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Office of Data Science Strategy (ODSS)
FY24 ODSS AI Supplement Program PI Meeting
March 27 and 28, 2024
Virtual
Final Executive Summary

Introduction and Purpose

[FY24 ODSS AI Supplement Program PI Meeting](#), sponsored by the NIH Office of Data Science Strategy (ODSS), invited awardees of the three Notice of Special Interest (NOSI) for Administrative Supplement Programs of FY22 and FY23 for a two-day virtual meeting. The meeting closed out the FY22 AI-Ethics and AI-Readiness programs while kicking off the FY23 AI-Readiness program. The awardees and the titles of the funded projects can be found in the [Appendix A](#) Table.

List of programs whose awardees are invited include:

- [NOT-OD-22-065](#) – FY2022 Request for ODSS Funds to Advance the Ethical Development and Use of AI/ML in Biomedical and Behavioral Sciences (also known as [FY22 AI-Ethics program, 23 awards](#))
- [NOT-OD-22-067](#) – FY2022 Request for ODSS Funds to Support Collaborations to Improve the AI/ML Readiness of NIH-Supported Data (also known as [FY22 AI-Readiness program, 36 awards](#))
- [NOT-OD-23-082](#) – FY2023 Request for ODSS Funds to Support Collaborations to Improve the AI/ML Readiness of NIH-Supported Data (also known as [FY23 AI-Readiness program, 33 awards](#))

Artificial intelligence and machine learning (AI/ML) are a collection of data-driven technologies with the potential to significantly advance biomedical and behavior research. Much of this potential is unrealized, however, because biomedical data are not collected and prepared in ways that would allow them to be used efficiently and effectively by AI/ML applications. Some of the inherent characteristics of AI/ML, as well as its relative complexities when applied in the biomedical and behavioral sciences, have made it difficult for researchers to enhance the readiness of biomedical data and apply ethical principles in the development and use of AI/ML. The purposes of the [NOSI AI Administrative Supplements](#) were to 1) support collaborations that bring together expertise in biomedicine, data management, and AI/ML to improve the AI/ML-readiness of data generated from NIH-funded research and shared through repositories, knowledgebases or other data sharing resources (AI-Readiness Program); 2) support new collaborations to advance the ethical development and use of AI/ML in biomedical and behavioral research (AI-Ethics Program). These cohorts of NIH-funded investigators have laid the foundation to support the next wave of biomedical discovery empowered by AI. The purpose of the meeting was to foster the development of a cohesive NIH AI community by providing a platform for participants to exchange insights on their projects, celebrate accomplishments, discuss best practices, share lessons learned, and engage in collaborative discussions. It was also an opportunity for NIH to understand details and outcomes of the planned activities; learn about challenges in the training and research environment to build AI-ready data sets and associated tools; and better understand the available resources across the AI Readiness, AI Ethics and AI workforce training areas.

Brief Meeting Description

The meeting was organized by Laura Biven, Ph.D. (Lead, Integrated Infrastructure and Emerging Technologies, NIH ODSS) and Christine Cutillo, MMCi (Health Data Scientist for AI Ethics, NIH ODSS). More than 135 participants, including AI supplement program principal investigators (PIs), points of contact, recipient team members, ODSS staff and other representatives from co-sponsoring NIH institutes and centers (ICs) registered and attended the meeting. The two-day meeting [agenda](#) included a main session, eight breakout sessions, a [breakout report back session](#), [two Slido polls](#) and a closing session (see [Appendix C](#) for Agenda). Dr. Laura Biven gave the welcome remarks, followed by a main session consisting of two 30-min keynote presentations from ODSS (Dr. Susan Gregurick and Christine Cutillo). Seven breakout sessions featured sixty-three 10-min lightning talks describing the funded projects by awardees. The breakout session 5 on Day 2 divided the participants into Track A, B, and C to discuss barriers, challenges, opportunities, and future directions in harnessing AI for biomedical research, followed by a breakout report back session at the end of the meeting.

Summary of the Main Session

On March 27, 2024, Dr. Susan Gregurick (Associate Director for Data Science, NIH; Director, ODSS) gave a keynote presentation on NIH Data Science Strategic Plan Overview in the main session. Her talk recognized the positive impact of data science in advancing scientific discoveries and clinical care, as well as current challenges in data science. The NIH Data Science Strategic Plan sets the goal for data science in the next 5 years: 1) improve capabilities to sustain the NIH policy for data management and sharing; 2) develop programs to enhance human derived data for research; 3) provide new opportunities in software, computational methods, and artificial intelligence; 4) support for a federated biomedical research data infrastructure; and 5) strengthen a broad community in data science. Dr. Gregurick also talked about the Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (goals and implementation timeline), HHS AI Task Force, and NAIRR Pilot. Finally, she highlighted new opportunities in AI in biomedical science.

In the second keynote presentation, Christine Cutillo (Health Data Scientist for AI Ethics, NIH ODSS) provided a broad overview of ODSS AI activities and shared future vision. In recent years, ODSS has supported the training of the workforce to develop the competencies and skills needed to make biomedical data FAIR and AI/ML-ready ([NOT-OD-21-079](#), 23 awards in FY21), the generation of new understanding, practices, tools, techniques, metrics, or resources to advance the ethical development and use of the AI/ML ([NOT-OD-22-065](#), 23 awards in FY22), and the collaborations to make NIH-supported data AI-ready for AI/ML analytics ([NOT-OD-21-094](#), [NOT-OD-22-067](#), [NOT-OD-23-082](#), 107 awards in FY21-FY23). Speaking toward future vision, Ms. Cutillo highlighted a workshop that gathered community members to work [Toward an Ethical Framework for AI in Biomedical and Behavioral Research: Transparency for Data and Model Reuse](#). More specifically, the workshop aimed to begin the process toward: 1) identifying tools, capability gaps; 2) developing transparency guidelines for NIH awardees using, developing, or contributing to AI; 3) identifying trends in AI and transparency. Lastly, Ms. Cutillo shared the community feedback from the [2022 ODSS AI Supplement PI Meeting](#) and set the goal for this year's meeting — to foster development of cohesive AI community by uniting PI teams from ODSS AI Supplement programs.

Lightning Talks and Discussions

The meeting included time for the award teams to share their research projects in interactive lightning talks in the breakout sessions 1-4 and 6-8. Please refer to the meeting agenda in the appendix C for the titles of the lightning talks. The presentation slides are available through the meeting [website](#). During these lightning talks, awardees highlighted the successes of the AI Supplements in the context of their projects.

During breakout session 5, participants gathered into 3 tracks to discuss barriers, challenges, lessons, and future plans in AI for biomedical research. The tracks were moderated by Ms. Christine Cutillo (NIH/ODSS) and Dr. Jennifer Couch (NIH/NCI) for track A, Dr. Brad Bower (NIH/NIBIB) and Dr. Deborah Duran (NIH/NIMHD) for track B, and Dr. Haluk Resat (NIH/OD) and Dr. Tamara Litwin (NIH/OD) for track C. Participants discussed the same questions in each track and collectively took notes on provided google documents during their breakout discussion. The responses were then compiled by the moderators and shared with all the participants in a report back session after session 8.

Below are the four questions with summarized responses.

1. **AI Readiness - What did 'AI readiness' mean for you through your project work (defining characteristics)?**

- AI readiness means data variables are defined, accessible, compatible with analytical manipulation, shareable, etc. It means implementing metadata provenance capture.
- Generation of machine-readable files that can be easily read by machine learning tools (e.g., in PyTorch) along with information about inputs, outputs, de-identified demographic information, etc.
- Focuses on making data that is technically already accessible and findable so people who are not data scientists can take advantage of publicly available data.
- Method to obtain data from different sources and streamline them to reduce variability in nomenclature. Use of ontologies and semantics to make data human readable.
- Make available resources for AI model development and data acquisition - standardized models and data to be used universally.
- Ability to quantify data collection bias in community recruited patient cohorts.
- AI readiness is not static - a continuous process of data sharing.
- ***N.B., attendees were interested in cross-mapping with the NIH definition of 'AI Readiness'. As defined in the [AI Readiness NOSI](#):**
 - *'Some aspects of AI/ML-readiness are better understood than others. For example, data to be analyzed by AI/ML tools, such as PyTorch and TensorFlow, which are used to build and deploy AI/ML applications, must conform to specific data formats. The FAIR principles, through the use of data and metadata standards (ontologies, taxonomies, terminologies), facilitate combining data from different sources to support biomedical AI/ML applications.*
 - *Some other aspects of what is needed to make data AI/ML ready must be discovered through iterative and exploratory testing. These might include how to best represent information for a particular AI/ML use-case, how to correct for noise, and what level of specificity or uncertainty of labels is tolerable for a desired AI/ML application.*
 - *For many AI/ML applications, the training dataset must be sufficiently large to be considered AI/ML ready. Thus, readying these data for computation necessitates*

knowledge of big data management practices, for example how best to prepare data to be partitioned to enable computational feasibility.

