



# Health and Environmental Sciences Institute

[hesiglobal.org](http://hesiglobal.org)



## > HESI

- Non-profit scientific foundation based in Washington, DC, USA
- Operating internationally for over 30 years

**HESI: Science for a Safer,  
More Sustainable World**

**CONVENE. TRANSLATE. PROTECT.**

*FOR HUMAN AND ENVIRONMENTAL HEALTH*



# 2020 Balance of Engagement & Resourcing

Engagement

291 partner organizations

~71% public sector organizations

~29% private sector organizations

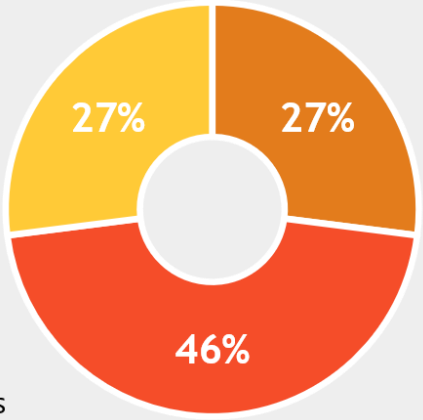


Resourcing



2020  
FUNDING  
SOURCES

- Committee Dues
- Grants
- Corporate Sponsorships



- Grants will extend into 2021
- New grants submitted
- New grant opportunities pending

## SCIENTIFIC FOCUS AREAS



### ACCURATE AND EFFICIENT CHEMICAL RISK ASSESSMENT



### SAFE AND EFFECTIVE MEDICINES



### ENVIRONMENTAL QUALITY AND SUSTAINABILITY



### FOOD SAFETY

## COMMITTEES

Animal Alternatives in Environmental Risk Assessment

Botanical Safety Consortium

Cardiac Safety

Cell Therapy – TRACKing, Circulation and Safety (CT-TRACS)

Collaboration on Ototoxicity Risk Assessment (CORA)

Development of Methods for a Tiered Approach to Assessment the Bioaccumulation of Chemicals

Developmental and Reproductive Toxicology (DART)

Emerging Systems Toxicology for the Assessment of Risk (eSTAR)

Environmental Epidemiology for Risk Assessment

Genetic Toxicology

Immuno-Safety

Multi-Component Substances (MCS) and UVCBs

PBPK Models

Protein Allergens, Toxins and Bioinformatics (PATB) and the COMPARE database

Risk Assessment in the 21<sup>st</sup> Century (RISK21)

Transforming the Evaluation of Agrochemicals (TEA)

Translational Biomarkers of Neurotoxicity (NeuTox)

## PROJECT MECHANISMS



DECISION FRAMEWORKS



DATA SHARING & COLLECTIVE ANALYSIS



NOVEL EXPERIMENTAL STUDIES



MANUSCRIPTS



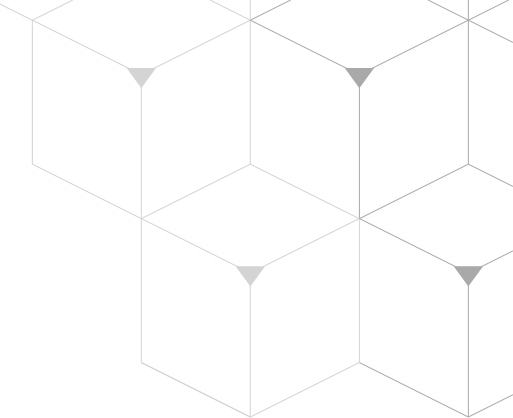
TOOL / ASSAY DEVELOPMENT



SCIENTIFIC MEETINGS & TRAININGS



# What Impacts Do HESI Programs Have?



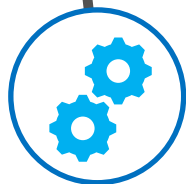
## ENHANCED EFFICIENCY & ACCURACY IN SAFETY ASSESSMENT

- *By generating science that improves practices in drug development in companies, research labs, & in regulatory practice/policy*



## ENHANCED SOCIETAL KNOWLEDGE BASE OF BIOLOGICAL & ENVIRONMENTAL PROCESSES RELEVANT TO PROTECTING HUMAN & ECOLOGICAL HEALTH

- *Through conducting & publishing novel laboratory studies on mechanisms of toxicity, biomarkers of effect, models of disease, etc.*



