

AI Supplements Closeout Meeting

NIH Office of Data Science Strategy

Oct 31 , 2021

Welcome!!



**Showcase your work and share your experiences
with other researchers and the NIH**

	Oct 24 th	Oct 31 st	Nov 1 st
AI-Workforce: (NOT-OD-21-079) <i>Workforce Development at the Interface of Information Sciences, AI/ML, and Biomedical Sciences</i>	<input checked="" type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
AI-Readiness: (NOT-OD-21-094) <i>Collaborations to Improve the AI/ML-Readiness of NIH-Supported Data</i>	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

<https://www.scgcorp.com/odssaicloseout2022/>

Contacts and Information

- Event website has up to date agenda
<https://www.scgcorp.com/odssaicloseout2022/>
- If you have questions about the **program**, please email:
Mike Spittel Michael.Spittel@nih.gov
- If you have any **technical or logistics issues**, please email:
Mark Dennis mdennis@scgcorp.com
Danielle Johnikin djohnikin@scgcorp.com
- Please be sure to visit the ODSS website to read the Tagline and Abstracts submitted by your colleagues.
<https://datascience.nih.gov/artificial-intelligence/initiatives/Improving-AI-readiness-of-Existing-Data>
- Plenary Sessions will be recorded

Request

Please use the chat freely!!

NIH Observers – please add “NIH” prefix to your name in Zoom

- Right click on your video box, or click “...”
- Choose “Rename”
- “NIH – Laura Biven”

Abbreviated Agenda

10/31/2022

11:00 a.m. – 11:10 a.m. Welcome and Introductions

11:10 a.m. – 11:40 a.m. Updates on AI from NIH

11:45 a.m. – 1:10 p.m. Parallel Interactive Lightning Talks

5 minute breaks between sessions

1:20 p.m. – 1:30 p.m. Instructions for Breakout Discussion

1:30 p.m. – 2:30 p.m. Discussion (Breakouts)

2:35 p.m. – 3:05 p.m. Readout from Breakouts

3:05 p.m. – 3:20 p.m. Open Conversation

Abbreviated Agenda

10/31/2022

11:00 a.m. – 11:10 a.m. Welcome and Introductions

11:10 a.m. – 11:40 a.m. Updates on AI from NIH

11:45 a.m. – 12:05 p.m. Lunch

1:20 p.m. – 1:30 p.m. Break

1:30 p.m. – 2:35 p.m. Session

2:35 p.m. – 3:05 p.m. Break

3:05 p.m. – 3:30 p.m. Session

Use the breaks to stretch, get snacks...

Updates on AI from NIH

National AI Initiative

DIVISION E—NATIONAL ARTIFICIAL INTELLIGENCE INITIATIVE ACT OF 2020

SEC. 5001. SHORT TITLE.

This division may be cited as the “National Artificial Intelligence Initiative Act of 2020”.

Established a coordinated program across the entire Federal government to accelerate AI research and application for the Nation’s economic prosperity and national security.

<https://www.ai.gov/>

NATIONAL ARTIFICIAL INTELLIGENCE INITIATIVE

OVERSEEING AND IMPLEMENTING THE UNITED STATES NATIONAL AI STRATEGY



AI in the USG



NATIONAL ARTIFICIAL INTELLIGENCE INITIATIVE OFFICE

Oversees interagency coordination of the NAIIO

<https://www.ai.gov/>

SCAI – SELECT COMMITTEE ON AI

The senior interagency committee that oversees the NAIIO

AI R&D IWG – NITRD AI R&D INTERAGENCY WORKING GROUP

Coordinates Federal AI R&D across 32 participating agencies

<https://www.nitrd.gov/apps/itdashboard/ai-rd-investments/>

NAIAC – NATIONAL AI ADVISORY COMMITTEE

Provides advice to the President and the National Artificial Intelligence Initiative Office on matters related to the NAIIO

<https://www.ai.gov/naiac/>

NAIRRTF – NATIONAL ARTIFICIAL INTELLIGENCE RESEARCH RESOURCE TASK FORCE

Investigates the feasibility of a National Artificial Intelligence Research Resource (NAIRR), and proposes a roadmap detailing how to establish and sustain the NAIRR