- *Decentralized machine learning (sometimes referred to as Federated or distributed learning) is a paradigm of machine learning where a model is trained iteratively on data in multiple locations. This paradigm can facilitate the use of data that, for privacy or other reasons, cannot be aggregated or moved. Preparing data for decentralized ML requires harmonization and testing as well as capabilities for standardized access and, possibly, enhanced data and model governance to protect privacy.*
- *Furthermore, there are increasing expectations that AI/ML ready data be accompanied by documentation to include information about data provenance and bias to help researchers make more informed and ethical decisions about the selection of data and application of AI/ML-models. For example, imbalanced datasets can result in AI/ML algorithms that lead to biased clinical decisions and, potentially, a misalignment with NIH goals to improve minority health and reduce health disparities for marginalized populations. AI/ML-readiness should be guided by a concern for human and clinical impact and therefore requires attention to ethical, legal, and social implications of AI/ML including but not limited to (1) biases in datasets, algorithms, and applications; (2) issues related to identifiability and privacy; (3) impacts on disadvantaged or marginalized groups; (4) health disparities; and (5) unintended, adverse social, individual, and community consequences of research and development.'*

2. Transparency - what was the value of creating a datasheet/model card?

- Many participants are unaware of datasheets/model cards. Need training and education.
- Some participants didn't use datasheets but are mindful of metadata associated with the data as well as creating data processing pipelines that are well documented and reproducible.
- "Ethic washing" is a concern if a checklist becomes a rote task and the issues are not given further consideration (whether by the developer or users of the AI/ML tool).
- There are concerns regarding automation/validation of info (e.g., qualitative data/info difficult to reduce to automation).
- Challenges of synthetic data (e.g., synthetic data derived from EHR), not only in technical and validation but also issues around communicating when synthetic data has been used and what that means and whether it is/isn't human subjects.
- There is a lack of standards for metadata (even in existing data repositories). Lack of strict standards for researcher-contributed data sets leads to difficulty in processing submitted data.
- Some initial data sets may not know what to be transparent about the data in hand until applying into models. A bit of a chicken and egg problem.
- Ability to quantify data collection bias in community recruited patient cohorts.
- Transparency to developers is important but end user may have a different need.
- Product information labels that are consumer/end user facing rather than just researcher-facing.
- Model cards and similar tools help with versioning and make it easy to track the potential problems/debug.

- Standards need to be created by wider community, regarding what should be included, formatting, versioning, access methods, searchability, evaluation, and metadata).
- Hugging Face model card template provide standardized starting point for developing documentation of a model.
- Domain experts are helpful to know what to reveal – areas of transparency.
- ***N.B., attendees were interested in learning more about these types of documentation used to improve transparency of data and models (such as data sheets and model cards). Below are some helpful resources to learn more about these types of documentation and leverage in future work:**
 - Datasheets – metadata file gaining popularity, with many variants (e.g., datasheet, healthsheet, data card); generally includes a series sections to document motivation, composition, collection process, preprocessing, recommended uses, distribution, and maintenance for a dataset.
 - Datasheets for datasets, *Communications of the ACM*, 19 Nov 2021: <https://dl.acm.org/doi/10.1145/3458723>
 - Healthsheet: Development of a Transparency Artifact for Health Datasets, *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency*, June 2022: <https://dl.acm.org/doi/10.1145/3531146.3533239>
 - Data Cards: Purposeful and Transparent Dataset Documentation for Responsible AI, *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency*, June 2022: <https://dl.acm.org/doi/10.1145/3531146.3533231>
 - Model cards – a metadata file; generally includes a series of sections to document model details, intended use, factors, metrics, evaluation data, training data, quantitative analysis, ethical considerations, and caveats/recommendations for a model.
 - Model Cards for Model Reporting, *Proceedings of the Conference on Fairness, Accountability, and Transparency*, Jan 2019: <https://dl.acm.org/doi/10.1145/3287560.3287596>
 - Towards Generating Consumer Labels for Machine Learning Models, *2019 IEEE First International Conference on Cognitive Machine Intelligence*, Dec 2019: <https://ieeexplore.ieee.org/document/8998974>

3. AI Ethics – What ethical concerns arose during your project?

- Sampling bias issues:
 - Commonly encountered in the medical datasets.
 - Unbalanced under-represented population group distributions in the medical datasets.
- Work being done may be so specific so as to hurt generalization to other labs/questions. Gaining insights on ethics of synthetic data (and communicating about synthetic data)
- ‘Traps’ that exist in AI space – bystander & turf ‘traps’: i.e., “not my responsibility”.
- Streetlight effect – well-characterized areas are studied more.
- Scientists often underestimate the importance of avoiding AI/ML use for making diagnoses when embedded biases exist.

- Dangers of commercialization of AI and both lack of regulations but also pressure among developers to hasten their work leading to lack of rigor and oversight - because of that competition.
- No ethical concerns reusing data that is already out there. Assurance that data were de-identified was important.
- Students do not get bias training/awareness in their curriculums.
- Ethics training need to be updated to include AI (Current NIH trainings out of date, need something that's responsive to the pace of AI development, evolving landscape of AI ethics).
- Terminology, field evolving rapidly.
- AI alignment and safety of chatbot like interfaces.
- Using ChatGPT to fabricate data - being uncertain or having distrust in relying on findings from others and published work with AI.

4. *Lessons Learned – Are there training gaps? How can we improve inequities in biomedical-AI research?*

- The incentive to curate metadata and clean up data is not always strong. Need to better understand the limitations and biases in specific datasets.
- Need standards to tackle problems that are relevant to the disadvantaged populations.
- More trainings (RFAs) on data sharing, not just on which repositories are recommended, but also on metadata and associated codes that should be included within a dataset.
- Development of guidelines/best practices to support research communities to come together and develop metadata standards for different types of research and ensure broad community involvement.
- For NIH funding, use specific funding approaches that maintain the desired focus, audience, and broad access; have study sections with diverse expertise on methods and content areas; and review data-sharing plans with more rigor.
- More coordination and training to overcome disciplinary barriers, bridge gaps, facilitate in-person conversations, to support infrastructure, and to nurture Open Science.
- Make the training focus on data literacy and what AI-readiness means.
- Greater exposure/familiarity of building machine readable resources would help training programs.
- Emphasis on support for inter-disciplinary collaborative work to address ELSI issues in biomedical AI (and peer review needs to be focused on ELSI)
- Increase opportunities for cross-training and bi-directional learning (not trainees from one field in service to another).
- Multi-institutional collaboration to increase access to diverse and larger datasets.
- Have trained AI ethics experts on IRBs to assist with standardized guidelines or field questions - or bring in ethicists to the team.

Publications/Tools

Below is a consolidated list of publications and tools that were mentioned in award team lightning presentations as outputs from the work:

- **Tools/Resources**
 - Cancer Imaging Archive (TCIA): <https://www.cancerimagingarchive.net/>

- Tutorial notebooks on [California Teachers Study](#) (CTS – members of California State Teachers Retirement System providing information on health and behaviors for researchers since 1995) Github: <https://github.com/California-Teachers-Study/ai-ml-supplement>
- [curatedMetagenomicData](#)
- [cBioPortalData](#)
- [OmicsMLRepoR](#) package
- Platform for Evaluation and Acquisition of Clinical Kinematics (PEACK) framework: <https://github.com/shivak7/PEACK>
- The Digital Cancer Twin Podcast
 - [Introduction to the Digital Cancer Twin Project](#)
 - [AI, Military Funding, and the Digital Cancer Twin](#)
 - [Race Medicine, Data Justice, and an Ethics of Artificial Intelligence](#)
 - [The Role of the Humanities in AI and Medical Research](#)
- The Responsible Use of AI Podcast
 - [Indigenous Data Sovereignty and Data Justice in the Age of AI](#)
 - [Implications for Data Curation in the Age of AI](#)
 - [Who is \(Ac\)counted for in AI?](#)
- Symposium Towards Responsible Biomedical AI
 - View playlist of video recordings from the Symposium: <https://www.youtube.com/playlist?list=PLs5jqQzJBAysl6jD28bEbfyW35T1Mrckw>
- Cohort Allele Frequency Model
 - Developed from the GA4GH Variant Annotation Specification (draft standard): [CAF Schema](#)
 - Uses GA4GH Variation Representation Specification (approved standard; v1.3): [VRS Documentation](#)
 - [GnomAD Blog Post](#)
- High-Throughput Variant Translation Tools
 - Built a high-throughput VRS/VCF translation tool: [source code](#) (leverages SeqRepo and Bioutils from the Biocommons community)
- Variant Annotation Model & Python Toolkit
 - CAF model includes global standard profile for core data and resource-specific quality measures and ancillary results: [source code](#)
- glycoCARTA: Single-cell transcriptome of glycosylation
 - <http://vgdev.cedar.buffalo.edu/glycocarta/>
- glycoTF: Transcriptional factors of glycosylation
 - <http://vgdev.cedar.buffalo.edu/glycotf/>
- AI/ML readiness for wildfire exposure and health analysis
 - Climate types – raw source: Köppen-Geiger climate classification from Beck et al; Github repo: https://github.com/NSAPH-Data-Processing/climate_types_raster2polygon
 - Satellite PM_{2.5} – raw source: Atmospheric Composition Analysis Group V5.GL.04 model; Github repo: https://github.com/NSAPH-Data-Processing/satellite_pm25_raster2polygon
 - Census series – raw source: api.census.gov; Github repo: https://github.com/NSAPH-Data-Processing/us_census_time_series_generator; Dataverse doi:

- <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/N3IEXS>
- Gridmet – raw source: gridmet from climatology lab; Github repo: <https://github.com/NSAPH-Data-Platform/nsaph-gridmet>
 - Zip code smoke aggregations – raw source: <https://doi.org/10.7910/DVN/DJVMTV> from Childs et al; Github repo: https://github.com/NSAPH-Data-Processing/us_census_time_series_generator; Dataverse doi: <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/VHNJBD>
 - Zip2zcta x-year x-walk – raw source: UDS mapper; Github repo: https://github.com/NSAPH-Data-Processing/zip2zcta_master_xwalk; Dataverse doi: <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/HYNJSZ>
 - PM_{2.5} components – raw source: Atmospheric Composition Analysis Group V4.NA.03 model; Github repo: <https://github.com/NSAPH-Data-Platform/nsaph-gridmet>
- The Neuroscience Gateway (NSG) -- <http://www.nsgportal.org>; new tools added based on user needs; planning to add ~70 new neuroimaging software, tools, and pipelines
 - Neuro-integrative Connectivity (NIC) Tool – for improving AI readiness through provenance metadata
 - Development of an AI/ML-ready knee ultrasound dataset in a population-based cohort
 - Dataverse doi: <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/SKP9IB>
 - Human Islet Research Network (HIRN): Alternative Splicing Events, <https://data.pnnl.gov/group/nodes/dataset/33494>
 - Random Forest Model Card, https://data.pnnl.gov/sites/default/files/2024-04/HIRN_ASevent_IncLevel_modelcard_sv1.pdf
 - The Environmental Determinants of Diabetes in the Young (TEDDY) Targeted Proteomics Study Data, <https://data.pnnl.gov/group/nodes/dataset/33861>
 - CEDAR (Center for Expanded Data Annotation and Retrieval) Portable & Cloud-based solutions:
 - CEDAR Metadata Viewer within/available for: RADx Data Hub, HuBMAP, GREI, Open Science Framework web platform/app, Dryad
 - OData for sharing annotations
 - <http://websvc1.connectomes.utah.edu/RC1/OData/>
 - 4D Dataset
 - Available on TCIA: <https://www.cancerimagingarchive.net/>
 - Database title: Spine-Mets-CT-SEG; doi: <https://doi.org/10.7937/kh36-ds04>
 - Community of Practice on Social Determinant Data
 - <https://nyu-moi-dssd.squarespace.com/workinggroup>
 - Dartmouth Cystic Fibrosis Research Center (DartCF)
 - [RESPIRE Database](https://respire-database.org/)
 - Github: <https://github.com/DartCF>
 - dbCAN – software for CAZyme and gene cluster prediction in bacterial genomes
 - Web server <https://bcb.unl.edu/dbCAN2/>