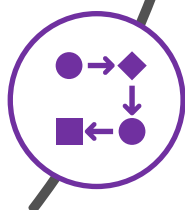
## CATALYSIS OF NEW SCIENCE

- *By bringing together partners to synergize ongoing research, share resources, & develop efficient, innovative, & impactful study design & analysis*



## INCREASED AUDIENCES FOR COLLABORATIVE SAFETY SCIENCE

- *By demonstrating the critical impact of bringing together academic, government, & industry scientists across different technical disciplines to improve public health*



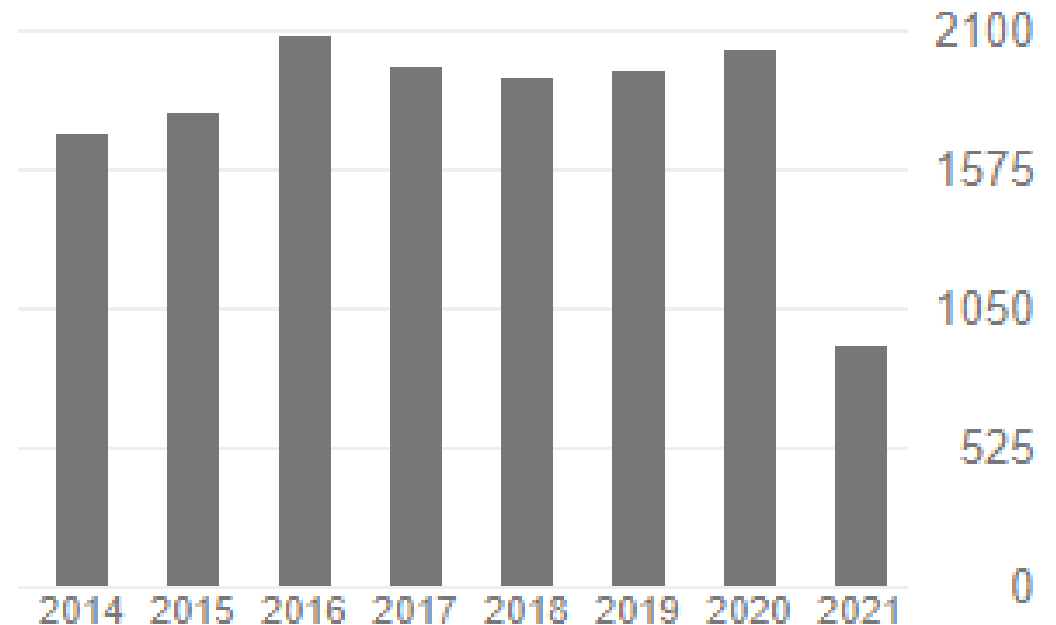
## DEVELOPMENT OF SCIENTISTS SKILLED IN TRANSLATIONAL SCIENCE

- *Through training & outreach*

# HESI's Google Scholar Page

- ▶ <https://scholar.google.com/citations?user=Vmk5S9YAAAAJ&hl=en>
- ▶ H-index is the maximum value of H such that the given author has published H papers that have each been cited at least H times
- ▶ A good H-index score depends not only on a prolific output but also on a large number of citations by other authors
- ▶ Our H-index is considered high & represents a collective of HESI authors

	All	Since 2016
Citations	24871	10862
h-index	83	48
i10-index	304	232



# HESI's science is a key reference point for...

- ICH S1, S7, E14, S5, S2, S8, S11
- OECD (Genetox, PBPK, Bioaccumulation)

- Regulatory & research agency scientific strategy & resource evaluation
- US FDA

- PMDA (Japan) via active HESI involvement
- European Commission reports & discussions

- Brazilian risk assessment methods
- Canadian risk assessment methods
- And more!

**Enhanced  
Efficiency &  
Accuracy in  
Safety  
Assessment**

# Increased Audiences for Collaborative Safety Science



In 2020 into 2021, HESI has simultaneous, active, programmatic participation & engagement from North America, South America, Europe, Asia, Oceania (Australia), & Africa

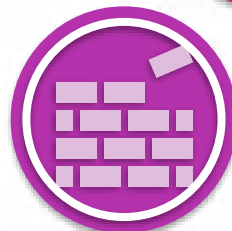


# Why Join HESI?

Opportunity to **COLLABORATE** with academic, regulatory, clinical, and other industry scientists working on issues that matter to your scientific portfolio



Opportunity to **BUILD SCIENTIFIC NETWORKS AND PROFESSIONAL DEVELOPMENT** for your staff



Opportunity to **LEVERAGE RESOURCES** by pooling data, expertise, funding, and lab facilities across partner organizations



