



**FSU** | **INSTITUTE FOR  
SUCCESSFUL LONGEVITY**

# 24 Fall Affiliate Meeting

Institute for Successful Longevity

November 5, 2024

**FSU** | **FLORIDA STATE  
UNIVERSITY**



# Affiliate Meeting Agenda

- New affiliates of ISL
- New postdoc
- Recent events
- Good news from affiliates
- Upcoming events
- Working Groups updates
- Grant opportunities
- General discussion

# New ISL Affiliate

- New ISL affiliate: Dr. Min Sook Park



**Dr. Min Sook Park** specializes in data-intensive, user-centered health informatics, focusing on chronic conditions and their caregivers. Her research explores the relationship between information technology and health users to support individuals managing hypertension, diabetes, cancer, and dementia. Collaborating with interdisciplinary teams, she develops innovative health applications, including a voice-activated mobile health app for chronic disease management. Utilizing computational methods, Dr. Park analyzes user-generated data from social media to uncover insights into health information needs and behaviors.

# New ISL Affiliate

- New ISL affiliate: Dr. Daejin Kim



**Dr. Daejin Kim's** research explores how the physical environment can support the health and well-being of older adults, with a foundation in environmental psychology and gerontology. Her work focuses on designing safer, more supportive interior spaces that enable older adults to age in place with independence. Through examining fall prevention, home modifications, and smart home technologies, Dr. Kim identifies design elements that improve safety and comfort. Her interdisciplinary approach, collaborating with experts from fields like occupational therapy and computer science, enriches her research and contributes to innovative solutions that enhance the quality of life for aging populations.

# New ISL Affiliate

- New ISL affiliate: Dr. Sladjana Lukic



**Dr. Sladjana Lukic** is a language neuroscientist with multidisciplinary expertise in formal linguistics, stroke and primary progressive aphasia, and neuroimaging. She is an Assistant Professor in the School of Communication Science and Disorders at FSU and Director of NoLaB Lab, where her work focuses on disentangling linguistic (dis)abilities in people with aphasia and uncovering their underlying neuroanatomical correlates using both structured language tests and naturalistic speech measures. Her research also explores linguistic processes in the context of degeneration and development, from which she has developed her new line of work investigating how language shapes behavior. She received her PhD and MA from Northwestern University under the supervision of Dr. Cynthia Thompson and completed postdoctoral training in Cognitive Neuroscience at the UCSF Memory and Aging Center under the supervision of Dr. Maria Gorno-Tempini.

# New ISL Affiliate

- New ISL affiliate: Dr. Amber DeJohn



**Dr. Amber DeJohn** is a health geographer studying the interaction between built environments, technology, and their impact on loneliness and health, particularly among older adults. Using both quantitative and qualitative methodologies, including Fitbit data, surveys, interviews, and time-use data, Dr. DeJohn's research focuses on how urban environments affect social interactions and healthy aging. Recent work has examined the effects of the COVID-19 pandemic on migrant older adults in the Greater Toronto Area, contributing to the understanding of mobility and technology's roles in socializing within urban spaces. Since joining FSU, Dr. DeJohn has focused on Florida's unique context, collecting data on older adults' mobility and social isolation, with plans for future studies on extreme heat coping behaviors and the ethics of care in nursing homes. Additionally, Dr. DeJohn founded the Geographies of Aging and the Life Course (GOAL) working group to advance geographic methods in aging research, organizing sessions and networking opportunities to support grantsmanship and research development.

# New ISL Affiliate

- New ISL affiliate: Dr. Yunjung Kim



**Dr. Yunjung Kim** is a professor in the School of Communication Science and Disorders and directs the FSU Motor Speech Laboratory. Her primary research interests lie in the transformation from a talker's articulatory behavior to listeners' reaction. Specifically, her work has focused on identifying acoustic and articulatory characteristics of speech produced by people with neurologic conditions that negatively impact their speech intelligibility. For this, she uses a wide methodological toolkit including acoustic analysis software, electromagnetic articulography (EMA), and ultrasound imaging. Recent work in the lab has focused on developing speech rehabilitation models for linguistically and culturally minor groups (e.g., foreign born immigrants) in international, multidisciplinary collaboration with experts in rehabilitation psychology, business, computer engineering, and clinical care.

# New ISL Postdoc

- New ISL Postdoc: Dr. Daniel Leme
- State date: April 2025
- He is a physiotherapist and gerontologist passionate about data. He is interested in using robust statistical methods and machine-learning models to investigate sarcopenia, frailty, and multimorbidity in older adults to improve health strategies from a macro view. In his postdoctoral position at the University of Waterloo, he is developing machine learning algorithms to predict delays in discharges in acute hospitals and mobility limitations in home care. He is also developing statistical models to assess the effect of antipsychotic use on behavioral worsening in long-term care in retrospective studies.





# ISL Events – L3X



The 15th annual Lifelong Learning Extravaganza (L3X)  
8/13/2024 @ Tallahassee Senior Center



# ISL Events – FSU Health Expo

FSU Health Expo  
9/11/2024 @ Tallahassee Senior Center



# ISL Speaker Series



- Guest: Dr. George Demiris
- Morning event: Talk “Technology and Aging”; Panel Discussion
- Afternoon event: Talk “AI and Aging”



# Feedback on ISL Speaker Series

## Q5 - Did you enjoy the event(s)? (Yes - 5/No - 1/Didn't Attend - 0)

Field	Min	Max	Mean	Standard Deviation	Variance	Responses	Sum
Luncheon	0.00	5.00	3.57	2.26	5.10	7	25.00
Panel and Talk	4.00	5.00	4.89	0.31	0.10	9	44.00
Lecture and Reception	5.00	5.00	5.00	0.00	0.00	5	25.00

## Q6 - What did you like about the event(s)?

What did you like about the event(s)?