- Python package https://github.com/linnabrown/run_dbcan
 - Machine learning models predict substrates for CGCs https://bcbl.unl.edu/dbCAN_seq/
- UF PRISMA, SDOH Toolkit
 - https://github.com/dchang56/chief_complaints
 - https://github.com/uf-hobi-informatics-lab/SDoH_SODA
- Pympute – web app, data imputation tool specifically for clinical data from EHR
- **Publications**
 - Zou, W. , Li, J. , Yang, Y., & Tang, L. (2023). Exploring the early adoption of Open AI among laypeople and technical professionals: An analysis of Twitter conversations on ChatGPT and GPT-3. International Journal of HumanComputer Interaction. DOI: [10.1080/10447318.2023.2295725](https://doi.org/10.1080/10447318.2023.2295725)
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 - Developing a Taxonomic Framework for Ethically Evaluating the Types of Biases Integral to Big Data EHR Studies: Oral Presentation at the 11th International Conference on Ethics in Biology, Engineering and Medicine, Seattle, WA, April 29th & 30th, 2023
 - Protocol Paper: Qiao, S., Khushf, G., Li, X., Zhang, J., & Olatosi, B. (2023). Developing an ethical framework-guided instrument for assessing bias in EHR-based Big Data studies: a research protocol. BMJ open, 13(8), e070870
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 - Z. Liu, Z. Li, J. C. Mhlanga, B. A. Siegel, A. K. Jha*, “No-gold-standard evaluation of quantitative imaging methods in the presence of correlated noise”, Proc. SPIE Med. Imag. 2022, PMID: [36465994](https://pubmed.ncbi.nlm.nih.gov/36465994/) (Robert F. Wagner Best Student Paper award)
 - P. Chrysinas, C. Chen, and R. Gunawan. CrossTx: Cross-cell-line transcriptomic signature predictions. Processes, 12:332, 2024.
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Slido Polls

Two Slido polls were conducted during the meeting, one at the beginning and one at the end of the meeting. The summaries of the Slido Polls are provided in [Appendix D](#).

Slido Poll questions on Day 1:

1. What award are you associated with?
2. What areas of expertise did you bring to your team?
3. What would you like to get out of this Virtual AI PI meeting?
4. Do you have experience w/ data sheets, health sheets, or similar documentation?
5. Data sheets, or similar documentation: experience type
6. Data sheets, or similar documentation: which aspects were most useful?
7. Do you have experience w/ model cards, or similar documentation?
8. Model cards, or similar documentation: experience type
9. Model cards, or similar documentation: which aspects were most useful?
10. What best practices did you use to test/validate efforts to mitigate biases in your project (e.g., in the data, processes)?

Slido Poll questions on Day 2:

1. How helpful was this Virtual AI PI meeting?
2. What did you learn that you'll apply forward in your work?
3. Anything else you'd like to let us know?

Key Take-Aways from the Meeting

The two-day meeting provided a platform for NIH AI community to highlight the success of AI supplement programs and engage in collaborative discussions. It was also an opportunity for NIH to better understand the opportunities, needs and challenges in AI readiness and in AI ethics development. Here are some key take-aways from the meeting:

- Many groups encountered challenges and surfaced gaps/needs in generating AI ready data:
 - Data harmonization – aggregating data / challenging data types / combining multimodal data
 - Disparate standards, formats, schema
 - Quantifying data collection bias
 - Missingness and balancing representation
 - Removing noise while preserving information from data
 - Comprehensive data dictionaries
 - AI readiness – can mean different things at different stages of the development pipeline
- Teams shared methods, reporting, and documentation around:
 - Models with incomplete data
 - Approaches for improving 'noisy' / 'dirty' / 'historical' data
 - Quantifying and improving representativeness
 - Challenges and strengths of synthetic data
 - Findability of and access to data/datasets
 - Reproducible pipelines for data processing, sharing, and making data FAIR
 - Appropriate metadata and provenance
 - Uncertainty quantification
 - Continual monitoring and validation
 - Measuring, identifying, and mitigating biases – metrics and tools
 - Ethical principles and approaches that evolve with the field, including alongside the needs/concerns of communities

- Teams shared their approaches toward ethical and responsible AI, and expounded on critical areas of need:
 - Privacy standards; reuse and consent limitations/concerns
 - Biases encountered at every stage of development
 - Gauging community perceptions for AI use in healthcare
 - Improving training in the ever-evolving landscape of AI and AI-ethics
 - Intersectional approaches are key
 - AI ethics experts on appropriate review panels (e.g., IRBs) and collaborative projects
 - Tracking issues relevant to disadvantaged populations – e.g., through SDOH – and focusing on improved approaches to these key challenges
 - Community engagement strategies and processes are key
 - Critical to understand and respect autonomy and needs of communities affected or targeted
 - Ethical and responsible AI requires commitment to evaluation – will change over time and requires many stakeholders
 - Further questions surrounding generative AI/LLMs
- Teams surfaced and discussed training needs in the AI space:
 - Culture change needed for inherently multidisciplinary space – need for support for cross-disciplinary work and supporting the next generation of researchers on this path
 - Collaboration gaps, spurring interdisciplinary collaborations
 - Enhanced workshops, trainings, etc. to teach researchers in quickly moving space – best practices, current state, leading edge of AI/AI Readiness/AI Ethics
 - Access to compute and data infrastructure is challenging and expensive

Appendix A: List of Awardees

NOT-OD-22-065 – FY22

PI Name	Project Title
Finkbeiner, Steven M	Cell and Network Disruptions and Associated Pathogenesis in Tauopathy and Down Syndrome
Federman, Alex D	Natural Language Processing and Automated Speech Recognition to Identify Older Adults with Cognitive Impairment
Jiang, Xiaoqian	Finding combinatorial drug repositioning therapy for Alzheimers disease and related dementias
Zeng, Qing	Physical Fitness as an Objective Biomarker for AD/ADRD Risk Modification
Zhi, Degui	Genetics of deep-learning-derived neuroimaging endophenotypes for Alzheimers Disease
Olatosi, Bankole	Patterns and predictors of viral suppression: A Big Data approach
Do, Richard Kinh Gian	Development and Validation of Prognostic Radiomic Markers of Response and Recurrence for Patients with Colorectal Liver Metastases
Goldstein, Benjamin Alan	Predictive Analytics in Hemodialysis: Enabling Precision Care for Patient with ESKD
Bui, Alex	PREMIERE: A PREDictive Model Index and Exchange REpository
Platt, Jody Elizabeth	Public trust of artificial intelligence in the precision CDS health ecosystem
Jha, Abhinav K	A no-gold-standard framework to objectively evaluate quantitative imaging methods with patient data
Holder, Andre L	Characterizing patients at risk for sepsis through Big Data
Kamaleswaran, Rishikesan	Sepsis Physiometers for Appropriate Risk Knowledge of monitored patients in the ICU (SPARK-ICU)
Sabatello, Maya	Disability, diversity and trust in precision medicine research: stakeholdersengagement
Ohno-Machado, Lucila	Genetic & Social Determinants of Health: Center for Admixture Science and Technology
Langlotz, Curtis P	Population-level Pulmonary Embolism Outcome Prediction with Imaging and Clinical Data: A Multi-Center Study
Wolf, Risa Michelle	Autonomous AI to mitigate disparities for diabetic retinopathy screening in youth during and after COVID-19
Sjoding, Michael William	Human-AI Collaborations to Improve Accuracy and Mitigate Bias in Acute Dyspnea Diagnosis
Odero-Marah, Valerie	RCMI@Morgan: Center for Urban Health Disparities Research and Innovation
Herrington, John David	Optimized Affective Computing Measures of Social Processes and Negative Valence in Youth Psychopathology
Naidech, Andrew M	Hemostasis, Hematoma Expansion, and Outcomes After Intracerebral Hemorrhage
Wun, Theodore	UC Davis Clinical and Translational Science Center
Disis, Mary L.	Institute of Translational Health Sciences

NOT-OD-22-067 - FY22

PI Name	Project Title
Schaefer, Andrew J	Administrative Supplement to Support Collaborations to Improve AIML-Readiness of NIH-Supported Data for Parent Award SCH: Personalized Rescheduling of Adaptive Radiation Therapy for Head & Neck Cancer
Lacey, James V	A More Perfect Union: Leveraging Clinically Deployed Models and Cancer Epidemiology Cohort Data to Improve AI/ML Readiness of NIH-Supported Population Sciences Resources
Sung, Kyung Hyun	A structured multi-scale dataset with prostate MRI for AI/ML research
Bertagnolli, Monica M.	A-STOR Cancer Clinical Trial Artificial Intelligence & Machine Learning Readiness
Waldron, Levi David	Cancer Genomics: Integrative and Scalable Solutions in R/Bioconductor
Jones, Bryan William	Retinal Circuitry
Wagner, Alex Handler	Development and validation of a computable knowledge framework for genomic medicine

