

ODSS Concept Clearance – May 2024

Initiative 3: Graduate Curricula/Module/Training Development and Assessment AI-Ready Bioethics Researchers

Initiative Type: New

Activity Code: (R25) Education Projects

OBJECTIVE: To develop, evaluate, and disseminate curricula, module, and training opportunities to develop the skills and competencies that bioethics and humanities researchers need to enhance the ethical development and assessment of AI across the data and model development path and to co-innovate new ethical biomedical AI capabilities.

PROPOSED FUNDING: budget will grow from \$900,000 in FY25 for 3 awards to \$2,700,000 in FY27 for a steady state of 9 awards per year.

DESCRIPTION: This initiative uses the R25 mechanism develop, evaluate, and assess innovative curricula/modules/training to capture the diffuse bioethicist/humanities subset of trainees and will target critical skills and competencies needed to contribute to the technical and social aspects of AI across the data and model development and assessment path (e.g. data documentation, data curation and sharing, transparency, engagement, bias detection, ethics, ethical challenges/practices, AI assessment, and trust).

Applications must specify the materials and training activities to be developed, and the skills and competencies targeted. Applications must have a clear plan for formative and summative assessments, and for disseminating/making freely available educational materials including data and code (sharing with other training programs and educational portals/sandboxes is highly encouraged). Applications must have a recruitment plan that enhances diversity and may target trainees with ethics/ humanities/law or other ethics relevant backgrounds at the graduate level. Suitable proposals will use relevant biomedical/behavioral data and use cases, target awareness of potential causes for inequity in AI and current best practices for assessing, avoiding, or remediating bias, including case studies.

This program will support a portfolio of awards at well and lesser resourced institutions and institutions with a focus on health disparity populations. PI meetings will strengthen connections among the cohorts and awardees will be invited to collaborate on the development of practicum opportunities for trainees for hands-on training. Awards will be limited to 3 years to keep pace with rapidly advancing technology. Subsequent initiatives may include inviting institutions to re-use curricula/modules, leverage learnings and methodologies, and incorporate it into existing courses or training opportunities (encouraging adoption by under-resourced institutions); inviting sustainability plans and partnerships among institutions and industry that create career paths for trainees; and tools and infrastructure development to share complete resources (teaching materials, data, code in ready-to-use platforms).

EXPECTED OUTCOMES: Re-usable, tested educational materials (e.g., datasets, curricula, modules) to develop skills and competencies described above with the goal of enhancing the systems-wide thinking required for the ethical development and

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assessment of AI across data and model development, and to collaboratively co-innovate new capabilities in ethical AI.

IMPORTANCE: This program addresses the need for researchers with both ethics expertise and understanding of technical and social aspects of AI as applied in the biomedical and health contexts.

HISTORY: This program builds on the findings and experience from pilot funding opportunities, PI meetings, landscape assessments, and other community engagements. Findings from these engagements highlight the need for ethics experts that understand the social and technical aspects of AI to collaboratively develop new capabilities in transparent, responsible, and trustworthy AI and for AI assessment.