Q&A with all panelists, offered varied input on topic of AI and Tech.

Novel research ideas, grant opportunities.

The panel was very diverse and presented many views. There was a lot of time for questions.

Greatly enjoyed

All the info was excellent

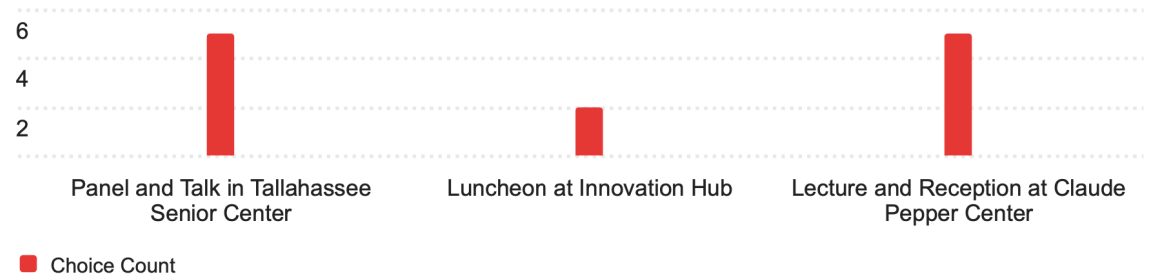
## Q7 - What did you dislike about the event(s) or how can we improve?

What did you dislike about the event(s) or how can we improve?

Have more interactive Sr topic talks at the Sr Center.

All good

## Q4 - Which events did you attend?



# ISL Brown Bags



Dr. Geraldine Martorella  
9/18/2024



Dr. Qing-Xiang Amy Sang  
10/30/2024



# Good News

## ISL Affiliate Dr. Ravi Nagpal receives three nutrition research grants to advance diet-microbiome research

October 9, 2024

The Institute for Successful Longevity (ISL) at Florida State University is proud to announce that Dr. Ravi Nagpal, Assistant Professor in the Department of Health, Nutrition, and Food Sciences, has been awarded three nutrition research grants to establish and advance his research program focused on the role of diet-microbiome interactions in human health and disease.



## ISL Interim Director Zhe He Secures Three Major NIH Grants to Advance HIV Prevention, AI Training, and Aging Research

October 3, 2024

The Institute for Successful Longevity (ISL) at Florida State University is proud to announce that Dr. Zhe He, Associate Professor in the School of Information and Interim Director of ISL, has been awarded three significant grants from the National Institutes of Health (NIH). These grants will advance public health research, AI training for biomedical researchers, and aging research.



# Good News



ISL affiliate **Dr. Gloria Salazar**, from the Department of Health, Nutrition, and Food Sciences, awarded a \$600,000 grant from the Florida Department of Health for the project “Modulation of the gut-vascular axis by E-cigarette and menthol.” ISL affiliates **Dr. Ravi Nagpal** and **Dr. Pradeep Bhide** are co-investigators on this project. ■

**Dr. Ravi Nagpal** delivered an invited research talk hosted by the Feldman Lab at the University of Michigan School of Medicine. The talk focussed on Ravi’s recent work published in the prestigious journal ‘Gut Microbes’ on the effects of specific dietary interventions on gut-brain axis mechanisms relevant to Alzheimer’s disease neuropathology. ■



ISL affiliate **Dr. Ravi Nagpal**, from the Dept. of Health, Nutrition, & Food Sciences, delivered an invited research talk on “Microbiome, Sepsis, and Alzheimer’s Neuropathogenesis” at the 47th Annual meeting of The US Shock Society organized on June 1-4, 2024 at the Palm Beach Gardens Resort, FL. ■



**Hope Mimbs**, Doctoral Candidate in Sociology at FSU, was awarded the 2024 OLLI at FSU Scholarship to support her dissertation research on older adults’ friendship networks. Hope also was invited to present her research, conducted with Dr. Anne Barrett, at the (Re)conceptualizing Ageing and Social Networks conference held at the National University of Singapore in May 2024. ■

**Dr. Lucinda Graven** has been selected to receive the 2024 American Heart Association (AHA) Cardiovascular and Stroke Nursing Council Clinical Article of the Year Award for the article, “Self-Care Problems and Management Strategies Experienced by Rural Patient/Caregiver Dyads Living with Heart Failure” published in the May/June issue of the Journal of Cardiovascular Nursing. The Clinical Article of the Year Award recognizes the importance of the written word in promoting the goals of the AHA and cardiovascular and stroke nursing; encourages the dissemination of cardiovascular nursing science; and applauds the author(s) for clearly communicating the nursing perspective in the context of cardiovascular research, practice, and theory. Dr. Graven will receive the award at the 2024 AHA Scientific Sessions to be held in November in Chicago. ■





# Good News Survey

- [https://fsu.qualtrics.com/jfe/form/SV\\_6GpBYeM0WBWjmxE](https://fsu.qualtrics.com/jfe/form/SV_6GpBYeM0WBWjmxE)

The screenshot displays the website for The Institute for Successful Longevity at Florida State University. The header includes the university name and logo, along with navigation links: HOME, FACULTY RESOURCES, FACULTY AFFILIATES, NEWS (highlighted), ADVISORS, DONATE, ABOUT US, REGISTRY, and RESEARCH HIGHLIGHTS. The main content area features a 'News' section with a 'News Listings' heading. A prominent news item is titled 'ISL organizes a special issue on "Smart Medicine for Older Adults" in Healthcare (IF: 2.4)', dated Wednesday, July 10, 2024, at 12:00 PM. The text below the title reads: 'Dear ISL affiliates, The Institute for Successful Longevity at Florida State University, in collaboration with Healthcare, is pleased to announce a Special Issue on "Smart Medicine for Older Adults" in Healthcare (IF: 2.4)'. To the right of the news listing is a call-to-action box titled 'News Articles' with the text: 'Click here to submit news articles for FSU ISL website and newsletters!'. Below this is a 'RECENT STORIES' section listing the same special issue and another article titled 'Celebrating the Legacy of Dr. Neil'.



