



2021 Election for Board Director

Candidate

Arlene Chung, MD, MHA, MMCi, FAMIA

Professional Title And Affiliation

Consumer Health Clinical Team Lead & Informatician at Google Health; Informatics Course Director, Master of Management in Clinical Informatics , Duke School of Medicine

Personal Statement

As a researcher, clinical informatician, and educator, AMIA is my academic and professional home. AMIA has been vital to my development as an informatician and I attribute my success to my involvement in the organization and from benefiting from the excellent resources and programming AMIA provides. The more I have been involved in AMIA, the more I have grown to appreciate the range and diversity of offerings it provides, its tireless advocacy for our profession and members, and for providing community and home for informaticians.

If I had not attended my first Annual Symposium in 2012, I am quite sure that I would not have discovered my true calling in informatics. At that first conference, I knew I was 'home' immediately and that I had finally found my people! Since that moment, I have been so grateful for the community and activities (conferences, working groups, advocacy, mentorship, and more) offered as they have shaped my career professionally and personally. My involvement in AMIA has evolved over the years from serving as a reviewer for various AMIA conferences, JAMIA, and ACI to Scientific Programming Committee Memberships across several conferences, and participation in working groups and committees. More recently, it has been focused on developing an intentional pipeline for female physician informaticians through clinical informatics fellowship training programs as there is low representation.

As a Board member, I will work towards ensuring that our memberships' needs are represented and advocated for. I look forward to learning more about the needs of our members and working towards helping to drive strategies to best meet those needs as they evolve over time. The diversity of my experiences in academics as a tenured physician scientist, researcher, informatics educator and founder of a CI fellowship program and in industry have equipped me with rich perspectives that enable me to be an effective advocate for advancing AMIA's mission and vision in service of our membership.

I hope to increase awareness of the benefits of membership and our community to garner new membership from informatics professionals, industry, and internationally. I've seen many benefits from fostering innovation and research via industry-academic partnerships as an informatics researcher and IT executive. Thus, I would like to see AMIA facilitate partnerships

and collaborations, and provide forums for dissemination of learnings from academic/industry partnerships.

I'd also like to see expansion of career development opportunities for mid-career members, industry and informatics professionals, and trainees. I have been fortunate to be mentored and sponsored by those I have met through AMIA and to also serve as a mentor and sponsor to early career members in AMIA. Formal and informal support for our members in career transitions and on the job market, particularly for graduates of informatics programs who are seeking their first job, is invaluable. Unfortunately, it is still challenging to find salary benchmark data for informatics roles or information on career paths and options. Thus, providing assistance with navigating negotiations and the job market could be a phenomenal resource for our membership throughout various stages in one's career. The wealth of knowledge and expertise of our membership has tremendous value in career development and navigation and I'd like to see AMIA invest in targeted programming to support members in this way.

As AMIA further develops membership diversity, I would like to see AMIA take the lead on providing programming and in growing membership in communities such as pharmacists, allied health professionals, health IT professionals, data scientists, and those working in government, and nonprofits as well. I'd also like to see activities focused on making new members feel welcome and a part of our community, especially for those attending an AMIA conference for the first time. As we continue to grow larger as a professional society, connecting with new members and helping them forge personal and professional connections is increasingly important.

Those of you who are in AMIA already know that it is an extraordinary organization that has unparalleled opportunities to make a meaningful impact as it has already done throughout the history of the organization. I'm excited about the opportunities to better meet the diverse needs of our membership and towards giving back to an organization that is not only important to me professionally but personally is meaningful as well. As a board member, I will work diligently to advance our organization to be one that not only will succeed today but into the future while also advancing diversity, equity, and inclusion across AMIA and our field.

Informatics Interests

- Consumer health informatics and digital health
- Applied clinical informatics
- Visual analytics
- Research informatics
- Data science
- Career development and mentorship of informatics trainees

AMIA Engagement and Participation

I have been a member of AMIA since 2012 and become more involved over the years. I have actively participated in AMIA conferences through presenting my research and hosting workshops and served as a reviewer for the Annual Symposium, CIC, and Informatics Summit annually. I have also had the privilege of serving on Scientific Programming Committees for several AMIA conferences (2021 CIC, 2020 Informatics Summit Implementation Track, 2017 Joint Translational Summit CRI Track). I am also a reviewer for JAMIA and ACI. Additionally, I have also enjoyed mentoring and advising junior faculty and trainees in AMIA in research and career development.

My engagement in working groups and committees within AMIA has been focused in several areas: Consumer and Pervasive Health Working Group, Visual Analytics Working Group, Women in AMIA and the Women in AMIA Subcommittee for Leadership & Awards, Community of CI Program Directors (marketing committee), PINA, and the Clinical Informatics Community of Practice. I also served as a co-host for the Women in AMIA Networking event hosted at the 2019 Annual Symposium. In 2019, I was named a Fellow of AMIA (FAMIA) and now serve as a FAMIA reviewer.