Bateman, Alex	UniProt - Protein sequence and function embeddings for AI/Machine Learning readiness
Stanton, Bruce A.	Retrieval, Reprocessing, Normalization and Sharing of Gene Expression and Lung Microbiome Data Sets to Facilitate AI/ML Analysis Studies of Bacterial Lung Infections
Mcneil, Rebecca Boehm	Continuation of the NuMoM2b Heart Health Study
Neelamegham, Sriram	Application of machine/deep-learning to the systems biology of glycosylation
Terskikh, Alexey V	Novel Strategy to Quantitate Delayed Aging by Caloric Restriction
Casey, Joan A	Approaches for AI/ML Readiness for Wildfire Exposures
Levey, Allan I	Piloting a web-based neuropathology image resource for the ADRC community
Ellisman, Mark H	3D Reconstruction and Analysis of Alzheimers Patient Biopsy Samples to Map and Quantify Hallmarks of Pathogenesis and Vulnerability
Rhee, Kyu Y	Towards AI/ML-enabled molecular epidemiology of Mycobacterium tuberculosis
Nelson, Amanda E	Development of an AI/ML-ready knee ultrasound dataset in a population-based cohort
Alkalay, Ron N	Curating musculoskeletal CT data to enable the development of AI/ML approaches for analysis of clinical CT in patients with metastatic spinal disease
Hsieh, Evelyn	Use of Optical Character Recognition (OCR) to Enable AI/ML-Readiness of Data from Dual-Energy X-ray Absorptiometry (DXA) Images
Krening, Samantha	An automated AI/ML platform for multi-researcher collaborations for a NIH BACPAC funded Spine Phenome Project
Majumdar, Amitava	Neuroscience Gateway to Enable Dissemination of Computational And Data Processing Tools And Software.
Friel, Kathleen Margaret	Targeted transcranial direct current stimulation combined with bimanual training for children with cerebral palsy
Bhatt, Tanvi	Perturbation training for enhancing stability and limb support control for fall-risk reduction among stroke survivors
Adams, Meredith C. B.	Wake Forest IMPOWR Dissemination Education and Coordination Center (IDEA-CC)
Fuller, Clifton David	Development of functional magnetic resonance imaging-guided adaptive radiotherapy for head and neck cancer patients using novel MR-Linac device
Liang, Rongguang	Improving AI/ML-Readiness of data generated from NIH-funded research on oral cancer screening
Mirmira, Raghavendra G	The Integrated Stress Response in Human Islets During Early T1D
Kane-Gill, Sandra L	(MEND-AKI) Multicenter Implementation of an Electronic Decision Support System for Drug-associated AKI
Linden, David R.	Neurobiology of Intrinsic Primary Afferent Neurons
Yin, Yanbin	Carbohydrate enzyme gene clusters in human gut microbiome
Mellins, Claude Ann	Pathways to successful aging among perinatally HIV-infected and exposed young adults: Risk, resilience, and the role of perinatal HIV infection
Grundberg, Elin	Contextualizing and Addressing Population-Level Bias in Social Epigenomics Study of Asthma in Childhood
Devinsky, Orrin	Machine learning approaches for improving EEG data utility in SUDEP research
Vonder Haar, Cole	Dopamine modulation for the treatment of chronic dysfunction due to traumatic brain injury
Musen, Mark A	Improved metadata authoring to enhance AI/ML readiness of associated datasets
Chen, Shigang	SCH: Enabling Data Outsourcing and Sharing for AI-powered Parkinsons Research

NOT-OD-23-082 – FY23

PI Name	Project Title
Ali, Amina Abubakar	Improving Ai/ML-Readiness Of Synthetic Data In A Resource-Constrained Setting
Arnaout, Rima	Enriching Nih Imaging Datasets To Prepare Them For Machine Learning
Awad, Issam A	Biomarkers Of Cerebral Cavernous Angioma With Symptomatic Hemorrhage (Cash) - Supplemental
Bell, Michelle L	Containerizing Tasks To Ensure Robust Ai/ML Data Curation Pipelines To Estimate Environmental Disparities In The Rural South
Bletz, Julie A [Now Jineta Banerjee]	Assuring Ai/ML-Readiness Of Digital Pathology In Diverse Existing And Emerging Multi-Omic Datasets Through Quality Control Workflows

Chichom, Alain Mefire	Harnessing Data Science To Promote Equity In Injury And Surgery For Africa
Chinchilli, Vernon M	Data Coordinating Center For The Type 1 Diabetes In Acute Pancreatitis Consortium
Chiu, Yu-Chiao	Enhancing Ai-Readiness Of Multi-Omics Data For Cancer Pharmacogenomics
Choi, Sung Won	Patient-Oriented Research And Mentoring In Hematopoietic Cell Transplantation Supplement
Chunara, Rumi	Nyu-Moi Data Science For Social Determinants Training Program
Cook, Diane Joyce	Crowdsourcing Labels And Explanations To Build More Robust, Explainable Ai/ML Activity Models
Ding, Mingzhou	Acquisition, Extinction, And Recall Of Attention Biases To Threat: Computational Modeling And Multimodal Brain Imaging
Erickson, Loren D	Ige Antibody Responses To The Oligosaccharide Galactose-Alpha-1,3-Galactose (Alpha-Gal) In Murine And Human Atherosclerosis
Fried-Oken, Melanie	An Ai/ML-Ready Closed Loop Bci Simulation Framework
Guo, Jingchuan	Supplement Of Niddk R01 Newer Glds And Clinical Outcomes
Hirsch, Karen G	Precision Care In Cardiac Arrest - Icecap (Precicecap)
Hsu, William	An Ai/ML-Ready Dataset For Investigating The Effect Of Variations In Ct Acquisition And Reconstruction
Im, Hyungsoon	Development Of Plasmon-Enhanced Biosensing For Multiplexed Profiling Of Extracellular Vesicles
Larson, Mary Jo	Trajectories Of Non-Pharmacologic And Opioid Health Services For Pain Management In Association With Military Readiness And Health Status Outcomes: Supic Renewal
Maccarini, Paolo Francesco	Development Of Ai/ML-Ready Shared Repository For Parametric Multiphysics Modeling Datasets: Standardization For Predictive Modeling Of Selective Brain Cooling After Traumatic Injury
Mokuau, Noreen	Processing Multiomic Datasets For Improved Ai/ML-Readiness In Congenital Heart Disease Research
Nguyen, Thu	Risk And Strength: Determining The Impact Of Area-Level Racial Bias And Protective Factors On Birth Outcomes
Ordovas, Jose M.	Social Stressors, Epigenetics And Health Status In Underrepresented Minorities
Panageas, Katherine S	Matches: Making Telehealth Delivery Of Cancer Care At Home Effective And Safe - Addressing Missing Data In The Matches Study To Improve ML/Ai Readiness
Payne, Samuel H	Creating Ai/ML-Ready Data For Single Cell Proteomics
Rehm, Heidi L	Clingen Ai Data Delivery Supplement
Sette, Alessandro	The Cancer Epitope Database And Analysis Resource
Sheffield, Nathan	Novel Methods For Large-Scale Genomic Interval Comparison
Tempany, Clare M	Generation And Dissemination Of Enhanced Ai/ML-Ready Prostate Cancer Imaging Datasets For Public Use
Ulrich, Cornelia M	Harmonizing Genomic, Transcriptomic, And Drug Response Data Across Pre-Clinical Models Of Cancer To Support Machine Learning Approaches For Personalized Cancer Therapy Selection
Wolmark, Norman	Nrg Oncology Network Group Operations Center
Zhang, Wei	Developing Unbiased Ai/Deep Learning Pipelines To Strengthen Lung Cancer Health Disparities Research
Zhao, Zhongming	Transforming Dbgap Genetic And Genomic Data To Fair-Ready By Artificial Intelligence And Machine Learning Algorithms

Appendix B: Meeting Participants

Office of Data Science Strategy (ODSS)

Dr. Susan Gregurick, Ph.D. Director, ODSS

Dr. Laura Biven, Ph.D. Lead, Integrated Infrastructure and Emerging Technologies

Ms. Christine Cutillo, AI Ethics, ODSS

Ms. Valerie Cotton, Deputy Director, NICHD, ODSS

Co-Sponsoring NIH Institutes and Centers/Federal Observers/Invited Guests

Dr. Deborah Duran, NIMHD

Dr. Jennifer Couch, NIH

Dr. Brad Bower, NIH

Dr. Resat Haluk, Program Leader, OSC, NIH

Dr. Tamara Litwin, NIH

Dr. Chris Kinsinger, Assistant Director for Catalytic Data Resources, NIH
Dr. Tamara Litwin, All of Us Research Program, Epidemiologist, NIH
Dr. Asif Rizwan, Program Director, NIH
Dr. Ralph Nitkin, Program Officer, NIH
Dr. Tara Dutka, Program Director, NIH
Dr. Theresa Patten, AAAS Science and Tech Policy Fellow, NIH
Dr. Travis Hoppe, Assistant Director of AI R&D, EOP/OSTP
Mr. Stephen Peter Wong
Mr. Geoffrey Siwo
Dr. Terez Shea-Donohue, Program Director, NIDDK
Dr. Deborah Duran, Sr. Adv Data Science, NIMHD
Dr. Rhonda Moore, Program Director, NIH
Ms. Kathryn Marcon, Mount Sinai Hospital
Mr. Andrew White, Industry Contracts, UCSF

Award Recipient Attendees, grouped by team:

FY2022 Request for ODSS Funds to Advance the Ethical Development and Use of AI/ML in Biomedical and Behavioral Science, NOT-OD-22-065