# ISL Volunteer Registry

- Migrated from Psychology to CCI
- The log in credentials are the same as before
- <https://isl.cci.fsu.edu/>
- More secure



**Dhruv Kale**  
Web Developer

# Upcoming Events

- Fall Brownbag series talks (hybrid)
  - Dr. Patricia Born (11/6/2024)
  - Dr. Jackie Zhang (1/15/2025)
- Spring Brownbag series talks (hybrid)
  - Dr. Hongyuan Cao (2/5/2025)
  - Dr. Anne Barrett (3/2025)
- ISL Planning Grant (3/2025)
- Mayo Clinic Datathon and Data Summit (4/2025)
- ISL's Student Poster Day (4/2025)
- The Esther & Del Grosser Scholarship (4/2025)



## Mayo Clinic Datathon and Data Summit

April 4-6, 2025, Kinne Auditorium, Mayo Clinic Florida

### Data Summit (April 4)

- Addressing bias in AI and its impact on healthcare.
- Collaboration between clinicians and tech to bring AI solutions to practice.
- Panels on clinical decision support, overcoming bias, and building expert communities.

### Datathon (April 4-6)

- Teams collaborate to solve real-world healthcare problems using data.
- Hands-on experience in AI model development and data analytics.
- Mentorship from experts across clinical, data science, and engineering fields.
- Final presentations judged on innovation, impact, and feasibility.

### Why Attend?

- Learn from top experts in AI and healthcare.
- Collaborate with peers to solve real-world clinical problems.
- Gain hands-on experience in AI model development and clinical data analysis.

*Be part of healthcare innovation with hands-on AI experience.*

*Collaborate with experts to solve real clinical problems.*

*Compete for prizes and gain recognition.*

*Learn from keynotes on AI and ethics in healthcare.*

*Access real-world datasets and expert mentorship.*

*Featured Speakers:*

*John Halamka MD, MS.  
Leo Celi, MD, MS.*



### Course details

Registration: \$200.00 CME: 7.00 AMA PRA Category 1 Credit™

Course Directors: Anirban Bhattacharyya, MD, MS.  
Pablo Moreno Franco, MD.



# New ISL Structure

- Three working groups of strategic emphasis
  - Advanced Technology
  - Clinical Research
  - Basic Science Research

# Advanced Technology Working Group

- **Objective:**
  - Explore and leverage emerging technologies such as AI to improve the quality of life for older adults. Focus on technologies that can be integrated into daily living, assist with health monitoring, and provide cognitive and social engagement.
- **Updates**
  - Participants will provide recommendations for high-quality online training courses in areas like machine learning, AI, and data analysis.
  - Work on outlining a white paper on aging, technology, and research at FSU.
  - The group will identify grant funding opportunities in the aging research space that they can collaborate on.



# Clinical Research Working Group

- **Objective:**

- Enhance clinical practices and interventions that improve health outcomes for the older adults. This group will focus on translational research that bridges the gap between laboratory research and practical, clinical applications.

- **Updates:**

- To develop a standardized training/certification program for students/RAs who are interested in getting involved in clinical aging research;
- To create this program using a CANVAS course with modules for learning different clinical and research skills that are relevant across many of the clinical research labs on campus.

# Basic Science Working Group

- **Objective:**

- Investigate the fundamental biological, psychological, and social mechanisms of aging. This group aims to uncover new knowledge that could lead to groundbreaking treatments and preventive strategies.