<https://www.ai.gov/nairrtf/>

Federal Advisory
Committee meetings
are open to the public

NAI Strategic Pillars



ADVANCING TRUSTWORTHY AI
EDUCATION AND TRAINING
INFRASTRUCTURE
APPLICATIONS
INTERNATIONAL COOPERATION

<https://www.ai.gov/strategic-pillars/>

NITRD AI R&D INTERAGENCY WORKING GROUP



THE NATIONAL ARTIFICIAL INTELLIGENCE RESEARCH AND DEVELOPMENT STRATEGIC PLAN: 2019 UPDATE

A Report by the

SELECT COMMITTEE ON ARTIFICIAL INTELLIGENCE

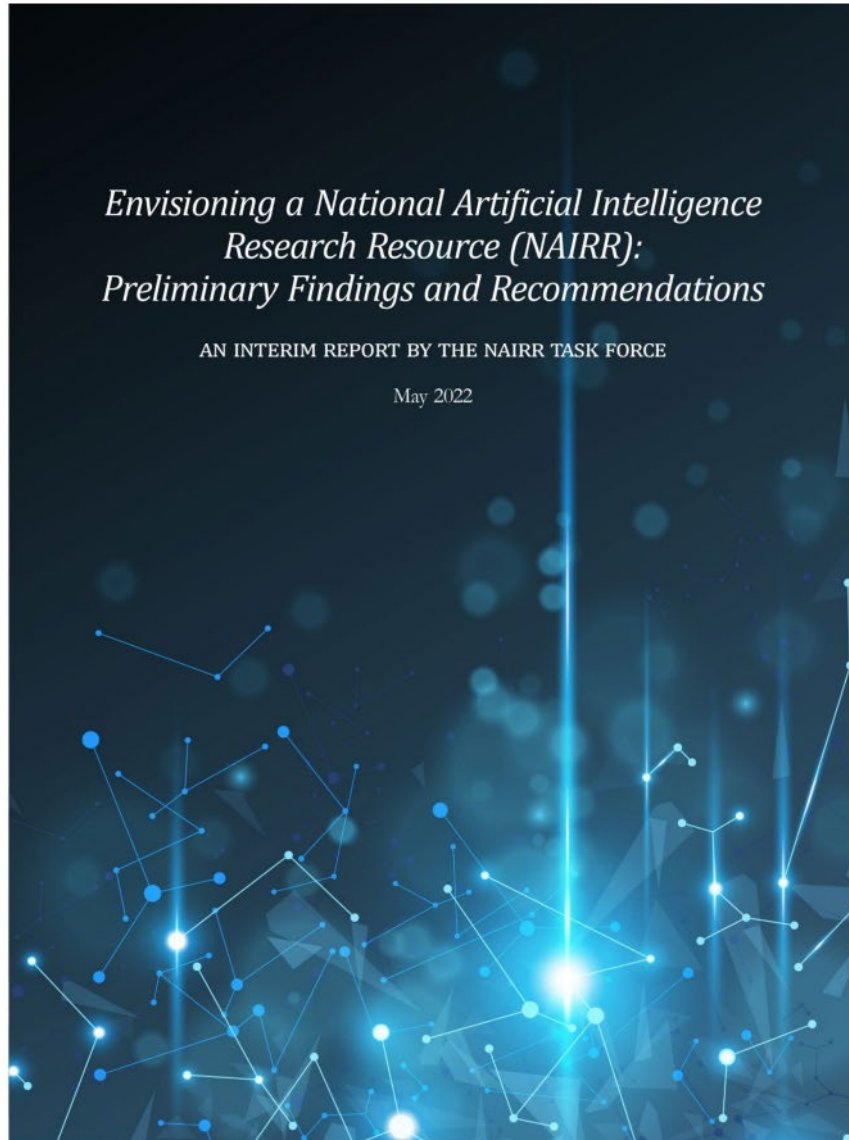
of the

NATIONAL SCIENCE & TECHNOLOGY COUNCIL

JUNE 2019

- **Strategy 1: Make long-term investments in AI research;**
- **Strategy 2: Develop effective methods for human-AI collaboration;**
- **Strategy 3: Understand and address the ethical, legal, and societal implications of AI;**
- **Strategy 4: Ensure the safety and security of AI systems;**
- **Strategy 5: Develop shared public datasets and environments for AI training and testing;**
- **Strategy 6: Measure and evaluate AI technologies through standards and benchmarks;**
- **Strategy 7: Better understand the national AI R&D workforce needs.**
- **Strategy 8: Expand public-private partnerships to accelerate advances in AI.**

NAIRR



*Envisioning a National Artificial Intelligence
Research Resource (NAIRR):
Preliminary Findings and Recommendations*

AN INTERIM REPORT BY THE NAIRR TASK FORCE

May 2022

Definition of NAIRR (15 U.S.C. § 9415(g)(1))

A system that provides researchers and students across scientific fields and disciplines with access to compute resources, co-located with publicly-available, artificial intelligence-ready government and non-government data sets and a research environment with appropriate educational tools and user support

“The strategic objective for establishing a NAIRR is to strengthen and democratize the U.S. AI innovation ecosystem in a way that protects privacy, civil rights, and civil liberties”

<https://www.ai.gov/wp-content/uploads/2022/05/NAIRR-TF-Interim-Report-2022.pdf>

Final report expected in Dec 2022



U.S. Department of Health and Human Services

Artificial Intelligence (AI) Strategy

January 2021

*“Together with its partners in academia, industry and government, HHS will leverage AI to solve previously unsolvable problems by **continuing to lead advances in the health and wellbeing** of the American people, **responding to the use of AI** across the health and human services ecosystem, and **scaling trustworthy AI adoption** across the Department.”*

<https://www.hhs.gov/sites/default/files/hhs-ai-strategy.pdf>

M-21-06



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

November 17, 2020

THE DIRECTOR

M-21-06

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Russell T. Vought
Director

A handwritten signature in blue ink, appearing to read "R. Vought".

SUBJECT: Guidance for Regulation of Artificial Intelligence Applications

Principles for the Stewardship of AI Applications

- 1) Public Trust in AI
- 2) Public Participation
- 3) Scientific Integrity and Information Quality
- 4) Risk Assessment and Management
- 5) Benefits and Costs
- 6) Flexibility
- 7) Fairness and Non-Discrimination
- 8) Disclosure and Transparency
- 9) Safety and Security
- 10) Interagency Coordination

<https://www.whitehouse.gov/wp-content/uploads/2020/11/M-21-06.pdf>

Executive Order 13960



FEDERAL REGISTER

The Daily Journal of the United States Government



PD Presidential Document

Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government

A Presidential Document by the Executive Office of the President

12/08/2020

<https://www.federalregister.gov/documents/2020/12/08/2020-27065/promoting-the-use-of-trustworthy-artificial-intelligence-in-the-federal-government>

1. Lawful and respectful of our Nation's values.
2. Purposeful and performance-driven.
3. Accurate, reliable, and effective.
4. Safe, secure, and resilient.
5. Understandable.
6. Responsible and traceable.
7. Regularly monitored.
8. Transparent.
9. Accountable.

AI Bill of Rights

THE WHITE HOUSE



[Administration](#)

[Priorities](#)

[COVID Plan](#)

[Briefing Room](#)

[Español](#)

[MENU](#)



BLUEPRINT FOR AN AI BILL OF RIGHTS

MAKING AUTOMATED SYSTEMS WORK FOR THE AMERICAN PEOPLE

 OSTP

OCTOBER 04, 2022



[Safe and Effective Systems](#)



[Algorithmic Discrimination Protections](#)



[Data Privacy](#)



[Notice and Explanation](#)