Professor Jalayne Arias, Associate Professor, Georgia State University
Dr. Alex Federman, Professor of Medicine, Icahn School of Medicine at Mount Sinai

Dr. Xiaoqian Jiang, Professor and Chair, University of Texas Health Science Center at Houston

Dr. Qing Zeng, Director, Biomedical Informatics Center, George Washington University
Dr. Lu Tang, Professor, Texas A&M University
Dr. Sophia Fantus, Assistant Professor, University of Texas at Arlington
Dr. Jinsil Hwaryoung Seo, Associate Professor, Texas A&M University

Dr. Bankole Olatosi, Associate Professor, University of South Carolina
Dr. Shan Qiao, Associate Professor, University of South Carolina
Amber Simpson, Associate Professor/Canada Research Chair, Queen's University
Ms. Rohan Faiyaz Khan, PhD student, Queen's University

Dr. Jessica Sperling, Director, Office of Evaluation and Applied Research Partnership, Duke University
Dr. Whitney Welsh, Research Scientist, Duke University

Dr. Jennifer Wagner, Assistant Professor of Law, Policy, and Engineering and Anthropology, Penn State University

Dr. Jodyn Platt, Associate Professor, University of Michigan

Professor Abhinav Jha, Associate Professor, Washington University

Dr. Maya Sabatello, Associate Professor of Medical Sciences, Columbia University
Dr. Tony Sun, Researcher, Columbia University

Professor Lucila Ohno-Machado, Professor and Chair, Yale University

Dr. Danton Char, Associate Professor, Stanford Medicine

Dr. Risa Wolf, Associate Professor of Pediatrics, Johns Hopkins
Dr. Alaa Youssef, Post-Doctoral Scholar, Stanford University School of Medicine

Mr. Trenton Chang, Ph.D. Candidate, University of Michigan

Dr. Pilhwa Lee, Lecturer, Morgan State University

Dr. Kristin Kostick-Quenet, Assistant Professor, Baylor College of Medicine

Professor Nick Anderson, Professor, UC Davis

Professor Stephanie Kraft, Assistant Professor, Seattle Children's Research Institut

Dr. Andre Holder, Assistant Professor, Emory University

FY2022 Request for ODSS Funds to Support Collaborations to Improve the AI/ML Readiness of NIH Supported Data, NOT-OD-22-067

Professor Andrew Schaefer, Professor, Rice University

Professor James Lacey, City of Hope
Ms. Emma Spielfogel, Senior Data Analyst, City of Hope

Professor Kyung Sung, Associate Professor, University of California, Los Angeles
Holden Wu, Associate Professor, UCLA
Professor William Hsu, Professor, David Geffen School of Medicine at UCLA
Dr. Michael McNitt-Gray, Professor, David Geffen School of Medicine at UCLA
Professor Grace Hyun Kim, Professor, UCLA

Dr. Amye Tevaarwerk, Professor, Mayo Clinic
Dr. Benjamin Vincent, Associate Professor, University of North Carolina at Chapel Hill

Professor Levi Waldron, Professor, CUNY
Dr. Sehyun Oh, Assistant Professor, City University of New York

Dr. James Anderson, Moran Eye Center Senior Software Design Engineer, University of Utah
Dr. Rebecca Pfeiffer, Research Assistant Professor, University of Utah

Dr. Alex Bateman, Head of Protein Sequence Resources, EMBL-EBI
Dr. Cathy Wu, Professor and Director, Data Science Institute, University of Delaware
Dr. Alan Bridge, Director, Swiss-Prot Group, SIB Swiss Institute of Bioinformatics

Dr. Thomas Hampton, Research Scientist, Geisel School of Medicine at Dartmouth

Dr. Rebecca McNeil, Senior Research Statistician, RTI International

Professor Sriram Neelamegham, Principal Investigator, University at Buffalo, State University of New York-Buffalo
Professor Rudiyanto Gunawan, Associate Professor, State University of New York - Buffalo

Professor Alexey Terskikh, Head Laboratory, SBP

Dr. Joan Casey, Assistant Professor of Environmental and Occupational Health Sciences, University of Washington School of Public Health
Dr. Danielle Braun, Principal Research Scientist, Harvard T.H. Chan School of Public Health

Dr. David Gutman, Associate Professor, Emory University

Dr. Ranjan Ramachandra, R&D Engineer, University of California San Diego
Mr. Steven Peltier, Deputy Director, UC San Diego National Center for Microscopy and Imaging Research

Dr. Jaehee Kim, Assistant Professor, Cornell University

Dr. Katherine Yates, Rheumatology Fellow, University of North Carolina Chapel Hill

Dr. Ron Alkalay, Associate Professor in Orthopedic Surgery, Beth Israel Deaconess Medical Center
Dr. David Hackney, Professor of Radiology, Beth Israel Deaconess Medical Center Harvard Medical School

Dr. Evelyn Hsieh, Associate Professor of Medicine/Chief of Rheumatology, Yale School of Medicine/VA Connecticut Healthcare System
Mr. Dax Westerman, Senior Data Scientist, Department of Biomedical Informatics, Vanderbilt University Medical School
Dr. Farah Kidwai-Khan, Data Scientist, Yale
Dr. Ruth Reeves, Associate Professor, Vanderbilt University Medical Center
Dr. Julie Womack, Associate Professor, Yale University

Dr. Samantha Krening, Associate Professor, Ohio State University

Dr. Amit Majumdar, Division Director; Associate Professor, University of California San Diego
Dr. Satya Sahoo, Associate Professor, Case Western Reserve University
Ms. Subhashini Sivagnanam, Manager of Cyberinfrastructure Services and Solutions, SDSC/UCSD
Dr. Kenneth Yoshimoto, Computational Scientist, San Diego Supercomputer Center

Dr. Kathleen Friel, Associate Professor, Burke Neurological Institute
Dr. Shivakeshvan Ratnadurai Girdharan, Instructor, Burke Neurological Institute

Tanvi Bhatt, Professor, University of Illinois at Chicago
Dr. Shuaijie Wang, Research Associate Professor, University of Illinois Chicago
Mr. Kazi Shahrukh Omar, PhD Student, Graduate TA/RA, University of Illinois Chicago

Dr. Meredith Adams, Associate Professor, Wake Forest School of Medicine

Professor, Clifton Fuller, Professor, UT MD Anderson Cancer Center
Dr. Kareem Wahid, Post-doctoral Fellow, MD Anderson Cancer Center
Dr. Mohamed Naser, MD Anderson Cancer Center Instructor

Professor Rongguang Liang, Professor, University of Arizona
Dr. Bofan Song, Associate Research Professor, University of Arizona

Dr. Sandra Kane-Gill, Professor, University of Pittsburg
Dr. Raghu Mirmira, Professor, University of Chicago
Dr. Bobbie-Jo Webb-Robertson, Division Director, Biological Sciences, Pacific Northwest National Laboratory
Dr. Tezcan Ozrazgat Baslanti, Research Associate Professor, University of Florida

Dr. David Linden, Associate Professor, Mayo Clinic
Dr. Kamrul Hasan Foysal, Data Science Analyst, Mayo Clinic

Dr. Yanbin Yin, Professor, University of Nebraska Lincoln

Dr. Elin Grundberg, Principal Investigator, Children's Mercy Kansas City
Dr. Keith Feldman, Assistant Professor, Children's Mercy Kansas City

Professor, Zhe Sage Chen, Associate Professor, New York University Grossman School of Medicine

Dr. Cole Vonder Haar, Assistant Professor, Ohio State University

Dr. Mark Musen, Professor, Stanford University

Dr. Shigang Chen, Professor, University of Florida

Dr. Alex Wagner, Principal Investigator, Nationwide Children's Hospital

FY2023 Request for ODSS Funds to Support Collaborations to Improve the AI/ML Readiness of NIH Supported Data, NOT-OD-23-082

Dr. Rima Arnaout, Associate Professor, UCSF
Dr. Josiah Couch, Post-doctoral Research Fellow, Beth Israel Deaconess Medical Center

Dr. Diana Vera Cruz, Bioinformatician, University of Chicago
Dr. Romuald Girard, University of Chicago

Ms. Michelle Audirac, Senior Data Scientist, Harvard University

Dr. Vida Abedi, Associate Professor, Penn State University
Dr. Alireza Vafaei Sadr, Post-doctoral, Penn State

Professor Yu-Chiao Chiu, Assistant Professor, University of Pittsburgh
Professor Yufei Huang, Professor, University of Pittsburgh
Dr. Chien-Hung Shih, Research Scientist, UPMC Hillman Cancer Center
Dr. Yanhao Tan, Post-doctoral Fellow, School of Medicine

Dr. Vibhuti Gupta, Assistant Professor, Meharry Medical College
Dr. Rajnish Kumar, Post-doctoral Research Associate, University of Michigan

Ms. Jessica Gjonaj, Research Coordinator, NYU Grossman School of Medicine

Dr. Diane Cook, Professor, Washington State University
Dr. Brian Thomas, Researcher, Washington State University

Professor Stefan Bekiranov, Professor, University of Virginia
Dr. Loren Erickson, Associate Professor, University of Virginia

Dr. Melanie Fried-Oken, Professor, Oregon Health & Science University
Professor Deniz Erdogan, Professor, Northeastern University
Professor, Tales Imbiriba, Research Professor, Northeastern University

Dr. Karen Hirsch, Associate Professor, Stanford University
Dr. Yann Le Guen, Senior Biostatistician, Stanford University

Dr. Hyungsoon Im, Associate Professor, Massachusetts General Hospital

Dr. Mary Jo Larson, Senior Scientist, Brandeis University
Mr. Nick Huntington, Research Scientist, Brandeis University
Dr. William Crown, Distinguished Research Scientist, Brandeis University
Professor Rachel Adams, Professor, Boston University School of Public Health

Dr. Paolo Maccarini, Associate Research Professor, Duke University

Dr. Yiqiang Zhang, Assistant Professor, University of Hawaii at Manoa
Dr. Jerris Hedges, RCMI U54 MPI, University of Hawaii at Manoa
Dr. Youping Deng, Professor, University of Hawaii