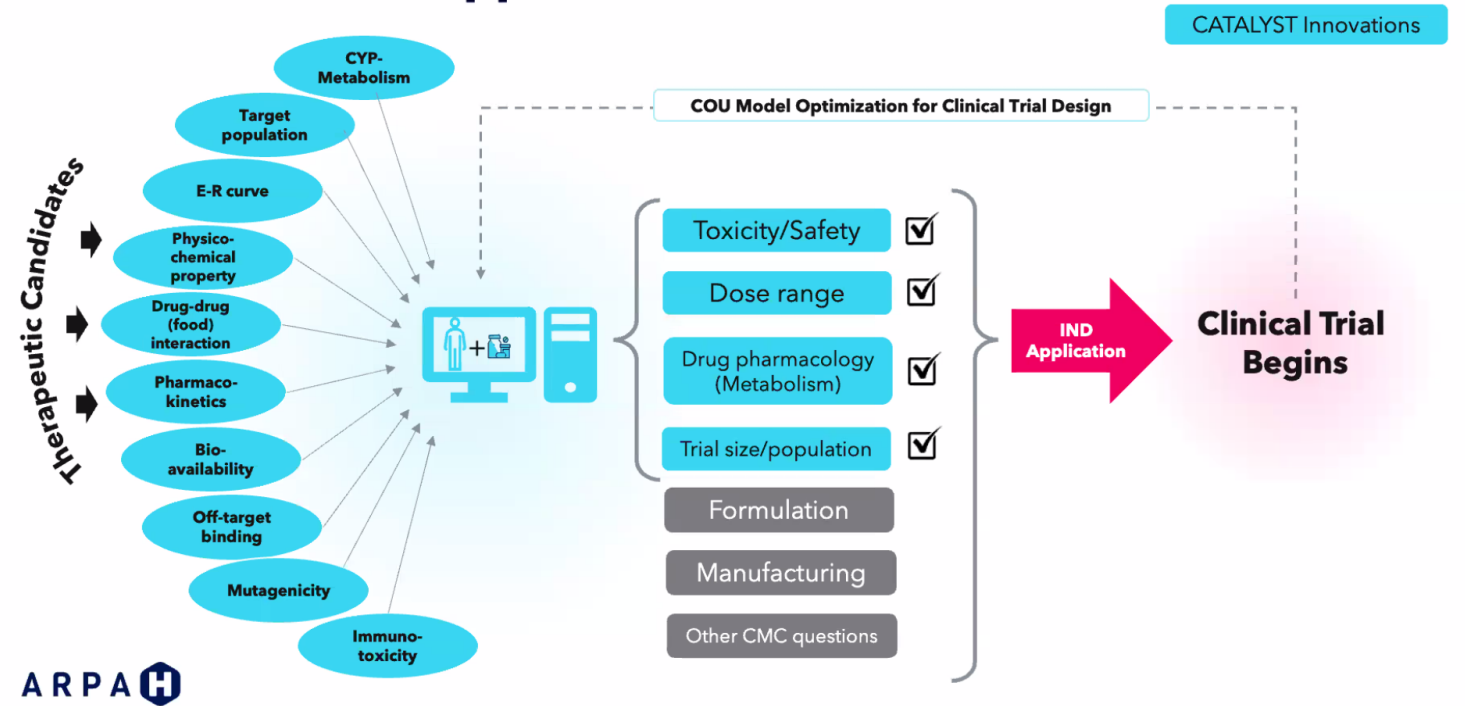
- **Updates:**

- Explore creating a training portal or "clinical research unit" on the ISL website to provide resources and certifications for students and researchers.
- Investigate funding opportunities from NIH, USDA, or other sources to support an annual ISL symposium or conference on aging research.
- Expand the ISL research poster day event to include both graduate and undergraduate student presentations

# Grant Opportunity

- ARPA-H CATALYST Solicitation
- Pre-proposal due: 11/ 25

## Future of FIH Trial Approval



ARPA

E-R: Exposure-Response, CYP: Cytochrome P450, COU: Context of Use

# CATALYST Focuses on Preclinical Drug Safety Prediction

## Current Paradigm

### Drug development cost

\*Preclinical ~\$470M

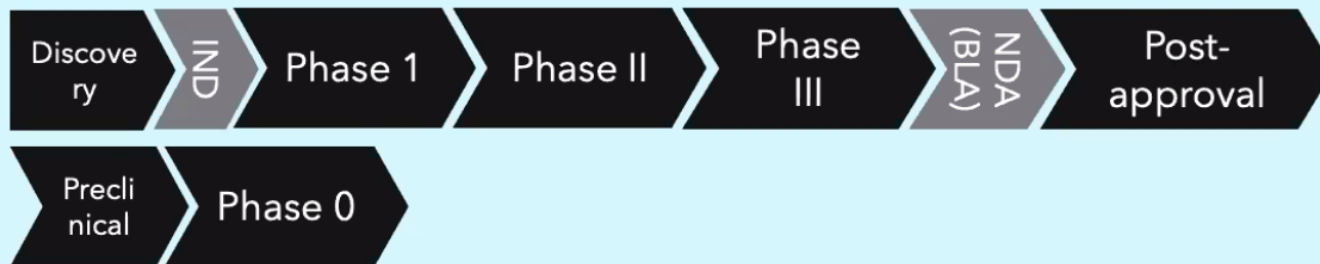
\*Clinical \$680M ~ \$1.2B



## Future w/CATALYST Success

### Drug development cost

\*Significant reduction in both preclinical and clinical costs



### CATALYST Success Results in:

- Faster (and more accurate) preclinical assessment (years --> months)
- Cheaper drug development process - translate to patients
- Outsized patient and economic impact for more drug approvals
- Increased access to FIH - paves way for smaller market drugs and rare disease therapies to be feasible



# CATALYST Program Execution

## CATALYST Innovators



In silico Model Developers



Researchers

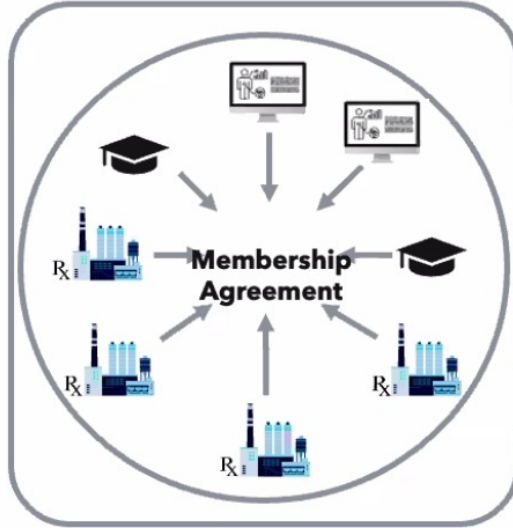
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Product Sponsors with Candidate Pharmaceuticals



## CATALYST Teams



Multiple Developers and Sponsors Per Team Encouraged (for COU optimization)