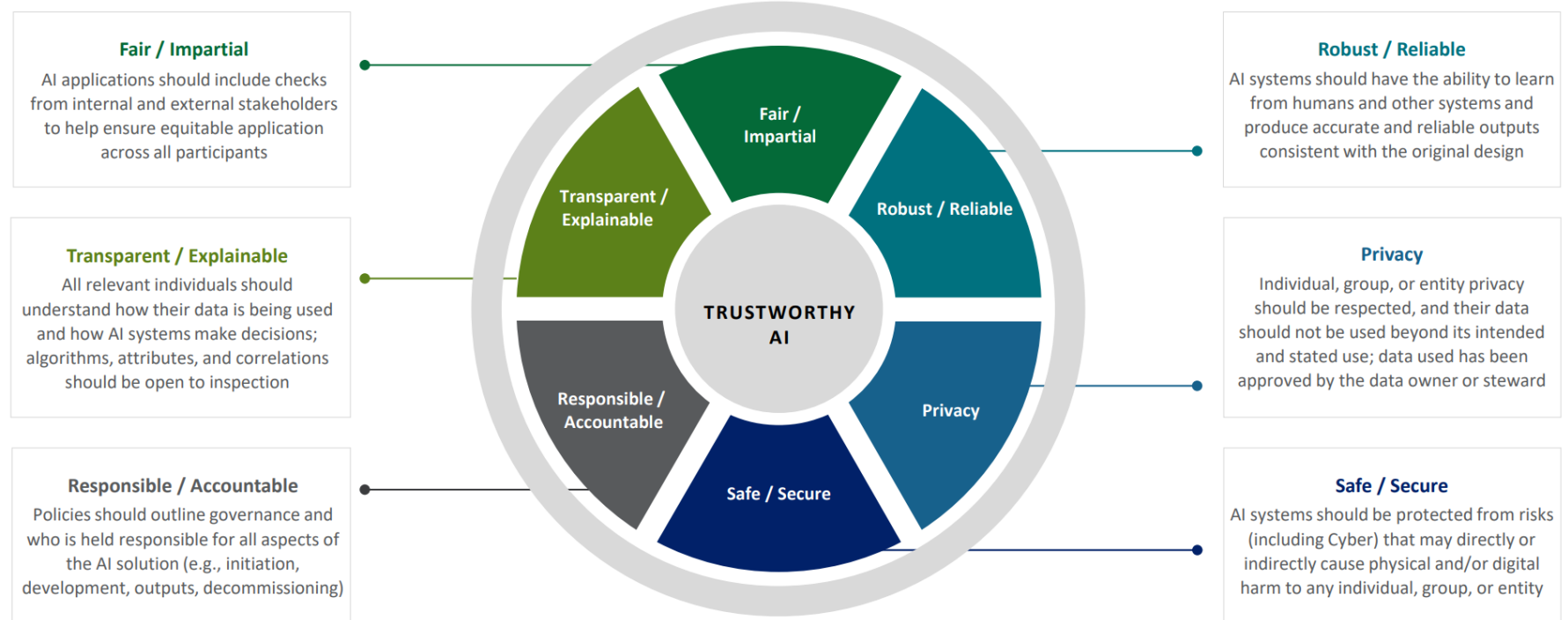


[Human Alternatives, Consideration, and Fallback](#)

<https://www.whitehouse.gov/ostp/ai-bill-of-rights/>

Overview of TAI Principles ¹²

By applying these six TAI principles across all phases of an AI project, OpDivs and StaffDivs can promote ethical AI and achieve the full operational and strategic benefits of AI solutions.



TAI principles are not mutually exclusive, and tradeoffs often exist when applying them.

NIST 2nd Draft - AI Risk Management Framework

NIST

Information Technology Laboratory

AI RISK MANAGEMENT FRAMEWORK

Existing privacy, computer security, and data security frameworks and guidance are unable to:

- adequately manage the problem of bias in AI systems;
- comprehensively address security concerns related to evasion, model extraction, membership inference, or other machine learning attacks;
- address the complex attack surface of AI systems or other security abuses enabled by AI systems; and
- address risks associated with third-party AI technologies, transfer learning, and off-label use, where AI systems may be trained for decision-making outside an organization's security controls or trained in one domain and then "fine-tuned" for another.

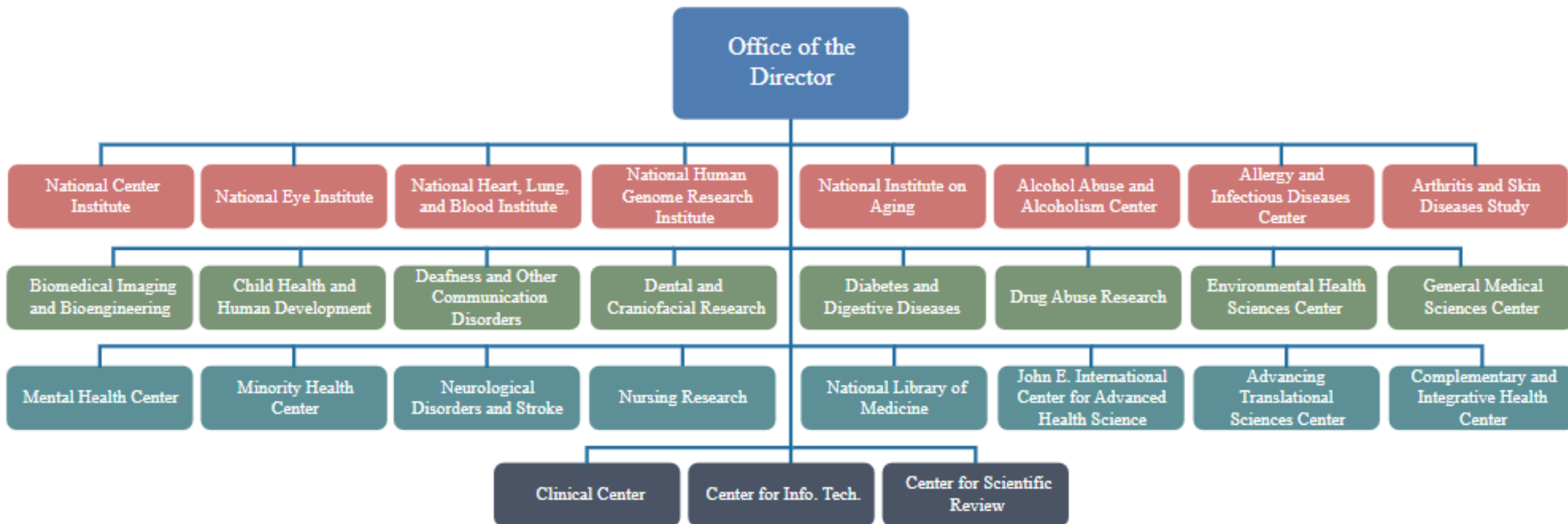
Compared to traditional software, AI-specific risks that are new or increased include:

- "Oracle problem" - data may not be a true or appropriate representation of the context or intended use of the AI system. Additionally, bias and other data quality issues can affect AI system trustworthiness.
- Datasets used to train AI systems may become detached from their original and intended context, or may become stale or outdated relative to deployment context.
- AI system scale and complexity
- Use of pre-trained models
- Higher degree of difficulty in predicting failure modes for emergent properties of large-scale pre-trained models.
- Increased opacity and concerns about reproducibility.
- Underdeveloped software testing standards.