Participation in other organizations

- HIMSS
- Served on the Board of Directors (2 terms) for North Carolina Healthcare Information & Communications Alliance
- Inaugural member of the NIH All of Us Research Program IRB from 2016-2021 providing expertise in informatics, research informatics, digital health, and interoperability
- NIH National Institute on Drug Abuse Steering Committee for Clinical Trials Network
- Substance Abuse and Mental Health Services Administration (SAMHSA)-funded Screening, Brief Intervention, and Referral to Treatment for Eating Disorders Steering Committee
- NIH National Cancer Institute consultant for the refinement of the Patient-Reported Outcomes version of the CTCAE software system
- PCORI and International Society for Quality of Life Research Workgroup to develop the "User's Guide for Integrating Patient-Reported Outcomes in EHRs"
- IEEE/ACM Conference on Connected Health Technical Programming Committee
- Wireless Health Conference Program Committee (2015, 2016)
- Pervasive Health 2020 Scientific Programming Committee
- Faculty Advisor for the National Med-Peds Residents Association (NMPRA) since 2009 (founded and continue to lead the review process for the annual NMPRA research grant)
- UNC School of Information & Library Science Administrative Board (appointed by UNC Chancellor)
- Founder and Faculty Advisor for two UNC School of Medicine med student interest groups (Med-Peds & Clinical Informatics) to further the pipeline for medical students to be informed about these subspecialties

Education and Experience

Education:

- Current board certifications in Clinical Informatics, Internal Medicine, and Pediatrics
- Master of Management in Clinical Informatics, Fuqua School of Business at Duke University
- National Research Service Award Primary Care Research Fellowship, University of North Carolina at Chapel Hill (UNC)
- Combined Internal Medicine and Pediatrics Residency, Pitt County Memorial Hospital and the Brody School of Medicine
- Doctor of Medicine, Brody School of Medicine at East Carolina University
- Master of Healthcare Administration with Concentration in Health Information Systems and Technology, Department of Healthcare Policy and Administration, UNC Gillings School of Global Public Health
- Graduate and Professional Leadership Development Certificate, UNC Gillings School of Global Public Health
- Bachelor of Arts, Duke University

Professional Experience:

- Consumer Health Clinical Team Lead and Informatician at Google Health (current)
- Course Director, Health IT Business Solutions, Duke School of Medicine Master of Management in Clinical Informatics (current)
- Associate Professor of Medicine and Pediatrics with Permanent Tenure, UNC School of Medicine
- Medical Informatics Director for Digital Health Innovation and Patient Engagement, UNC Health
- Medical Director of Population Health Informatics, UNC Health Alliance (UNC Health's clinically integrated network and ACO)
- Founding Director, UNC Hospitals Clinical Informatics Subspecialty Fellowship Program
- Associate Director, Program on Health & Clinical Informatics, UNC School of Medicine
- Rotation Director for all PGY-1 rotations: Intro to Clinical Informatics, Advanced CI, Advanced Analytics & Data Science, Scholarly Activity Rotation, UNC Hospitals Clinical Informatics Subspecialty Fellowship Program (created curriculum and experiences)
- Assistant Professor of Medicine and Pediatrics, UNC School of Medicine
- PGY-3 Med-Peds Ambulatory Rotation Director, UNC Med-Peds Residency Program
- Associate Director, Health Information Technology Core, UNC NIH-funded Center for Diabetes Translational Research to Reduce Disparities
- Continuity Clinic Director, UNC Med-Peds Residency Program
- Associate Director, UNC Med-Peds Residency Program
- Clinical Instructor and Teaching Fellow of Medicine and Pediatrics, UNC School of Medicine & NRSA Primary Care Research Fellow
- Verizon Connected Healthcare Solutions Strategy Intern
- Health Information Technology Consultant, American Management Systems, Inc. (now CGI, Inc.)
- National Chairperson, Korean-American Intercollegiate Network

Recent Publications

*Indicates trainees. Last author publications are as senior author.

Mikles, S.P.* , Griffin, A.C.* , Chung, A.E. "Health Information Technology to Support Cancer Survivorship Care Planning: A Systematic Review." Journal of the American Medical Informatics Association. In press. Accepted June 2021.

Griffin, A.C.* , Xing, Z.* , Mikles, S.P.* , Bailey, S.C., Khairat, S., Arguello, J., Wang, Y., Chung, A.E. "Information Needs and Perceptions of Chatbots for Hypertension Medication Self-Management: A Mixed Methods Study." JAMIA Open. 2021 Apr 19;4(2):ooab021.

*Griffin, A.C., Leung, T.I., Tenenbaum, J.D., Chung, A.E. "Gender Representation in Biomedical Informatics Leadership and Recognition." Journal of the American Medical Informatics Association, February 2021; ocaa344.

*Morrow, B., Manz, T., Chung, A.E., Gehlenborg, N., Gotz, D. "Periphery Plots for Contextualizing Heterogeneous Time-Based Charts." IEEE Transactions on Visualization and Computer Graphics: 2019 IEEE Visualization Conference (VIS), Vancouver, BC, Canada, 2019, pp. 1-5. IEEE VIS 2019 Best Paper Award.