## CATALYST Structure (Phases I/II)



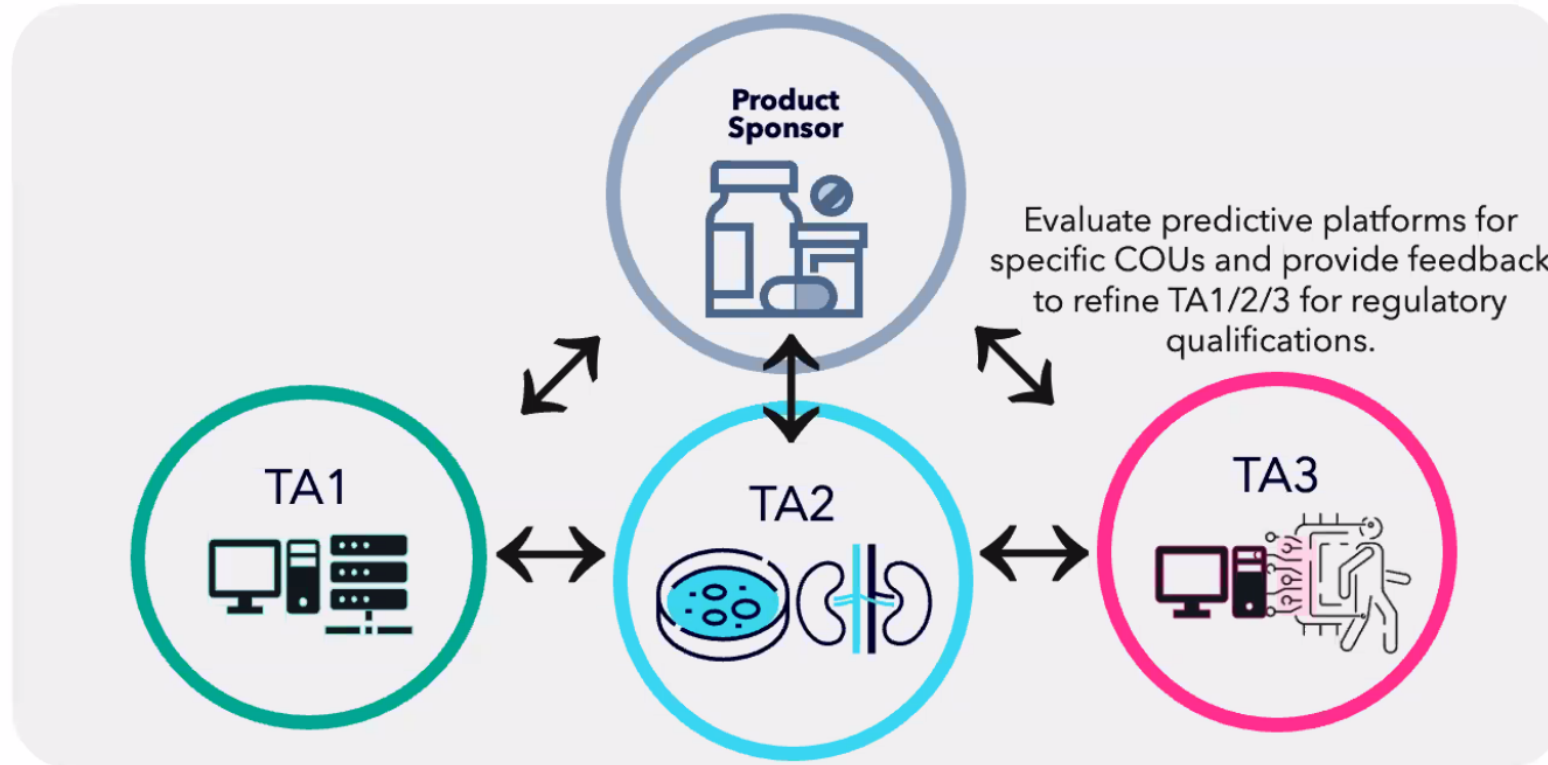
Method Qualification (Phase I - led by Model Developer/Digital CRO)



Use in Regulatory Filing (Phase II - led by Product Sponsor)



# CATALYST Approach



## TA1: Data discovery methods for predictive drug safety models

Development of a novel GXP environment for data assurance and analytic predictions



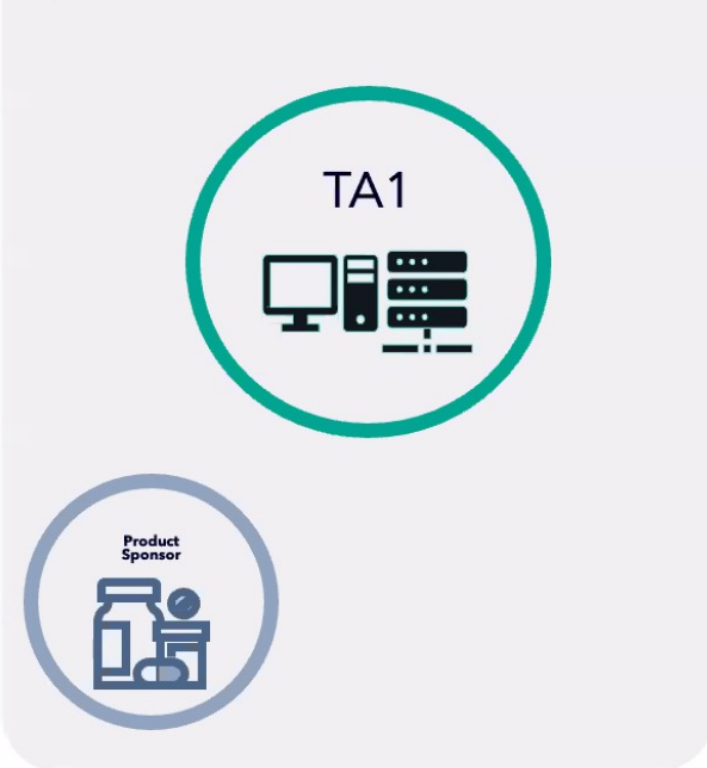
Development of innovative tools that will generate verifiable datasets of human physiology to inform and optimize preclinical model development in CATALYST

Development of a predictive platform of human physiology using validated datasets (TA1 and TA2) and methods (TA2)