<https://www.nist.gov/itl/ai-risk-management-framework>

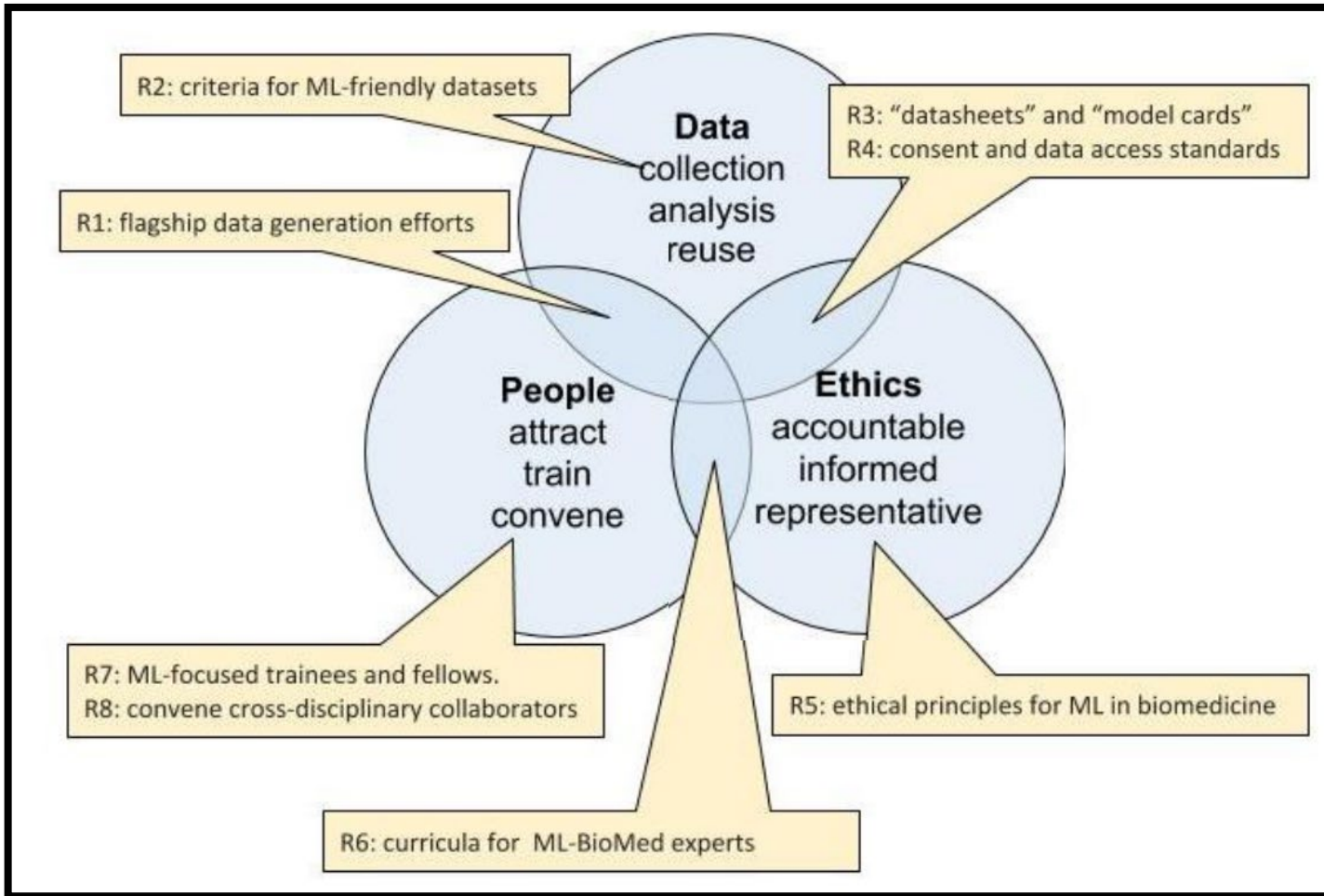
National Institutes of Health Institutes, Centers, and Offices

National Institute of Health (NIH) Org Chart



Biomedical AI: Visions for an **ETHICAL** Future

NIH ACD AI Working Group Recommendations:



- Outlined opportunities to fuse AI/ML with exponential increase in biomedical data
- Ethics was identified as equally important to Data and People, reflecting the primary importance of infusing ethical thinking into AI/ML use in biomedical research

NIH Strategic Plan for Data Science

VISION:
**A modernized, integrated, FAIR,
biomedical data ecosystem**

NIH STRATEGIC PLAN FOR DATA SCIENCE

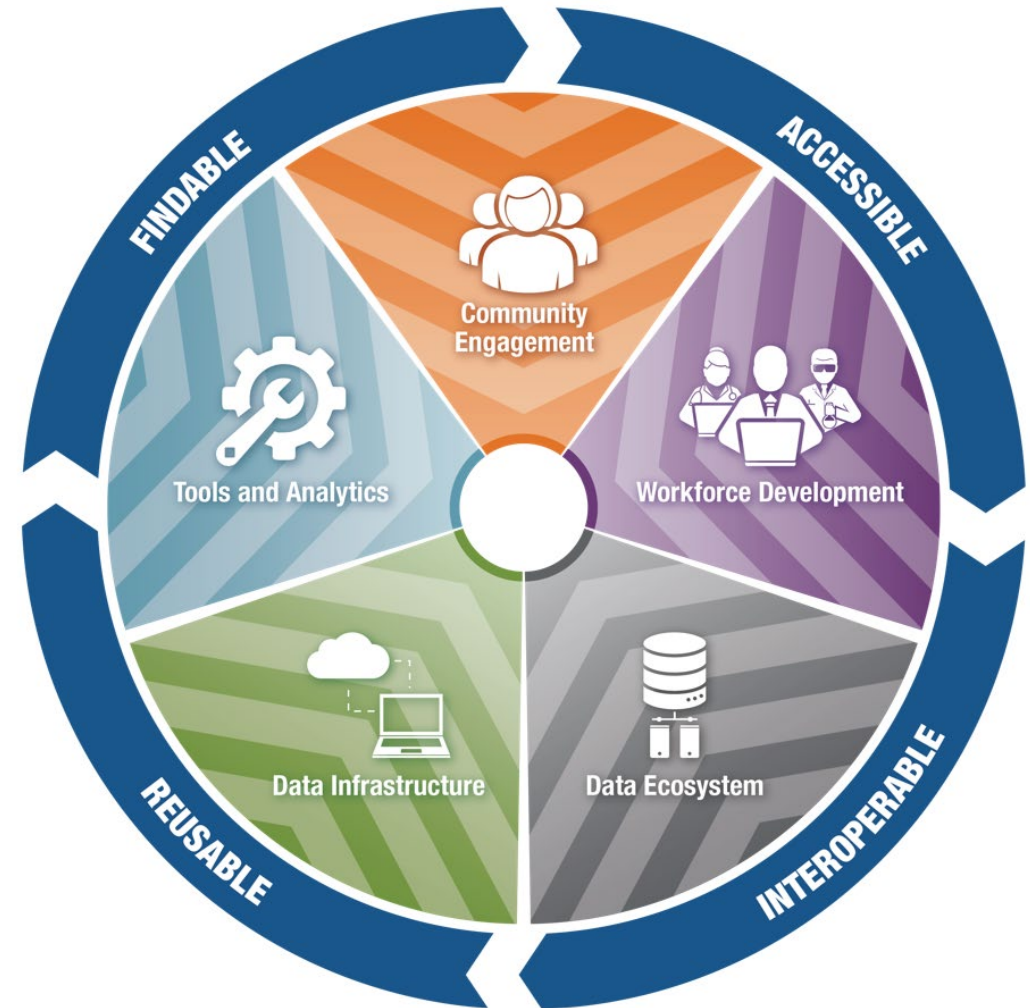
Introduction

As articulated in the National Institutes of Health (NIH)-Wide Strategic Plan¹ and the Department of Health and Human Services (HHS) Strategic Plan,² our nation and the world stand at a unique moment of opportunity in biomedical research, and data science is an integral contributor. Understanding basic biological mechanisms through NIH-funded research depends upon vast amounts of data and has propelled biomedicine into the sphere of "Big Data" along with other sectors of the national and global economies. Reflecting today's highly integrated biomedical research landscape, NIH defines data science as "the interdisciplinary field of inquiry in which quantitative and analytical approaches, processes, and systems are developed and used to extract knowledge and insights from increasingly large and/or complex sets of data."

