



2024 Election for Board Director

Candidate: Hua Xu

Professional Title & Affiliation

Robert T. McCluskey Professor and Vice Chair of Department of Biomedical Informatics and Data Science, Assistant Dean for Biomedical Informatics, Yale University School of Medicine

Personal Statement / Short Biography

Dr. Hua Xu is Robert T. McCluskey Professor and Vice Chair for Research and Development, Department of Biomedical Informatics and Data Science at Yale School of Medicine (YSM), as well as Assistant Dean for Biomedical Informatics at YSM. Prior to Yale, he was a faculty member at Vanderbilt University and The University of Texas Health Science Center at Houston. He received his Ph.D. in Biomedical Informatics from Columbia University. His primary research interests include biomedical natural language processing (NLP) and data mining, as well as their applications in secondary use of electronic health records data for clinical and translational research. His research is funded by multiple agencies (i.e., NLM, NCI, NIGMS, NIA, NIMH, AHA, and CPRIT), and methods/tools developed in his lab have been widely used to support diverse biomedical applications. He served as the Chair of American Medical Informatics Association (AMIA) NLP Working Group and now leads the Observational Health Data Sciences and Informatics (OHDSI) NLP Working Group. Dr. Xu is a fellow of both the American College of Medical Informatics (ACMI) and the International Academy of Health Sciences Informatics (IAHSI).

As a PhD trained in Biomedical Informatics, AMIA has been my home community since I was a student. With the experience and leadership skills that I have developed through my current positions (e.g., Assistant Dean for Biomedical Informatics at Yale School of Medicine), I'm confident that I can contribute to the AMIA Board with additional values. As I'm extensively working on medical AI and large language models now, I'm especially interested in contributing my expertise in AI to facilitate AMIA's activities on this important area. I'm very excited about this opportunity to serve the AMIA community.

Please describe your leadership skills and experience, inside and outside of AMIA

Dr. Xu has extensive experience in leadership and strategic development. As the Assistant Dean of Biomedical Informatics, he develops strategies for computing resources for medical AI and manage a group of experts to provide services for biomedical researchers at Yale. He also serves as Vice Chair for Research and Development at the Department of Biomedical Informatics and Data Science, where over 80 faculty, staff, and students work together to develop novel informatics methods and apply them to clinical applications. In addition, he has led large informatics consortium projects, as well as multiple community-based initiatives such as NLP working groups in different communities, such as AMIA and OHDSI.

Please describe your experience and accomplishments in informatics

Dr. Xu is a nationally recognized researcher in biomedical informatics, focusing on biomedical NLP

research. His team has won over a dozen of biomedical NLP challenges and NLP tools developed in his lab (i.e., CLAMP) has been used by over 600 healthcare organizations. He has published over 280 peer-reviewed articles (with an H-index 66) and has been PI/site-PI for dozens of grants, including nine R01s and three U24 grants from NIH. In addition, he has organized a number of international conferences/workshops in biomedical NLP (e.g., ICHI 2013, HealthNLP workshops 2011-13), where he actively engages both the AMIA community and Computer Science community. Dr. Xu is a fellow of both the American College of Medical Informatics (ACMI) and the International Academy of Health Sciences Informatics (IAHSI).

Share any unique skills or perspective you bring to this role

If elected, Dr. Xu will bring the following unique skills and perspectives:

- (1) Extensive Knowledge in Generative AI Technologies and Healthcare Applications: Dr. Xu has substantial expertise in the latest generative AI technologies, particularly their applications in healthcare. His recent work on building foundational large language models (LLMs) for medical applications highlights his cutting-edge contributions to this field.
- (2) Over 20 Years of Experience in Biomedical Informatics: Dr. Xu has a rich background in biomedical informatics, having studied and worked in prestigious programs at Columbia, Vanderbilt, UTHealth, and the newly established Yale Biomedical Informatics program. This extensive experience across multiple leading institutions equips him with a broad and deep understanding of the field.
- (3) Expertise in Commercializing Informatics Tools: Dr. Xu has a proven track record of successfully translating academic innovations into commercial products. Notably, he played a pivotal role in commercializing the CLAMP tool developed at UTHealth, demonstrating his ability to bridge the gap between academia and industry effectively.

Please describe your teamwork experience and skills

Dr. Xu has extensive experience in board and committee services, which include serving on the Board of Scientific Counselors of the Lister Hill Center at the National Library of Medicine, acting as an Associate Editor of the Journal of Biomedical Informatics (JBI), and participating in the Election and Nomination Committee of the American College of Medical Informatics (ACMI). Through these roles, Dr. Xu has gained a deep understanding of fiduciary duties and the responsibilities inherent in being an effective team member.

Additionally, Dr. Xu's ability to function as a team player has been consistently demonstrated through his participation in numerous collaborative projects as a principal investigator or a co-investigator. His contributions to these projects reflect his ability to work harmoniously with diverse teams, leverage collective expertise, and achieve common goals. This blend of leadership, fiduciary insight, and collaborative experience uniquely positions Dr. Xu to contribute effectively to any board or committee.

AMIA Engagement and Participation

AMIA member – 10-20 years

Dr. Xu has been an active AMIA member for over 15 years and served as AMIA Natural Language Processing Working Group chair in 2013-14. In addition, he has published dozens of papers at AMIA conferences, and served on SPC/track-chair of AMIA Fall Symposium and Summit Conferences. Currently he serves as an associate editor of JBI and an editorial board member of JAMIA. Dr. Xu was elected to ACMI in 2014 and have been an active member since then. He regularly participates in ACMI events at AMIA fall symposium and attend the ACMI Winter Symposiums. He currently serves as a member of the ACMI Election and Nomination Committee.

Areas of Expertise

Big Data; Computer Science; Data Science; Knowledge Representation; Natural Language Processing; Ontologies; Software Engineering; Visual Analytics