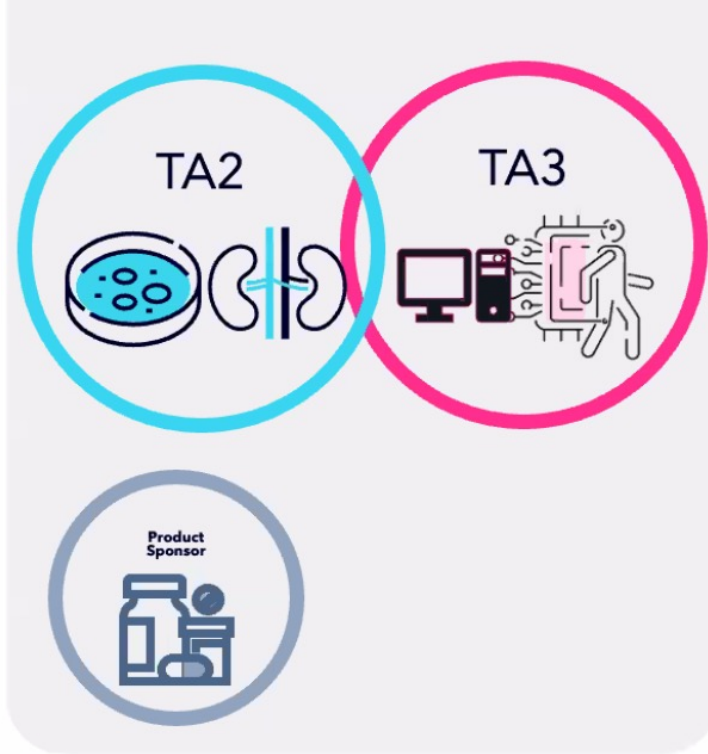
# CATALYST Team Proposal Options

- Teams can be composed of Options 1, 2, or 3
- All Teams should include a **Product Sponsor** to demonstrate ability to execute Phase I and Phase II