NIH supports the generation and analysis of substantial quantities of biomedical research data (see, for example, text box "Big Data from the Resolution Revolution³"), including numerous quantitative and qualitative datasets emanating from fundamental research using model organisms (such as mice, fruit flies, and zebrafish), clinical studies (including medical images), and observational and epidemiological studies (including data from electronic health records and wearable devices).

Big Data from the Resolution Revolution
One of the revolutionary advances in microscope, detectors, and algorithms, cryogenic electron microscopy (cryoEM) has become one of the areas of science (along with astronomy, collider data, and

Metadata, "data about data," provides



<https://datascience.nih.gov/>

AI



Learn About Artificial Intelligence at NIH

<https://datascience.nih.gov/>

AI



Data Infrastructure



Data Ecosystem



Tools and Analytics



Community Engagement



Workforce Development



Learn About Artificial Intelligence at NIH



**Artificial
Intelligence/Machine
Learning Consortium
to Advance Health
Equity and Researcher
Diversity (AIM-AHEAD)**

<https://datascience.nih.gov/artificial-intelligence/aim-ahead>



**Bridge to
Artificial
Intelligence
(Bridge2AI)**

<https://www.commonfund.nih.gov/bridge2ai>

<https://datascience.nih.gov/>

Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity (AIM-AHEAD)



Partnerships

Research

Infrastructure

Training

Goals:

- to enhance the **participation** and **representation** of researchers and communities currently underrepresented in the development of artificial intelligence and machine learning (AI/ML) models
- to address health disparities and inequities using AI/ML
- to improve the capabilities of this emerging technology, beginning with the use of electronic health record (EHR) and extending to other diverse data

<https://aim-ahead.net/>

<https://datascience.nih.gov/artificial-intelligence/aim-ahead>

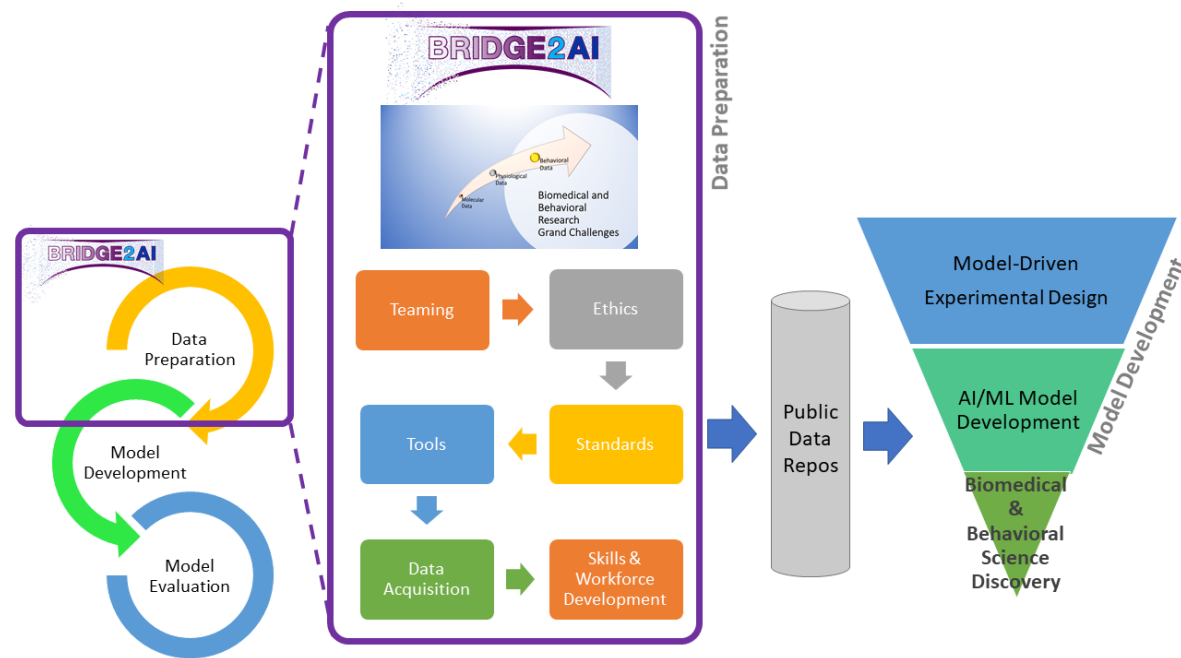
AIM-AHEAD Accomplishments

- 22 [Research Fellowships](#) awarded in 2022, engaging early-career researchers from under-represented populations in biomedical research that involves the use of AI/ML methodologies on Electronic Health Record Data.
- 25 [Leadership Fellowships](#) awarded in 2022, preparing a diverse leaders to champion the use of AI/ML in addressing persistent health disparities
- 22 **[Pilot research projects](#)** awarded in 2022, to test new paradigms of research, data analysis, and the new ways for underrepresented groups to derive value from their own health data.
- [AIM-AHEAD connect](#) platform launched as virtual hub for research at the intersection of AI/ML and health equity.
- Numerous [webinars](#) and symposia, including AI for Health Equity ([AIEHS 2022](#))

Bridge to AI

Bridge2AI program will :

- Generate **new flagship biomedical and behavioral data sets** that are ethically sourced, trustworthy, well-defined, and accessible
- Develop software and standards to unify data attributes across multiple data sources and across data types
- Create automated tools to accelerate the creation of FAIR (Findable, Accessible, Interoperable, and Reusable) and ethically sourced data sets
- Provide resources to disseminate data, ethical principles, tools, and best practices
- Create training materials and activities for workforce development that bridges the AI, biomedical, and behavioral research communities



AI



Data Infrastructure



Data Ecosystem



Tools and Analytics



Community Engagement



Workforce Development



Learn About Artificial Intelligence at NIH



Addressing the Workforce Gap in Data Governance for AI in Biomedicine

New investigators trained at the interface of information, AI, and biomedical sciences, ready to advance the field of data science for AI in biomedicine.

Ethics, Bias, and Transparency for People and Machines

Social and technical solutions for embedding ethics across the lifecycle of AI applications.



Improving the AI-readiness of Existing, IC-supported Data

Enhancing NIH data to be FAIR and AI-ready.

<https://datascience.nih.gov/artificial-intelligence/initiatives>

Training the Workforce to Make Data FAIR and AI/ML-Ready

Support Workforce Development at the Interface of Information Sciences, Artificial Intelligence and Machine Learning (AI/ML), and Biomedical Sciences (NOT-OD-21-079)

ODSS supported the development and implementation of curricular or training activities at the interface of information science, AI/ML, and biomedical sciences to develop the competencies and skills needed to make biomedical data FAIR and AI/ML-ready.