Opportunity to **ACTIVELY CONTRIBUTE TO DISCUSSIONS AND DATA GENERATION/EVALUATION THAT IMPACTS GLOBAL SAFETY ASSESSMENT PRACTICES**



**EXPOSURE** to global best practices, evolving drug/development safety issues and discussions, etc.



## Facilitating New Science:

Moving science from the idea stage to the implementation stage

The adoption of new programs & projects allows HESI to address the most relevant emerging science & serve as a contemporary resource for our stakeholders

# PROPAGATE Network – A HESI Initiative to Advance Global Health Equity Through Efficient & Accurate Methods

EMBO Molecular Medicine | EMBOpress | JOURNALS | This Journal

CURRENT ISSUE | ABOUT | INFORMATION | ARCHIVE | ALERTS | SUBMIT

**Latest Online**  
Articles published ahead of print

Correspondence | 27 May 2020 | OPEN ACCESS

**'All In': a pragmatic framework for COVID-19 testing and action on a global scale**

Syril D Pettit, Keith R Jerome, David Rouquié, Bernard Mari, Pascal Barbry, Yasunari Kanda, Mineo Matsumoto, Susan Hester, Leah Wehmas, Jason W Botten, Emily A Bruce

This paper proposes a novel 4Ps Framework (Prioritize, Propagate, Partition, and Provide) to guide multidisciplinary, scalable, resource-efficient, and achievable efforts towards enhanced SARS-CoV-2 testing capacity and improved public health decision-making in response to the COVID-19 pandemic.

ABSTRACT | FULL TEXT | PDF

PROPAGATE Partner Organizations

UW Medicine LABORATORY MEDICINE VIROLOGY

The University of Vermont LARNER COLLEGE OF MEDICINE

UNIVERSITÉ CÔTE D'AZUR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

UNIVERSITY OF MALAWI

UCONN | SCHOOL OF PHARMACY

BAYER

USP Universidade de São Paulo

THE UNIVERSITY OF THE WEST INDIES

PROPAGATE NETWORK

Facultad de Medicina Clínica Hospital - Universidad del Comodoro

HESI.

-Nigeria  
-Malawi  
-Brazil (3 sites)  
-Chile  
-Trinidad

-USA (3 Sites)  
-France



PROPAGATE Study Workflow: See Figure 1 below:

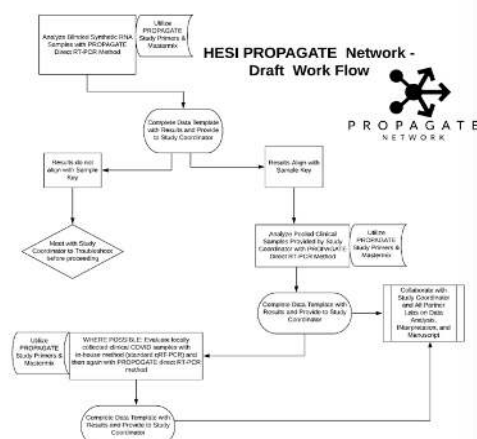


Figure 1: PROPAGATE Study Workflow

SIGN IN | REGISTER | SUBSCRIBE | SEARCH OUR SITE

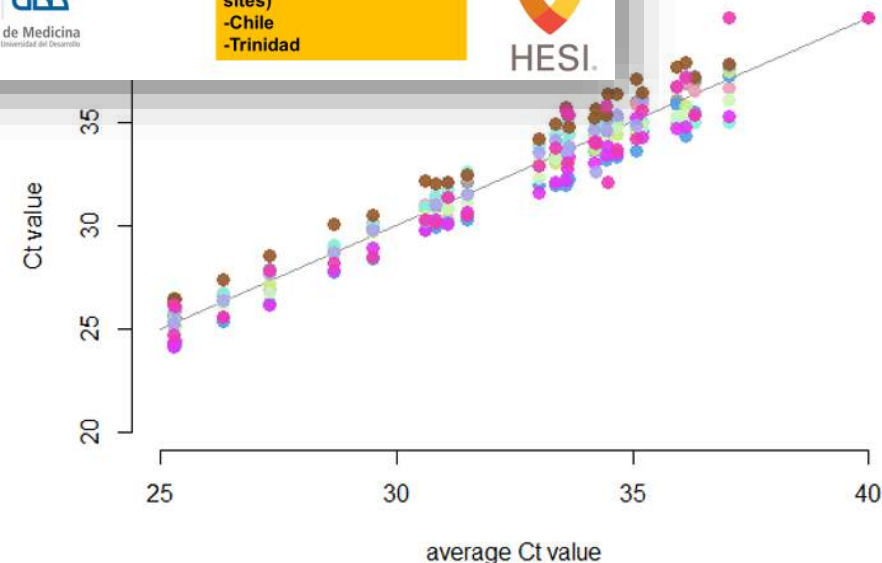
**CHEMISTRYWORLD**

NEWS | RESEARCH | OPINION | FEATURES | CULTURE | CAREERS | PODCASTS

**New Covid-19 test doesn't need reagents that are in short supply**

BY REBECCA TRAGER | 12 OCTOBER 2020

A shortage of key chemicals needed for tests to diagnose



**Figure 1.** Ct values plotted against the sample-specific average Ct values from the 10 laboratories. The solid line indicates the line of equation  $y = x$ . Each color indicates one laboratory; a same color is used to identify a same laboratory in all plots of the report.

- ▶ Method likely to be adopted by multiple test sites in Brazil & in use by Children's Hospital of Philadelphia
- ▶ Example of HESI innovation & public benefit

# Joining HESI

## Sponsorship Fee Schedule in US Dollars

Worldwide Sales	Base Fee
Less than \$5 Million dollars	\$800
\$5 Million to \$49.99 Million	\$3,000
\$50 million to \$499 million	\$5,400
\$500 million to \$999 million	\$10,800
\$1 billion to 1.99 billion	\$16,200 + (\$5,400 * ____ billion over 1 billion)
\$2 billion to 4.99 billion	\$21,600 + (\$1,800 * ____ billion over 2 billion)
\$5 billion to 9.99 billion	\$27,000 + (\$860 * ____ billion over 5 billion)
\$10 billion to 19.99 billion	\$31,300 + (\$290 * ____ billion over 10 billion)
\$20 billion to 29.99 billion	\$34,200 + (\$490 * ____ billion over 20 billion)
\$30 billion to 39.99 billion	\$39,100 + (\$490 * ____ billion over 30 billion)
\$40 billion to 99.999 billion	\$44,000 + (\$102 * ____ billion over 40 billion)
\$100 billion and above	\$50,100

- ▶ Information on joining HESI is available here: [hesiglobal.org/sponsorship-application](https://hesiglobal.org/sponsorship-application)
- ▶ Participation requires becoming a HESI sponsor and then selecting (and paying for) the scientific programs in which your organization would like to participate on an annual basis. Participation fees cover as many scientists as you would like to join for the same fee

- ☐ Agricultural Chemical Safety Assessment (ACSA) 2.0 Committee - \$10,000
- ☐ Animal Alternatives in Environmental Risk Assessment Committee - \$12,000
- ☐ Application of Environmental Epidemiology in Risk Assessment and Decision-Making Committee - \$10,000
- ☐ Bioaccumulation of Chemicals Committee - \$12,000
- ☐ Cardiac Safety Committee - \$7,000
- ☐ COMPARE Allergen Database - \$35,000
- ☐ CT-TRACS Committee (Cell Therapy – TRacking, Circulation, & Safety) - \$10,000
- ☐ Development of a Tiered Approach for UVCB Ecological Risk Assessment Committee - \$12,000
- ☐ Developmental and Reproductive Toxicology (DART) Committee - \$10,000
- ☐ Emerging Systems Toxicology for Assessment of Risk (eSTAR) Committee - \$8,000
- ☐ Genetic Toxicity Technical Committee - \$10,000
- ☐ Immuno-Safety Technical Committee - \$9,000
- ☐ PBPK Modeling Platforms Committee - \$10,000
- ☐ Protein Allergens, Toxins, and Bioinformatics (PATB) Committee - \$25,000
- ☐ Risk Assessment for the 21st Century (Risk 21) Committee - \$15,000
- ☐ Translational Biomarkers of Neurotoxicity Committee - \$7,000
- ☐ Select All

# How Can I Learn More About HESI's Scientific Programs?

- ▶ An overview of recent efforts is available in [HESI's 2020 Annual Report](#)
- ▶ Contact HESI's Executive Director, Dr. Cyril Pettit ([spettit@hesiglobal.org](mailto:spettit@hesiglobal.org)), for more information
- ▶ Propose a webinar or in-person meeting to discuss HESI programs and opportunities for participation
- ▶ [hesiglobal.org](https://hesiglobal.org)

Thank you for your interest! We look forward to speaking with you further.