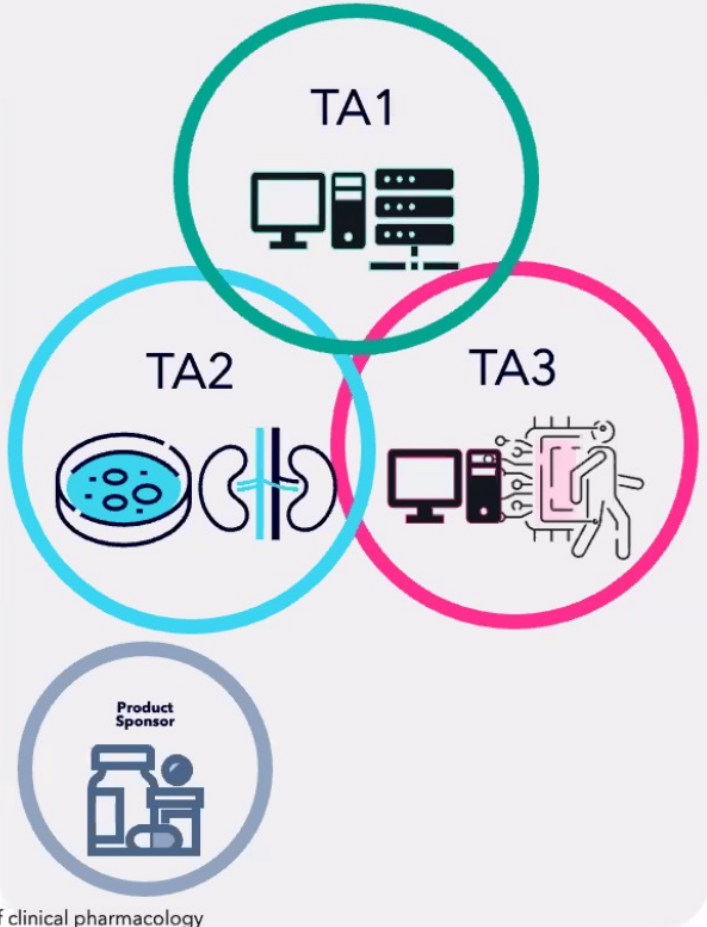
Option 1: TA1 alone



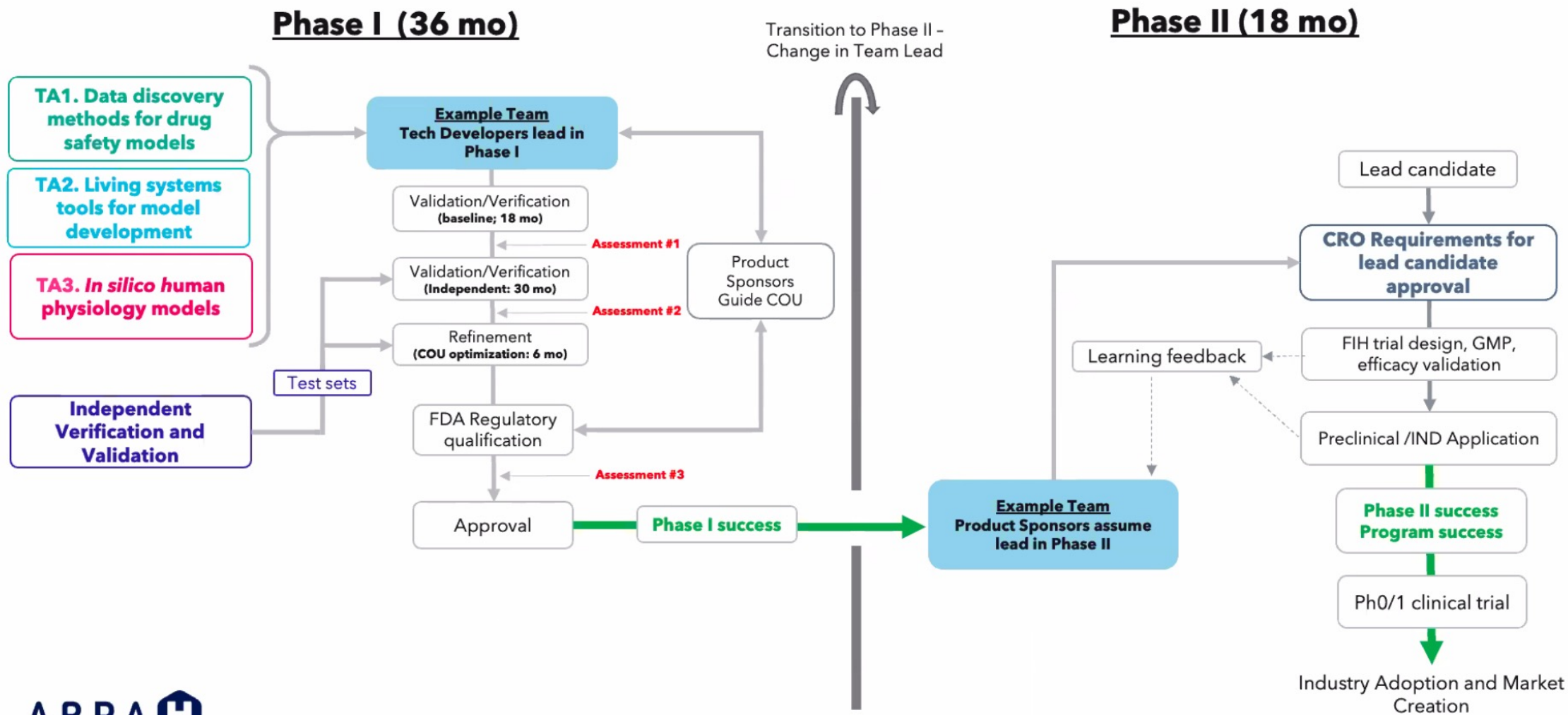
Option 2: TA2 and TA3



Option 3: TA1, TA2, and TA3



# CATALYST Approach to Developing Novel Tools and Supporting *in silico* Method Adoption



COU: Context of use, FIH: First in human, IND: Investigational new drug

# CATALYST Technical Areas (TAs)



TA1

**TA1: Data discovery methods for predictive drug safety models**



Literature



Various databases



Deep Learning  
Gen AI, Language  
model



Medical data



TA2

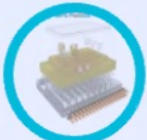
**TA2: Living systems tools for model development**



Ex vivo studies



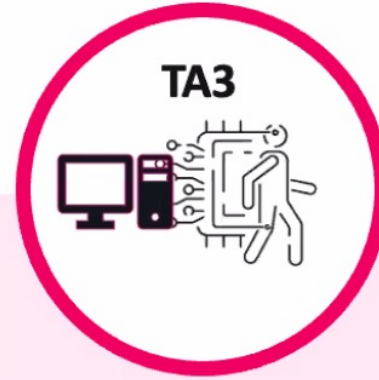
Subpopulation  
representation



Biomedical/tissue  
engineering



In vivo systems



TA3

**TA3: *In silico* human physiology models**



Systems/Network  
Biology



Pharmacometrics  
modeling/QSP/QST



Physiology/patho-  
physiology

# CATALYST “Digital CRO” Enables More Equitable and Patient-Focused Drug Development

## CATALYST Research intends to push:

- New deep-learning models for predicting drug safety outcomes
- Ability to collect new types of data from living systems to iteratively inform tool development
- *In silico* human physiology models for ADME-Tox that are generalized and predictive for all clinical populations
- GXP tools that are validated/qualified for human safety applications



**CATALYST-Funded Digital CRO**



## CATALYST-developed contracted GXP services aim to :

- Better patient outcomes - both in clinical trials and post-licensure
- Easier access to GXP tools for developers focused on rare disease, underserved populations, smaller markets, etc.
- Less use of higher-order mammal models outside of discovery research