FY21: 23 Awards

- 5 IDeA States
- 4 Minority Serving Institutions
- 11 propose training on ethics of AI
- 8 with a diversity focus

Most common biomedical focus areas: cancer, environmental health, ophthalmology

Collaborations to Make Data FAIR and AI/ML Ready

NIH supported collaboration, bringing together expertise in biomedicine, data management, and artificial intelligence and machine learning (AI/ML) to make NIH-supported data AI-ready for AI/ML analytics.



FY21-FY22: 73 Awards

Most common biomedical focus areas:

Alzheimer's and Parkinson's disease, cardiovascular disease, cancer, and aging

Most common data types:

imaging, EHRs, -omics, microbes/pathogens, speech

**NHGRI | NIA | NIBIB | NIDA | NIDCD | NIDCR | NIEHS |
NIGMS | NIMH | NINDS | NCI | NLM | NIMHD | NIDDK |
NICHD | NIAID | NIAMS | NHLBI**

Advancing the Ethical Development and Use of AI/ML

New Activity in 2022: Advance the understanding, tools, metrics, and practices for the ethical development and use of AI/ML in biomedical and behavioral sciences.
(NOT-OD-22-065)

ODSS supported the generation of **new understanding, practices, tools, techniques, metrics, or resources that will aid *others*** in making ethical decisions throughout the development and use of AI/ML, which includes the collection and generation of data as well as the reuse of data and models by others.

23 Awards:

Most common focus areas: bias, community engagement, trust, explainability, equity.

Collaboratively Envisioning AI and Ethics in Biomedical Research

NIH hosted Microlabs and Innovation Lab

2022

Collaboratively Envisioning AI and Ethics in Biomedical Research

The NIH is interested in bringing together a diverse cross-section of scientists, social scientists, ethicists, advocates, legal scholars, communicators, and artists interested in the social implications of technology to

- **Forge new collaborations among these cross-disciplinary groups**
- **Identify important areas of consideration at the intersection of artificial intelligence (AI) and machine learning (ML), biomedicine, and ethics.**
- **Generate creative strategies to solve ethical dilemmas in biomedical AI/ML**

Collaboratively Envisioning AI and Ethics in Biomedical Research

Micro Lab #1

Dec 15th, 2021, 2-4pm ET

Who are the relevant stakeholders?

Micro Lab #2

Jan 12th, 2022, 2-4pm ET

What are the key opportunities, challenges, and themes?

Micro Lab #3

Jan 26th, 2022, 2-4pm ET

Organizing and understanding opportunity

Innovation Lab

March 14-18th, 10-5pm ET

A Data Ecosystems Approach to Ethical AI for Biomedical and Behavioral Research

ML3: Organizing and understanding opportunity

Activity: Deep dive breakout discussions

Towards a systems approach to ethics for the AI data ecosystem*	Robust assessment and control of AI products	Unifying the qualitative and quantitative for a more complete understanding of AI	Appropriately accounting for known determinants of health
Using intent for ethical AI	Learning from the Limits of AI	Creating ethical models when data are limited	Understanding what digital dignity means in the practice of AI
Scaling ethics to multi-stakeholder AI	Risk based approaches for mitigating social harm and enhancing social justice	AI as a tool for ethics research	Training for deep expertise, general competency, or the ability to translate
Ubiquitous AI	Cross walking disciplinary terminology and literacy	Understanding ethical considerations of Human-AI teaming in basic research	*So popular it was split into two breakouts

InnovationLab: A Data Ecosystems Approach to Ethical AI for Biomedical and Behavioral Research

Developing social and technical approaches to defining and implementing ethics across the AI data ecosystem

Creating a culture of ethical inquiry

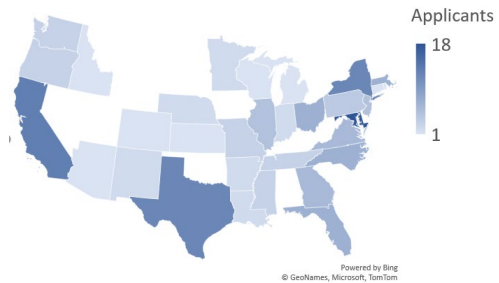
March 14-18, 2022 from 10:00 AM ET - 5 PM ET.
<https://apply.hub.ki/aiandethicsinnovationlab/>

Diversity of Innovation Lab Applicants and Attendees

Applicants: 170

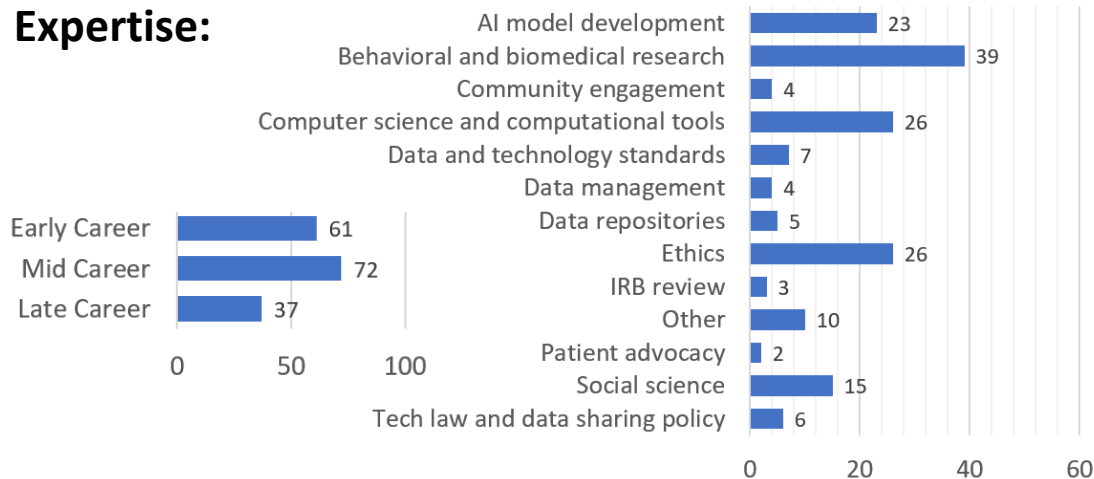
17% from MSIs. **21%** identify as a racial or ethnic group underrepresented in biomedical research.