Dr. Junaid Merchant, Data Analyst, University of Maryland School of Public Health

Professor Jose Ordovas, Senior Scientist, Tufts University
Dr. Andreia Martinho, Post-doctoral, Tufts University
Dr. Rebecca Batorsky, Senior Data Scientist, Tufts University
Professor Abani Patra, Professor, Tufts University

Dr. Yuan Chen, Assistant Attending Professor, Memorial Sloan Kettering Cancer Center
Dr. Yasin Khadem Charvadeh, Research Scholar, MSKCC

Ms. Anna Nagy, Genetic Counselor, Laboratory for Molecular Medicine, Mass General Brigham
Dr. Matt Lebo, Director, Lab for Molecular Medicine, Mass General Brigham

Dr. Nathan Sheffield, Associate Professor, University of Virginia

Professor Clare Tempany, VC Research, Brigham
Dr. Andrey Fedorov, Associate Professor, Radiology, Brigham and Women's Hospital
Ms. Deepa Krishnaswamy, Instructor in Radiology, Brigham and Women's Hospital

Dr. Cornelia Ulrich, Cancer Center Director, Huntsman Cancer Institute

Dr. Wei Zhang, Principal Investigator, Wake Forest School of Medicine
Mr. Seha Ay, Graduate Student, Wake Forest School of Medicine
Dr. Liang Liu, Assistant Professor, Wake Forest School of Medicine

Dr. Sam Payne, Associate Professor, Brigham Young University

Appendix C: The FY24 ODSS AI Supplement Program PI Meeting Agenda

11am-12:25pm ET **WELCOME**

Dr. Laura Biven, Lead, Integrated Infrastructure and Emerging Technologies, NIH ODSS

NIH OFFICE OF DATA SCIENCE STRATEGY OVERVIEW

Dr. Susan Gregurick, Associate Director for Data Science, NIH; Director, ODSS

ODSS AI ACTIVITIES OVERVIEW & FUTURE VISION

Ms. Christine Cutillo, Health Data Scientist for AI Ethics, NIH ODSS

BEGINNING OF THE MEETING POLL

The poll will explore various, relevant topics at the forefront of NIH AI

Ms. Christine Cutillo, Health Data Scientist for AI Ethics, NIH ODSS

12:25-1:25pm ET

BREAKOUT SESSION 1

During this breakout session, participants from the FY22 NOT-OD-22-065 and NOT-OD-22-067 programs will give 10-minute lightning presentations that discuss the motivation, achievements, best practices, lessons learned, and future plans of their awarded AI projects.

TRACK A

Dr. Alex Federman (Moderator), Professor of Medicine, Icahn School of Medicine at Mount Sinai; Dr. Jalayne Arias, Associate Professor, Georgia State University
A Qualitative Examination of Patients' and Clinicians' Perspectives on AI-driven Automated Screening for Cognitive Impairment

Dr. Andrew Schaefer, Professor, Rice University
Implementation of a Public Data Challenge for MRI-Guided Tumor Segmentation in Head and Neck Cancer Patients

Dr. Lu Tang, Professor, Texas A&M University; **Dr. Jinsil Hwaryoung Seo**, Associate Professor, Texas A&M University; **Dr. Sophia Fantus**, Assistant Professor, University of Texas at Arlington
Improving AI Alzheimer Researchers' Knowledge, Attitudes and Practices of AI Ethics

Dr. James V. Lacey Jr., Professor, City of Hope
Strategies for Improving the Readiness of Large-scale Cohort Data for AI/ML

TRACK B

Dr. Kyung Sung (Moderator), Associate Professor, University of California, Los Angeles
Detection and Localization of Prostate Cancer: A Structured Multi-Scale Multiparametric MRI Database for AI/ML Research

Mr. Trenton Chang, Ph.D. Candidate, University of Michigan
Measuring and Mitigating the Impact of Biases in Laboratory Testing on Machine Learning Models

Dr. Levi Waldron, Professor, City University of New York; **Dr. Sehyun Oh**, Assistant Professor, City University of New York
Improving FAIRness and AI/ML readiness of Bioconductor data resources

Dr. Maya Sabatello, Associate Professor of Medical Sciences, Columbia University
Blind/Disability and Intersectional Biases in E-Health Records (EHRs) of Diabetes Patients

Dr. Cathy Wu, Professor and Director, Data Science Institute, University of Delaware
UniProt Knowledgebase to Enable AI/ML Readiness and Applications

1:25-1:35pm ET

BREAK

1:35-2:35pm ET

BREAKOUT SESSION 2

During this breakout session, participants from the FY22 NOT-OD-22-065 and NOT-OD-22-067 programs will give 10-minute lightning presentations that discuss the motivation, achievements, best practices, lessons learned, and future plans of their awarded AI projects.

TRACK A

Dr. Bankole Olatosi (Moderator), Associate Professor, University of South Carolina
Framing the Ethical-Framework Guided Metric Tool – Lessons Learned

Dr. Shivakeshvan Ratnadurai Giridharan, Instructor, Burke Neurological Institute
Development of Deep Learning-based Kinematic Data Acquisition

Dr. Amber Simpson, Associate Professor/Canada Research Chair, Queen's University; Ms. Rohan Faiyaz Khan, PhD Student, Queen's University
Ethical Development of Colorectal Cancer Imaging Biomarkers

Dr. Rebecca McNeil, Senior Research Statistician, RTI International
Enabling AI/ML Readiness and Modernization of Longitudinal Pregnancy and Cardiovascular Health Data: Lessons Learned

TRACK B

Dr. Jennifer Wagner (Moderator), Assistant Professor of Law, Policy, and Engineering and Anthropology, Penn State University
A Synopsis of the PREMIERE Ethics Supplement

Dr. Alex Wagner, Principal Investigator, Nationwide Children's Hospital
Application of Genomic Knowledge Standards to the Genome Aggregation Database

Dr. Jessica Sperling, Director, Office of Evaluation and Applied Research Partnership, Duke University; Dr. Whitney Welsh, Research Scientist, Duke University
Machine Learning and The Ethics of Use: Patient and Provider Perspectives on Utilizing Prediction Models in Medical Care

Dr. Benjamin Vincent, Associate Professor of Medicine, University of North Carolina at Chapel Hill
ASTOR: Alliance Standardized Translational 'Omics Resource

2:35-2:45pm ET

BREAK

2:45-3:45pm ET

BREAKOUT SESSION 3

During this breakout session, participants from the FY22 NOT-OD-22-065 and NOT-OD-22-067 programs will give 10-minute lightning presentations that discuss the motivation, achievements, best practices, lessons learned, and future plans of their awarded AI projects.

TRACK A

Dr. Abhinav Jha (Moderator), Assistant Professor, Washington University
Uncertainty Quantification of AI-Based Imaging Algorithms: The Need and Methods

Dr. Sriram Neelamegham, Professor/PI, University at Buffalo, State University of New York; **Dr. Rudiyanto Gunawan**, Associate Professor, State University of New York - Buffalo
Systems Biology of Glycosylation: Extending Mechanistic Analysis Toward AI

Dr. Josiah Couch, Postdoctoral Research Fellow, Beth Israel Deaconess Medical Center
Beyond Class Balance: Dataset Diversity and Model Performance in Deep-Learning Classification Tasks

Dr. Alexey Terskikh, Associate Professor, Sanford Burnham Prebys Medical Discovery Institute
ImAge Quantitates Ageing and Rejuvenation

TRACK B

Dr. Qing Zeng-Treitler (Moderator), Director, Biomedical Informatics Center, George Washington University
Shedding Light on the Black Box: Using Explainable AI to Enhance Clinical Research

Dr. Ranjan Ramachandra, Research & Development Engineer, University of California San Diego
Development of Software for the Optimization and Normalization of 3D Electron Microscopic Data Acquisition to Facilitate Use and Reuse of AI/ML-Based Image Analysis Tools

Dr. Joan Casey, Assistant Professor of Environmental and Occupational Health Sciences, University of Washington School of Public Health; Dr. Danielle Braun, *Principal Research Scientist, Harvard T.H. Chan School of Public Health*
Approaches for AI/ML Readiness for Wildfire Exposures

Dr. Amit Majumdar, Division Director, Associate Professor, University of California San Diego
Implementation of Provenance Metadata on Neuroscience Gateway – A Platform for Neuroscience Software Dissemination

Dr. Samantha Krening, Assistant Professor, The Ohio State University
An automated AI/ML platform for multi-researcher collaborations for a NIH BACPAC funded Spine Phenome Project

3:45-3:55pm ET

BREAK

3:55-4:55pm ET

BREAKOUT SESSION 4

During this breakout session, participants from the FY22 NOT-OD-22-065 and NOT-OD-22-067 programs will give 10-minute lightning presentations that discuss the motivation, achievements, best practices, lessons learned, and future plans of their awarded AI projects. Participants from the FY23 NOT-OD-23-082 program will give 10-minute lightning presentations on their project motivation, plan, and expected outcome.

