsorship

IHA, in coordination with the National Academy of Medicine, hosted an expert convening to review the current state of knowledge and practice relative to the use of artificial intelligence and machine learning in accelerating the translation of scientific data to policy and practice in food and nutrition. Workshop discussions and deliberations are under review for publication.



## IHA and Associate Members Inform Policy

Nutrition and agriculture policy continues to evolve at the state and national level. Rebecca Seguin-Fowler, Regan Bailey, Cliff Lamb, Beth Racine, Bart Fischer, Jenny Jones, Jennifer Yezak, Brian May, Dustin Bryant and Matt Schertz are just a few who have provided scientific insights and been responsive to our legislative leaders on a wide variety of topics from federal food assistance programs to dietary guidance to agriculture/food systems.







## IHA Kicked Off Task Force With Chicago Council on Global Affairs

In partnership with the Chicago Council on Global Affairs' Center on Global Food and Agriculture, the Responsive Agriculture Task Force is developing a national roadmap for responsive agriculture via three strategic committees:

- Chronic Disease Reduction – Chaired by Dr. Catherine E. Woteki, visiting Distinguished Institute Professor with the Biocomplexity Institute at the University of Virginia.
- Agricultural Ecosystems and Agriculture-Food Value Chain – Chaired by Dr. Jessica Fanzo, professor of climate and the director of the Food for Humanity Initiative at Columbia University's Climate School in New York City.
- Nutrition Security – Chaired by Dr. Christina Economos, dean at the Friedman School, a professor and the New Balance Chair in Childhood Nutrition and a professor of public health and community medicine at Tufts University School of Medicine.

## IHA Launched Ongoing Partnership With USDA

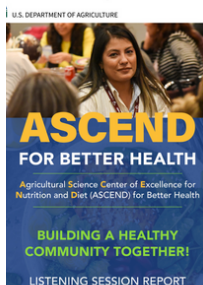
Dr. Tim Paape, USDA/ARS Scientist, Contributes to Responsive Agriculture Research



Research Geneticist Dr. Tim Paape's work uses interdisciplinary approaches to identify the underlying genetic basis of traits in plants that improve nutritional qualities.

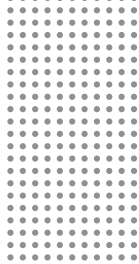
Dr. Paape's research directly supports IHA's Responsive Agriculture focus area.

## IHA and Texas A&M International University Hosted Listening Event With USDA



The USDA, in partnership with the IHA, hosted a community listening event in Laredo, TX to better understand how specific communities interact with food and how certain food choices lead to health outcomes, including diet-related chronic diseases and cancer.

The shared goal was to convene a diverse audience of local community members and leaders to discuss the diet-related health disparities in our community, and how we can combat these issues together.



# 2023 HIGHLIGHTS

## Innovation, Accomplishments and Elite Partnerships *Continued*

### Grants

In 2023, the IHA leadership team secured \$8.2M in grants to support the following projects:

- Designing and Implementing a Systems Approach to Responsive Agriculture and Precision Nutrition (USDA-ARS).
- Building a Healthy Community Together – Laredo, TX (USDA-ARS).
- Governors University Research Initiative (GURI) Grant Program (Texas Governor's Office).
- MN-Systematic Approach to Evaluate Nutrition Biomarkers for MNCH Outcomes (Bill and Melinda Gates Foundation).
- Are Interventions Supporting Physical Activity Modified by the Environment (InSPACE)? (Seattle Children's Hospital).
- Eggs in the Usual Diet and Recommended Diet as an Indicator of Micronutrient Intake Among Food Secure and Insecure Adolescents in the U.S. (Purdue University).

### Awards and Accomplishments

- Dr. Seguin-Fowler was elected to the National Academies of Science, Engineering, and Medicine and served as a member of the Planning Committee for the Food Forum Workshop from the National Academy of Sciences, Engineering, and Medicine.
- Drs. MacMillan-Urbe and Szeszulski, based at the Dallas Center Healthy Living Program, were awarded the Vice Chancellor's Award.
- Dr. Seguin-Fowler was an expert panelist for the Best Diets for 2024 report from the U.S. News & World Report.
- Dr. Bailey traveled to the White House in July for the PCAST Advancing Nutrition Science Workshop – a coordinated federal vision for advancing nutrition science in collaboration with external scientific experts, the Interagency Committee on Human Nutrition Research (ICHNR) and the White House Office of Science and Technology Policy (OSTP).
- Dr. Seguin-Fowler was awarded the Friedman School Alumni Excellence in Nutrition Award from Tufts University.
- Dr. Bailey attended the Chicago Council's Global Leadership Awards Dinner.
- Dr. Seguin-Fowler was named a Top 50 Women Leader of Austin from Women We Admire.
- Healthy Living team hosted 10+ community engagement events, including I Heart Health, the AARP Block Party and the Richardson Health Fair.





## Recent Publications

See Drs. Bailey and Seguin-Fowler's recent publications using the QR codes below:

Dr. Bailey



Dr. Seguin-Fowler



## Associate Members

**Joseph Awika**, post-doctoral position, under Dr. Danielle Lemay, USDA-ARS Western Human Nutrition Research Center, UC-Davis.

**Robert Chapkin**, post-doctoral position, under Dr. Laxmi Yeruva, USDA-ARS Labs, Little Rock AR.

**Dmitry Kurouski**, Biochemistry and Biophysics.

**Katie Lynn Lewis**, Texas A&M AgriLife Research and Extension Center at Lubbock.

**Bruce McCarl**, Department of Agricultural Economics.

**Alexandra L. MacMillan-Urbe**, Texas A&M AgriLife Research and Extension Center at Dallas, Nutrition, IHA Healthy Living Team.

**Marco A. Palma**, Department of Agricultural Economics, Human Behavior Laboratory.

**Bhimu Patil**, Vegetable and Fruit Improvement Center.

**Elizabeth Racine**, Scientific Advisory Committee member, post-doctoral position, under Drs. Julie Hess and James Roemmich, USDA-ARS Grand Forks Nutrition Research Center.

**Chad Rethorst**, Texas A&M AgriLife Research and Extension Center at Dallas, Nutrition, IHA Healthy Living Team.

**William L. Rooney**, Department of Soil and Crop Sciences.

**Yuxiang Sun**, Department of Nutrition.

**Jacob S. Szeszulski**, Texas A&M AgriLife Research and Extension Center at Dallas, Nutrition, IHA Healthy Living Team.

**Matthew Taylor**, post-doctoral position, under Dr. Javad Barouei, Prairie View University.

**Jeffery Tomberlin**, post-doctoral position, under Jean Mayer, USDA Human Nutrition Research Center on Aging, Tufts University.

**Heidi Vanden Brink**, Department of Nutrition.

# IHA FACILITIES

## NORMAN BORLAUG CENTER FOR SOUTHERN CROP IMPROVEMENT



Renovations on the Norman Borlaug Center for Southern Crop Improvement building on the Texas A&M campus in College Station are scheduled to be completed in Summer 2024.

The IHA's mission of improving human health through science-backed research perfectly epitomizes the next generation of Norman Borlaug's rich legacy of improving global food security, livelihoods, and resilience through applied agricultural research and outreach. The new Borlaug Center is the perfect home for the IHA.

### LEVEL 1

- IHA leadership and staff offices, ARS scientists and staff offices, IDEA Center.
- Research labs, e.g., robotics, tissue culture, analytical core.

### LEVEL 2

- Research labs and associated support spaces, office space.
- Administrative home for the Department of Nutrition.



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#AgForHealth



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