Geographical Representation:



Hawaii - HI	2
Alaska - AK	1
Puerto Rico - PR	3
International (Belgium, Canada, India, Nigeria)	11

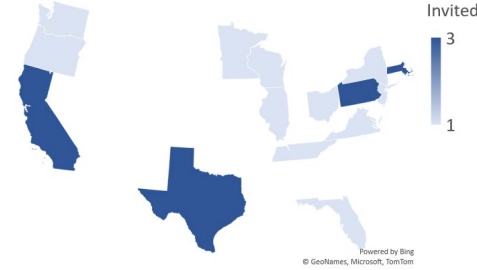
Expertise:



Invited: 31

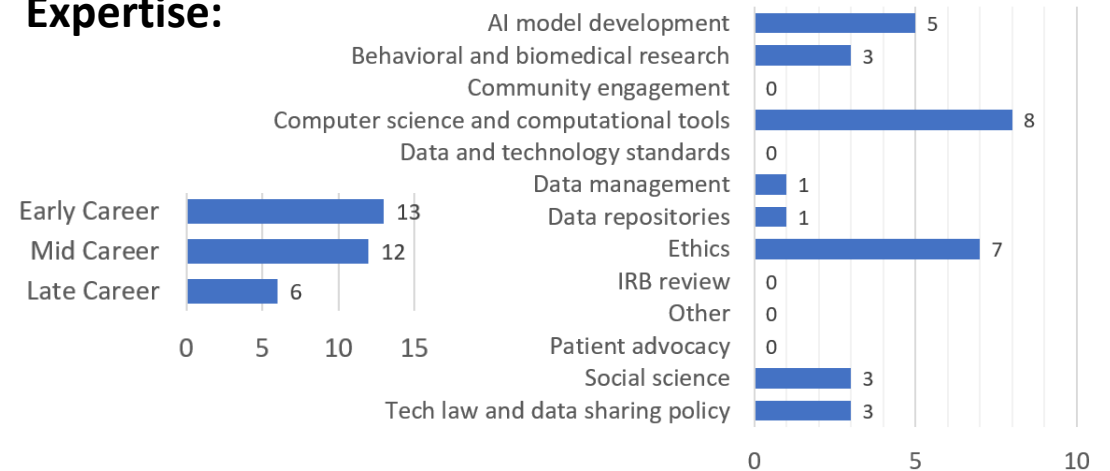
16% from MSIs. **21%** identify as a racial or ethnic group underrepresented in biomedical research.

Geographical Representation:



Alaska - AK	1
Puerto Rico - PR	2
International (Belgium, Canada)	3

Expertise:



Innovation Lab Subject Guides



Kristofer Bouchard

PI and Group Lead
Computational
Biosciences Group
Lawrence Berkeley
National Laboratory



Mildred Cho

Associate Director
Stanford Center for
Biomedical Ethics
Stanford University



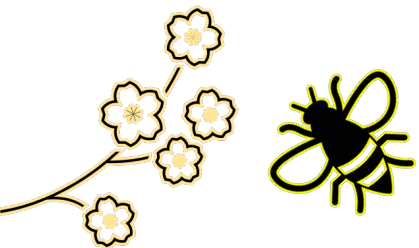
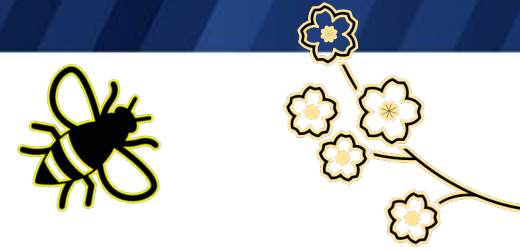
Beth Plale

Director
Data to Insight Center
University of Indiana



Katie Shilton

Associate Professor
and Lead
Ethics & Values in
Design (EViD) Lab
University of Maryland



A Data Ecosystems Approach



The social impact of AI depends on the context in which it's used. What types of knowledge are needed to apply AI ethically?

Does the connectivity of the ecosystem create its own ethical challenge?

Physicians create data and metadata for AI. What ethics apply to their role in data science?

What does beneficence mean for a search engine?
To whom is the developer responsible?

What does beneficence mean for a data repository?
What are potential harms?

Innovation Lab: Key Emergent Themes

- The need for and challenges associated with drafting an NIH framework for ethical AI/ML in biomedical/behavioral research.
- The need for and challenges of gathering and honoring input from community groups contributing to or affected by biomedical/behavioral research.
- The value of risk management and mitigation approaches for addressing ethical challenges.
- The need for novel governance structures to define and uphold ethical principles across the data ecosystem.
- The value of social research, namely ethnographic methods, to discover, uncover, and define the AI-data ecosystem supporting biomedical/behavioral research through studies of the behaviors of the participants in this ecosystem. These studies have the potential to integrate feedback from a currently siloed field of experts.

Summary of the Kickoff Meeting

U.S. Department of Health and Human Services (HHS)
National Institutes of Health (NIH)
Office of the Director (OD)
Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI)
Office of Data Science Strategy (ODSS)

Foundational Discussions in Artificial Intelligence–Readiness and Workforce Development: Joint Kickoff Meeting

November 1, 2, and 15, 2021
Virtual

Summary Report

Description

This series of three meetings, sponsored by the NIH Office of Data Science Strategy (ODSS), brought together recipient team members (i.e., awardees) of the Notice of Special Interest (NOSI) for Administrative Supplements for Workforce Development at the Interface of Information Sciences, Artificial Intelligence (AI) and Machine Learning (ML), and Biomedical Sciences (NOT-OD-21-079) and Administrative Supplements to Support Collaborations to Improve the AI/ML-Readiness of NIH-Supported Data (NOT-OD-21-094). Artificial intelligence and machine learning (AI/ML) are a collection of data-driven technologies with the potential to significantly advance biomedical research. Much of this potential is unrealized, however, because biomedical data are not collected and prepared in ways that

Thank you for your participation!

<https://datascience.nih.gov/sites/default/files/ODSS-FY21-AI-Readiness-Workforce-Dev-NOSI-November-2021-Executive-Summary-508.pdf>

Thank you



<https://datascience.nih.gov/>

Introduction to Lightning Talks

- What are Interactive Lightning Talks?
- You will be assigned to a parallel session at random
- Instructions for speakers:
 - Please share and drive your own slides
 - There is a 5 min break between sessions

11:45 a.m. – 11:55 a.m. – Session A

- Room 1
 - Project: Building a Substance Use Data Commons for Public
 - Health Informatics
 - PI and Presenter: **Majid Afshar**
- Room 2
 - Project: A Computational Pipeline to Evaluate AI/ML
 - Readiness in Digital Datasets in the Framingham Heart Study
 - Presenter: **Vijaya Kolachalama**
 - PI: Lindsay Farrer
- Room 3
 - Project: An AI-Ready Vascular Model Repository for
 - Modeling and Simulation in Cardiovascular Disease
 - Presenter: **Luca Pegolotti**
 - PI: Alison Marsden
- Room 4
 - Project: Enabling the AI/ML-Readiness of Massive Single-Cell
 - Data for Discovering RNA Regulatory Biology
 - PI and Presenter: **Julia Salzman**
- Room 5
 - Project: Addressing Class Imbalance and Missingness in the
 - PROTECT Database
 - Presenter: **David Kaeli**
 - PI: Akram Alshawabkeh
- Room 6
 - Project: De-identified Delirium Data: Finding Delirium to Study Delirium
 - PI and Presenter: **Richard Kennedy**