TRACK A

Dr. Danton Char (Moderator), Associate Professor, Stanford Medicine

Development of a Method for Identifying Ethical Considerations Arising from Healthcare AI Deployments

Dr. Jaehee Kim, Assistant Professor, Cornell University
Towards AI/ML-Enabled Molecular Epidemiology of Mycobacterium Tuberculosis

Dr. Jody Platt, Associate Professor, University of Michigan
Attitudes of Cancer Patients About the Use of AI in Clinical Care: A Nationwide Survey

Dr. Katherine Yates, Rheumatology Fellow, University of North Carolina at Chapel Hill
Development of an AI/ML-Ready Knee Ultrasound Dataset in a Population-Based Cohort

Dr. Yann Le Guen, Senior Biostatistician, Stanford University
PRECision Care In Cardiac ArrEst - ICECAP (PRECICECAP)

TRACK B

Dr. Clifton Fuller (Moderator), Professor, UT MD Anderson Cancer Center
Leveraging MRI applications for FAIR and Open (Re)Use

Dr. Alaa Youssef, Post-Doctoral Scholar, Stanford University School of Medicine
Ethical Considerations in the Design and Conduct Clinical Trials of AI: A Qualitative Study of Investigators' Experiences with Autonomous AI for Diabetic Retinopathy

Dr. Bofan Song, Associate Research Professor, University of Arizona
Improving AI/ML-Readiness of Data Generated from NIH-Funded Research on Oral Cancer Screening

Dr. Bobbie-Jo Webb-Robertson, Division Director, Biological Sciences, Pacific Northwest National Laboratory
Generating AI/ML-Ready Data for Type 1 Diabetes

Dr. Diana Vera Cruz, Bioinformatician, University of Chicago; **Dr. Romuald Girard**, Assistant Professor, University of Chicago
Optimizing Diagnostic and Prognostic Biomarkers of CASH using Machine Learning

4:55-5pm ET

CLOSE

Ms. Christine Cutillo, Health Data Scientist for AI Ethics, NIH ODSS

DAY 2

11am-11:10am ET

INTRODUCTION

Ms. Christine Cutillo, Health Data Scientist for AI Ethics, NIH ODSS

11:10am-12:10pm ET

BREAKOUT SESSION 5

This interactive breakout session, led by NIH program officers, gives participants time to discuss AI barriers, challenges, and opportunities (including novel ideas and future directions). Participants will be divided into a few virtual rooms; a report-back session is scheduled for later in the day.

TRACK A

Ms. Christine Cutillo (Moderator), NIH ODSS
Dr. Jennifer Couch (Moderator), NIH NCI

TRACK B

Dr. Brad Bower (Moderator), NIH NIBIB
Dr. Deborah Duran (Moderator), NIH NIMHD

TRACK C

Dr. Haluk Resat (Moderator), NIH OD
Dr. Tamara Litwin (Moderator), NIH OD

12:10-12:20pm ET

BREAK

12:20pm-1:20pm ET

BREAKOUT SESSION 6

During this breakout session, participants from the FY22 NOT-OD-22-065 and NOT-OD-22-067 programs will give 10-minute lightning presentations that discuss the motivation, achievements, best practices, lessons learned, and future plans of their awarded AI projects.

TRACK A

Dr. Keith Feldman (Moderator), Assistant Professor, Children's Mercy Kansas City

Consideration of Geospatial Distribution in the Measurement of Study Cohort Representativeness and Data Quality

Dr. Cole Vonder Haar, Assistant Professor, Ohio State University
Behavioral Phenotyping of Risky Decision-Making After TBI in a Rat Model Enables Evaluation of Statistical Methodology

Dr. Pilhwa Lee, Lecturer, Morgan State University
Algorithmic Bias in Single Cell Analysis: A Study of Optimal Transport and Sinkhorn Divergence

Dr. Evelyn Hsieh, Associate Professor of Medicine/Chief of Rheumatology, Yale School of Medicine/VA Connecticut Healthcare System; **Mr. Dax Westerman**, Senior Data Scientist, Vanderbilt University Medical School
Enabling AI/ML-Readiness of Data from Dual-Energy X-ray Absorptiometry (DXA) Images via Optical Character Recognition (OCR) and Deep Learning

TRACK B

Dr. Mark Musen (Moderator), Professor, Stanford University
Metadata for the Masses: Making CEDAR Portable and Cloud-Based

Dr. Matteo D'Antonio, Assistant Professor, UC San Diego
Using Ancestry-Agnostic Approaches for Genome-Wide Association Studies and Polygenic Risk Scores

Dr. James Anderson, Senior Software Design Engineer, University of Utah - Moran Eye Center
Retinal Circuitry - Improving AI Readiness of Existing Retinal Connectomes

Dr. Ron Alkalay, Associate Professor in Orthopedic Surgery, Beth Israel Deaconess Medical Center
Application of AI/ML Models for Musculoskeletal Spine Research in Patients with Metastatic Spinal Disease: Successes and Challenges

Ms. Jessica Gjonaj, Research Coordinator, NYU Grossman School of Medicine
NYU-Moi Data Science for Social Determinants Training Program

1:20-1:30pm ET

BREAK

1:30-2:30pm ET

BREAKOUT SESSION 7

During this breakout session, participants from the FY22 NOT-OD-22-065 and NOT-OD-22-067 programs will give 10-minute lightning presentations that discuss the motivation, achievements, best practices, lessons learned, and future plans of their awarded AI projects.

TRACK A

Professor Stephanie Kraft (Moderator), Assistant Professor, Seattle Children's Research Institute
Advancing Equity in AI-Enabled Mobile Health Tools: Community-Informed Design Considerations

Dr. Shigang Chen, Professor, University of Florida
Making Parkinson's Disease Data AI-Ready for Cloud-Outsourced Machine Learning Research with Differential Privacy

Dr. Nick Anderson, Professor, UC Davis
Research Data Ethics Maturity Model (README)

Dr. David Linden, Associate Professor, Mayo Clinic
Developing Computational Tools to Analyze the Structure of Nerve Cells in the Bowel to Better Understand Digestive Disease

Ms. Deepa Krishnaswamy, Instructor in Radiology, Brigham and Women's Hospital
Generation and Dissemination of Enhanced AI/ML-ready Prostate Cancer Imaging Datasets for Public Use

TRACK B

Dr. Zhe Sage Chen (Moderator), Associate Professor, New York University Grossman School of Medicine
Generative AI for Interictal EEG-Based SUDEP Risk Assessment

Dr. Kristin Kostick-Quenet, Assistant Professor, Baylor College of Medicine
Patient-Centric Federated Learning: Automating Meaningful Consent to Health Data Sharing with Smart Contracts

Dr. Thomas Hampton, Research Scientist, Geisel School of Medicine at Dartmouth
RESPIRE: A Reusable Architecture for Domain Centric 'Omics Data Sharing

Dr. Tanvi Bhatt, Professor, University of Illinois at Chicago
WalkVIZ: Development of a Comprehensive Tool to Process and Visually Analyze Gait Data

2:30-2:40pm ET

BREAK

2:40-3:40pm ET

BREAKOUT SESSION 8

During this breakout session, participants from the FY22 NOT-OD-22-065 and NOT-OD-22-067 programs will give 10-minute lightning presentations that discuss the motivation, achievements, best practices, lessons learned, and future plans of their awarded AI projects. Participants from the FY23 NOT-OD-23-082 program will give 10-minute lightning presentations on their project motivation, plan, and expected outcome.

TRACK A

Dr. Yanbin Yin (Moderator), Professor, University of Nebraska Lincoln
AI/ML Ready Carbohydrate Enzyme Gene Clusters in Human Gut Microbiome

Dr. Tezcan Ozrazgat Baslanti, Research Associate Professor, University of Florida
AI/ML Ready Data Enriched with Social Determinants of Health and Unstructured Text Data for Acute Kidney Injury Risk Prediction

Dr. Xiaoqian Jiang, Professor and Chair, University of Texas Health Science Center at Houston
Ethically Optimize Machine Learning Models with Real-World Data to Improve Algorithmic Fairness

Mr. Seha Ay, Graduate Student, Wake Forest School of Medicine
Applying Gerchberg-Saxton Algorithm on Biomedical Data to Mitigate Sampling Bias on Under-Represented Populations

TRACK B

Dr. David Gutman (Moderator), Associate Professor, Emory University
Piloting a Web-Based Neuropathology Image Resource for the ADRC Community: The Brain Digital Slide Archive

Dr. Andre Holder, Assistant Professor, Emory University
Battling Bias in Sepsis Prediction: Towards an Informed Understanding of EMR Data and Its Limitations

Dr. Vida Abedi, Associate Professor, Penn State University
Enhancing Imputation for Clinical Trials: The Path for a Flexible Toolkit

Dr. Vibhuti Gupta, Assistant Professor, School of Applied Computational Sciences, Meharry Medical College
AI/ML ready mHealth and wearables data for Dyadic HCT

3:40-3:50pm ET

BREAK

3:50-4:30pm ET

BREAKOUT SESSION 5 REPORT BACK

This session brings participants back together to see which AI barriers, challenges, and opportunities (discussed in the virtual rooms during Breakout Session 5) are the most prevalent/promising among peers.

Ms. Christine Cutillo, NIH ODSS
Dr. Jennifer Couch, NIH NCI
Dr. Brad Bower, NIH NIBIB
Dr. Deborah Duran, NIH NIMHD
Dr. Haluk Resat, NIH OD
Dr. Tamara Litwin, NIH OD

4:30-4:50pm ET

END OF THE MEETING POLL

The poll provides participants with the opportunity to give their feedback and enhance NIH AI activities.

Ms. Christine Cutillo, Health Data Scientist for AI Ethics, NIH ODSS

4:50-5pm ET

CLOSEOUT & ADJOURN

Ms. Christine Cutillo, Health Data Scientist for AI Ethics, NIH ODSS

Appendix D Slido Poll Results

Two Slido polls were conducted during the meeting. One at the beginning of the meeting and one at the end. The results of the polls are included here.

Day 1:

Engaged participants

101 out of 129 Slido participants engaged with polls or Q&A.



Q&A engagement

1 out of 129 participants asked a question or voted in Q&A.



Poll engagement

97 out of 129 Slido participants voted in a poll.



Multiple-choice poll

What award are you associated with?

0 8 3

FY22 AI Ethics (NOT-OD-22-065)



FY22 AI Readiness (NOT-OD-22-067)



FY23 AI Readiness (NOT-OD-23-082)



Observer



What areas of expertise did you bring to your team?

0 7 9



What would you like to get out of this Virtual AI PI meeting?