# TA1: Data Discovery Methods and Predictive Drug Safety Models

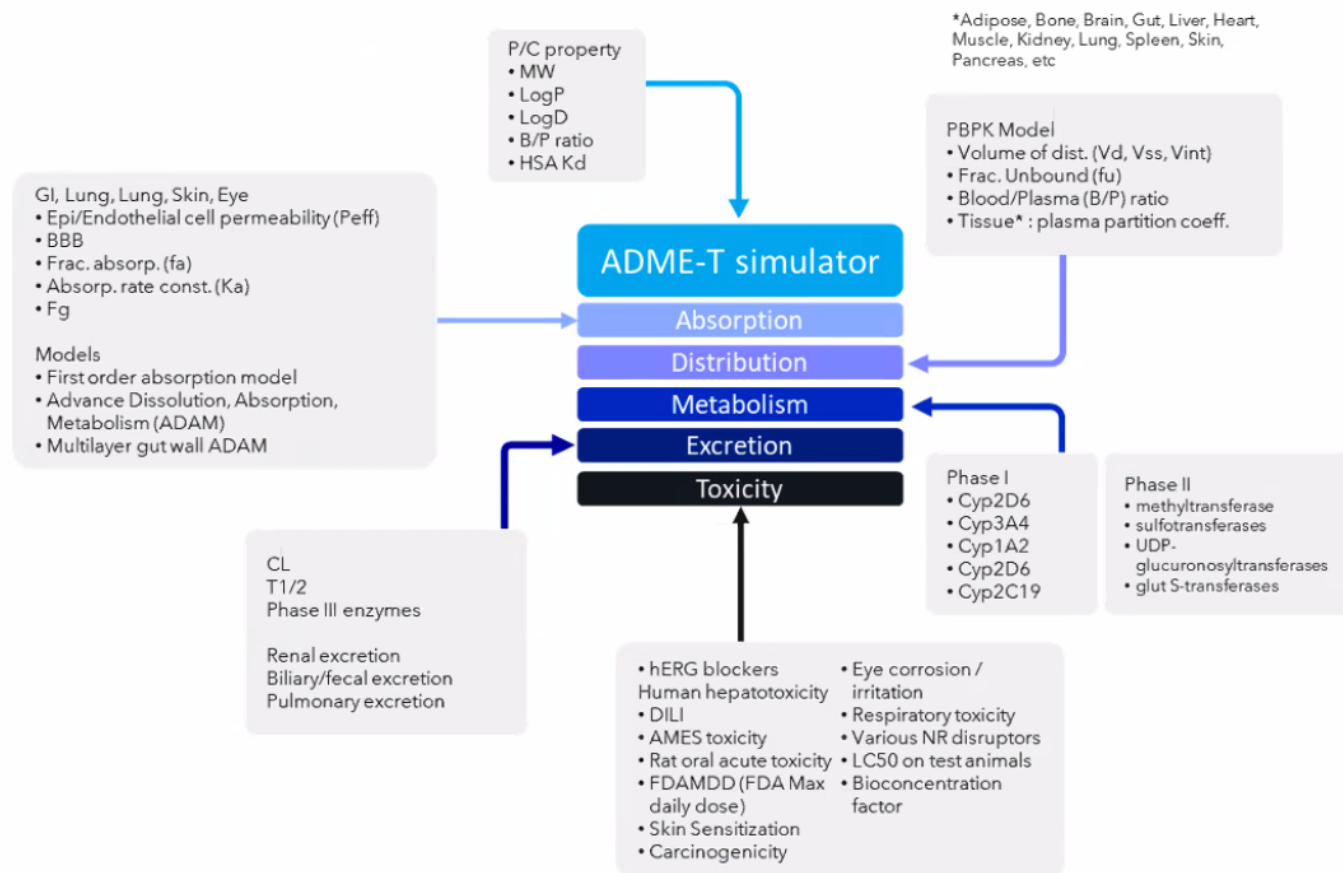
## Approach:

- Develop novel methods for data discovery
- Develop predictive drug safety models (i.e. LLMs) based on previously collected data

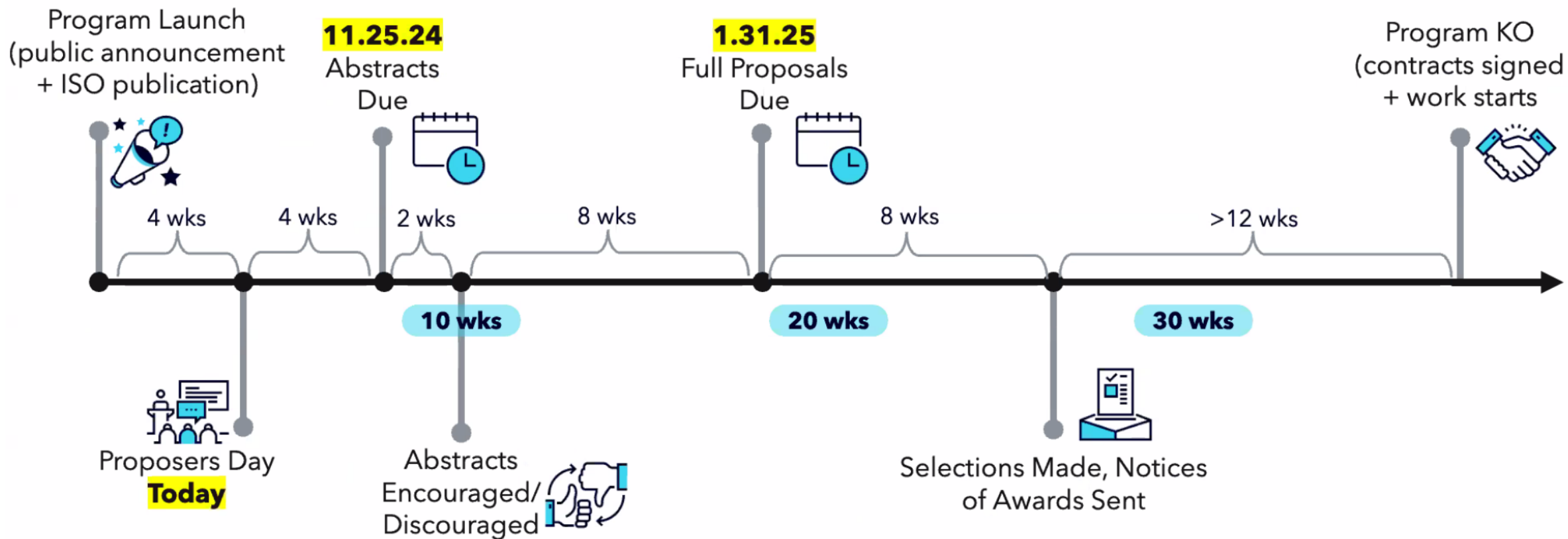
## Success Criteria:

- Discover novel data streams in ways that are configured for interoperability, standardization, and GXP compatibility
- Establish metadata standards and synchronization across diverse datasets
- Create novel drug safety models, based on existing data, that outperform existing experimental models

## Data requirement examples for ADME-T modeling:



# CATALYST Program Launch to Kick-Off Timeline







# Discussion