12:00 p.m. – 12:10 p.m. – Session B

- Room 1
 - Project: Using Machine Learning and Artificial Intelligence Models to Predict Muscle Stem Cell Biological Age and Regenerative Potential
 - PI and Presenter: **Fabrisia Ambrosio**
- Room 2
 - Project: Precision Care After Cardiac Arrest
 - PI and Presenter : **Karen Hirsch**
- Room 3
 - Project: Democratizing Machine Learning for Researchers
 - Working in Alzheimer's Space
 - Presenter: **Benjamin Goudey**
 - PI: Colin Masters
- Room 4
 - Project: Improving AI/ML-Readiness of Data Generated Under the R01:Protein Signatures of APOE2 and Cognitive Aging
 - Presenter: **Paola Sebastiani or Ofer Mendelevitch**
 - PI: Paola Sebastiani
- Room 5
 - Development and Use of an AI/ML-Ready Dog Aging Project Dataset
 - Presenter: **Matt Dunbar**
 - PI: Daniel Edward Promislow

12:15 p.m. – 12:25 p.m. – Session C

- Room 1
 - Project: Towards Automatic Transcription of Post-Stroke Disordered Speech
 - PI and Presenter: **Steven Bedrick**
- Room 2
 - Project: Cross-Modality Imaging Data Annotations for Deep Learning-Based Analysis Solutions in the Auditory Field
 - Presenter: **Chris Buswinka**
 - PI: Artur Indzhykulian
- Room 3
 - Project: PERCEPT: A Database of Clinical Child Speech for Automatic Speech Recognition and Classification
 - PI and Presenter : **Tara McAllister**
- Room 4
 - Project: Model Organism Neural Circuit Knowledge Graph
 - Presenter: **Paul Sternberg or Sharan Prakash**
 - PI: Paul Sternberg
- Room 5
 - Project: Agent-Based Participation of Machine Learning
 - Models in a Crowdsourcing System
 - Presenter: **Pietro Michelucci**
 - PI: Chris B. Schaffer

12:30 p.m. – 12:40 p.m. – Session D

- Room 1
 - Project: Using Artificial Intelligence for Alzheimer's Disease Drug Repurposing
 - PI and Presenter: **Feixiong Cheng**
- Room 2
 - Project: Developing AI/ML-Ready Aging Trajectory Files
 - PI and Presenter : **Olga Jarrin Montaner**
- Room 3
 - Project: Harnessing Multimodal Data To Enhance Machine Learning of Children's Vocalizations
 - Presenter : **Lynn Perry**
 - PI : Daniel Messinger
- Room 4
 - Project: Detecting Speech Articulation Patterns Following Laryngeal Cancer Treatment Using Artificial Intelligence and Machine Learning
 - Presenter: **Jun Wang or Nordine Sebkh**
 - PI: Jun Wang
- Room 5
 - Project: Rescuing Missed Longitudinal MRI Scans in the UNC Early Brain Development Study
 - Presenter: **Martin Styner**
 - PI: John Gilmore

12:45 p.m. – 12:55 p.m. – Session E

- Room 1
 - Project: A Novel Dataset for Speech Analysis in Serious
 - Mental Illness (Parent Study: Social Cognitive Biases and Suicide in Psychotic Disorders)
 - PI and Presenter: **Colin Depp**
- Room 2
 - Project: Improving AI/ML-Readiness of Data Generated from HABLE or Other NIH-Funded Research
 - Presenter: **Fan Zhang**
 - PI: Sid O'Bryant
- Room 3
 - Project: Machine Learning Development Environment for Single-Cell Sequencing Data Analyses
 - PI and Presenter : **Dong Xu**
- Room 4
 - Project: Improving AI/ML-Readiness of FaceBase Research Datasets
 - Presenter: **Rob Schuler**
 - PI: Carl Kesselman
- Room 5
 - Project: Making data from the center for GWAS in outbred rats FAIR and AI/ML ready
 - PI and Presenter: **Abraham Palmer**

1:00 p.m. – 1:10 p.m. – Session F

- Room 1
 - Project: AI/ML-Readiness for Neuroimaging of Language
 - PI and Presenter: **Rutvik Desai**
- Room 2
 - Project: Machine Learning-enabled Comparative Transcriptomic Profiling to Validate Nanoscript-Induced Inner Ear Hair Cells
 - Presenter: **Brandon Conklin**
 - PI: Kibum Lee
- Room 3
 - Project: Multi-omic Human Brain Immune Cell (HBIC) Resources for AI/ML Applications
 - Presenter: **Donghoon Lee**
 - PI and Presenter : Panagiotis Roussos
- Room 4
 - Project: Fair Risk Predictions for Underrepresented Populations Using Electronic Health Records
 - PI and Presenter : **Judy Zhong**
- Room 5
 - Project: Extending the QCArchive Small Molecule Quantum Chemistry Archive To Support Machine Learning Applications in Biomolecular Modeling
 - Presenter: **John Chodera**
 - PI: Michael Shirts
- Room 6
 - Project: Machine Learning to Identify Sepsis Phenotypes at Risk for Infections Caused by Multidrug Resistant Gram-Negative bacilli: Evaluating the Relevance of Unstructured Data and Data Engineering Tools
 - PI and PRESENTER: **Maria Cristina Vazquez Guillamet**



BREAK

1:10 p.m. – 1:20 p.m.

Instruction for Breakout Discussions

Breakout Discussion Instructions

- **You have a total of 60 mins – until 2:30pm ET**
- **Take just a few minutes for brief, "one-breath" introductions.**
- **Designate one member of the group to give a ~5 min read out of key themes from this discussion in the next session**
- **Capture your thoughts in the google doc as much as possible. This document will stay open and can be referenced during the read-out**

Discussion Questions

- Considering your own project, and the projects you learned about in the lightning talks: What are some of the successes or highlights from this program?
- Considering your own project, and the projects you learned about in the lightning talks: What are some of the open challenges?
- What are the key challenges and opportunities for ethical, AI-ready data?
- What skills or expertise were critical to have in your team to make data AI-ready?
- What AI application do you anticipate using your data?
- What makes data AI-Ready?



BREAK

2:30 p.m. – 2:35 p.m.

Readout from Breakouts

2:35 p.m. – 3:05 p.m. Readout from Breakouts

- Recap: One volunteer from each group, share most interesting points of discussion from your breakout in **5 minute or less**

Open Conversation

Open Conversation

- Please join the SLIDO platform:
 - <https://app.sli.do/event/kGWSrKPxv1fWYGTDaC43mn>
 - Event Code: 1056100

Thank you!!!

Thank you!



Michael Spittel, Ph.D.
Health Scientist Administrator
Office of Data Science Strategy



Mark Dennis
Deputy Director,
Conference Services at The
Scientific Consulting Group,
Inc.

NIH-Wide working groups in AI-
Workforce and AI-Readiness



<https://www.scgcorp.com/odssaicloseout2022/>

Join us again tomorrow, Nov 1st!

We will be joined by recipients of the AI-Workforce supplements and ODSS leadership.