068

(1/5)

- listen to smart people
- connections with people doing related work
- Building Community
- Standard format
- Learning from others and getting updates
- Listen to other smart people for 2 days
- Appreciation for data limitations
- experience of benchmarking LLMs
- new tools
- Understand how NIH supports AI. Opportunity
- to collaborate. Learning from others. Ethics
- Ideas
- Learning
- Getting connected in collaboration and admissible data repositories.
- Learn about tools for data curation and distribution
- Connections
- Specifics of generating AI-ready data
- opportunities and learning from others

What would you like to get out of this Virtual AI PI meeting?

068

(2/5)

- Practical solution, new funding opportunities
- Brainstorming
- Ideas & Learning
- to learn grant opportunities, network with potential partners, identify the new direction
- Networking, collaborations, challenges, NIH view of AI landscape
- funding opportunities
- Learn re challenges and solutions
- Ideas for AI Safety Institute participation
- Opportunities
- Collaboration ideas
- Understand scope of work in this area
- Collaborations
- Learn from others
- future opportunities
- New knowledge, ideas, and collaborations
- Networking, achievements, challenges
- More ideas on what's happening AI ethics field
- What other figured out with medical

What would you like to get out of this Virtual AI PI meeting?

068

(3/5)

- ML, especially medical dataset availability
- Next direction of research
- Networking
- Learning
- new research ideas
- New ideas oppurtunities
- key challenges
- Exposure of our work, networking with data scientists, potential collaborations
- Understanding of current topics and trends
- Opportunities and collaboration
- Opportunities for data sharing
- networking, ideas
- high level view
- Understand the vision of nih
- Data sharing
- Network
- Networking
- Learn how other people deploy AI
- Networking
- understanding applications
- Learning from others
- Collaboration
- Networking
- Information on NIH future

What would you like to get out of this Virtual AI PI meeting?

068

(4/5)

- plans and funding opps
- State of Science from those who are doing this work
- learn more about discussions on AI ethics; learning from others
- Understand priorities of the NIH in regards to biological research involving AI
- networking
- Updates
- Understanding of ODSS priority areas in AI
- Understand data gaps
- new approaches
- Understanding future funding
- Inspiration for future researchs
- Learning
- find future opportunities
- Funding opportunities Networking
- Overview of the AI landscape
- Upcoming opportunities
- Practical solutions
- Feedback. Collaborations. Shared challenges.
- Networking
- New research ideas
- Data sharing

What would you like to get out of this Virtual AI PI meeting? 068
(5/5)

- Networking
- opportunities to network and initiate new collaborations
- See what others are working on
- Networking
- Networking

Do you have experience w/ data sheets, health sheets, or similar documentation? 079

Yes



No



Data sheets, or similar documentation: experience type 069

Producer



Consumer



No experience



Data sheets, or similar documentation: which aspects were most useful?

0 3 2

(1/2)

- Na
- provenance, ontology and other standards
- Dictionary definition
- Quality sources
- Data dictionary
- Viewed them with a grain of salt; saw them as similar to abstracts in papers--i.e., starting points for future discussions
- Key variables to link other data sheets
- SDOH elements, demographics
- Structured data and data dictionary
- NA
- Health services research
- Ability to cross-link
- Data dictionary: Demographics, provenance
- Demographics
- Demographics
- Structured data in Excel and XML formats
- data dictionary and SDOH elements
- N/A
- Data provenance and explicit bias statements

Data sheets, or similar documentation: which aspects were most useful?

0 3 2

(2/2)

- Easy processing
- Consolidated information
- Clear outcomes
- Detailed protocol, troubleshooting
- Source, demographics, past use
- N/A
- Na
- NA
- N/A
- Sharing capabilities
- Na
- Implications for diverse patient populations
- NA
- Data dictionary
- N/A

Do you have experience w/ model cards, or similar documentation?

0 6 8

Yes

 16 %

No

 84 %

Model cards, or similar documentation: experience type

0 5 6

Producer

 13 %

Consumer

 7 %

No Experience

 80 %

Model cards, or similar documentation: which aspects were most useful?

0 2 3

(1/2)

- Use cases
- Population characteristics
- Need standards
- intended use
- Mainly deep learning architectures and algorithmic pseudo-codes
- knowing the data used to train the model
- documentation, score cards
- Ethical considerations, but am disappointed that many model creators do not put too much thought into that section
- Na
- Documentation
- tedious to use
- package, initial parameters
- N/A
- NA
- NA
- N/A
- Na
- N/A
- NA
- NA
- NA
- N/A
- n/a

What best practices did you use to test/validate efforts to mitigate biases in your project (e.g., in the data, processes)?

035

(1/3)

- Retrain available models with data actually from target populations
- Random generated parametric test data
- Feedback from people being represented
- NA... animal data, collected from multiple species.
- Participatory action research foundation
- Expert curated data
- Statistical assessment of patient demographics
- qualitative; engaging with original data users
- investigation of data collection practices
- Preprocessing components that influence the biases
- Uniforming data distribution
- Single cell data and optimal transport
- Test for heterogeneity of performance across different populations in validation
- external validation
- Tools to test biases like Fairlearn

What best practices did you use to test/validate efforts to mitigate biases in your project (e.g., in the data, processes)?

035

(2/3)

- blinded study design
- Expert review
- Single secure collaboration environment--no silos. Regular check-ins across diverse team members.
- review of data collection processes from many different individuals/stakeholders
- Uniforming data distributions, data transformations
- Rigor
- Validating against gold standards
- engage original data owners
- as "data domain experts"
- YOLO - but big struggle is defining ground truth
- model evaluation with respect to bias mitigation metrics tailored to our setting
- Data preprocessing, external validation
- Split the data for analysis
- feature importance
- Bootstrapping
- Na
- cognitive interviewing of terms/language used

What best practices did you use to test/validate efforts to mitigate biases in your project (e.g., in the data, processes)? (3/3)

0 3 5

- Multiple coders
- Propensity-matched data, evaluation of key demographic variables on the outcome
- create synthetic data to supplement diversity as needed
- Subgroup performance checks
- Schema validation
- Incorporating people with the lived experience
- Data and methods

Day 2:

Engaged participants

34 out of 57 Slido participants engaged with polls or Q&A.



Q&A engagement

Your Q&A received no questions.



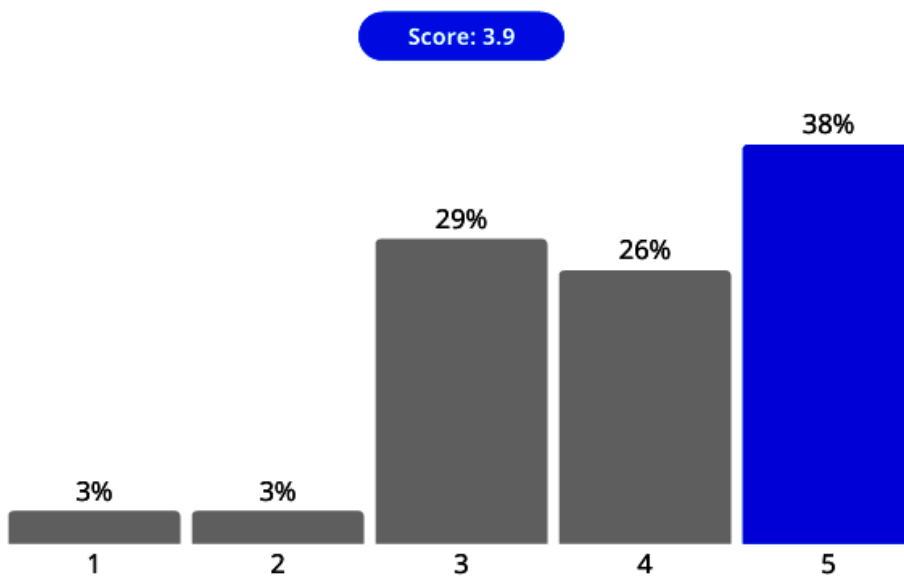
Poll engagement

34 out of 57 Slido participants voted in a poll.



How helpful was this Virtual AI PI meeting?

0 3 4



What did you learn that you'll apply forward in your work?

019

(1/2)

- importance of metadata and standards
- need of collaborators with proper expertise
- Model cards, concerns on synthetic data, concerns around standards, ontologies, curation being key to developing explainable trusted AI
- Synthetic data, bias, ethics, and transparency
- Most everyone seems to be struggling with the application of standardized metadata.
- data sheets
- terminologies in the scope of data science
- Being informed about ethics issues. Metadata.
- Different perspectives for tackling similar problems
- Ideas for analytic approaches
- Documentation
- Learnt about NIH priorities in AI
- Strategies for Data Release
- Model cards, provenance
- ontologies for data and metadata in AI readiness, smart contracts for consent

What did you learn that you'll apply forward in your work?

019

(2/2)

- improved formalized description of models (model cards) in publication of research
- Data analytics methods
- Use of model cards
- Model cards

Anything else you'd like to let us know?

0 1 9

(1/2)

- Please tell speakers (ironically giving talks on ethics) to stay within their speaking time limit... in consideration for following speakers
- maybe create a networking group
- Virtual poster session
- In-person event
- Ethics of LLMs from prompt engineering perspective
- More time for q and a
- Biomed, or clinical data AI standards and compliance , eventually?
- More discussion time would be great, the talks were great but little time to discuss
- Maybe split by content more?
- Improve communication with Parent R01 Institutes and POs.
- Networking sessions
- Longer talks
- organize lightening talks by research topic, or even eliminate lightning talks and replace with trainings
- Expert curation is vital to AI development
- 10 minutes is too fast to cover ethical issues

Anything else you'd like to let us know?

0 1 9

(2/2)

- Continuation of funding supports and regular meeting
- More opportunities for small and large group discussion would be great!
- The conversational break out sessions need to happen more. Less talk at us in presentations
- Communities are built over coffee breaks in person, not over Zoom.
- maybe separate tracks for technical vs ethical/social talks
- Spread in three shorter days
- dedicated time for collaboration discussions and building from the work done in these supplements.
- Examples of basic data sheets and model cards