Griffin, A.C.* , Xing, Z., Khairat, S., Wang, Y., Bailey, S.C., Arguello, J., Chung, A.E. "Conversational Agents for Chronic Disease Self-Management: A Systematic Review." Proceedings of the AMIA Annual Symposium. 2021 Jan 25;2020:504-513. eCollection 2020. Best Paper Award Finalist.

*Griffin, A.C., Topaloglu, U., Davis, S., Chung, A.E. "From Patient Engagement to Precision Oncology: Leveraging Informatics to Advance Cancer Care." Yearbook of Medical Informatics. 2020 Aug;29(1): 235-242.

Chung, A.E., Shoenbill, K., Mitchell, S.A., Rogak, L., Dueck, A., Minasian, L., St. Germain, D., Baumgartner, P., Schrag, D., Bruner, D., Abernathy, A., *Griffin, A.C., Basch, E.M. "Patient Free-Text Reporting of Symptomatic Adverse Events in Cancer Clinical Research using the National Cancer Institute's Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE)." Journal of the American Medical Informatics Association. 2019 Apr 1;26(4):276-285.

Griffin, A., Chung, A.E. "Health Tracking and Information Sharing in the Patient-Centered Era: A Health Information National Trends Survey (HINTS) Study. AMIA Annual Symposium Proceedings. 2020 Mar 4: 2019:1041–1050.

Honors and Awards

- Fellow of the American Medical Informatics Association (FAMIA)
- IEEE VIS Best Paper Award
- 2016 FierceHealthIT's Most Influential Women in Health IT
- 2013 AMIA Distinguished Poster Award

- Office of the National Coordinator for Health Information Technology (ONC) Scholarship
- Academic Pediatric Association Young Investigator Award, 1 of 4 national awardees
- National Clinical Translational Science Award (CTSA) Consortium Child Health Research Fellow Award, recognizes promising translational pediatric research conducted by a trainee
- National Health Services Corps America's Health Care Heroes Appreciation Award
- National Med-Peds Residents' Association (NMPRA) Faculty Award, presented to a med-peds faculty member who has made significant national contributions to advance the specialty of med-peds and NMPRA's mission
- NIH Loan Repayment Award (4 consecutive awards)
- UNC Med-Peds Residency Program Faculty of the Year Award (2016, 2014)
- Dr. James Woods Jr. Faculty Award, presented to one early career junior faculty member at the UNC School of Medicine for their promise as a physician scientist
- UNC School of Medicine Jefferson-Pilot Award presented to an early career junior faculty member at the UNC School of Medicine for innovation in research
- Samuel Brody Scholarship (four-year merit-based scholarship) to the Brody School of Medicine
- NC Albert Schweitzer Fellow
- Delta Omega, National Honorary Public Health Society

Evidence of Strategic Thinking/Experience in Activities of AMIA or another non-profit or institution

I have been responsible for and participated in strategic planning, development, and execution across a number of different roles (nonprofit and for-profit) throughout my career. My experience includes participating in strategy work as a stakeholder and executive sponsor as well as leading a range of activities from planning (utilizing methods such as Hoshin planning) to development and execution of the work to measurement/evaluation of success across enterprise-wide initiatives. I have highlighted some of my recent roles across a large integrated health system (UNC Health, which has 14 hospitals and 400+ clinics across NC and their ACO), an academic med center (UNC School of Medicine), and more recently in industry at Google (current role) that demonstrates my experience. My overall view on strategy is one that is collaborative, seeks to bring individuals and organizations together around a common goal, future-proofing when possible, and focused on results-driven excellence.

As the Medical Informatics Director of Digital Health Innovation and Patient Engagement at UNC Health, I recognized the fragmentation of patient experience across service lines due to silos of strategy and work across the health system. I led the creation of new system-wide governance for patient engagement across clinical, operational, administrative, and IT leadership and the development and execution of that strategy across the portfolio of IT solutions. After this strategic repositioning, we created processes and workstreams to ensure representation across the system. New organizational infrastructure was developed to provide timely input for decision making, better support of operational implementation and unified communications, and creation of standard work. As a result, our team drove portal activations up from <15% to over 60% over a period of 1.5 years with some ambulatory entities reaching

>95% activation rates. I was also responsible for leading the patient-reported outcomes (PRO) initiative across the health system, and developing a roadmap for technology evaluation, solutioning, and implementation across service lines. This included development of processes and playbooks to scale and support implementation, data harmonization work, and mapping and incorporation of PRO common data models that allowed for PRO data to be stored in the research data warehouse. Additionally, I was engaged in strategic planning and business development for revenue cycle, innovation, research informatics, and virtual and remote care. I also led the strategy work to implement FHIR-based APIs at our institution, which directly enabled the collaboration with Apple Health for the beta launch of Health Records (served as UNC lead) and enabled clinical and research infrastructure to advance research across campus.

As Medical Director of Population Health Informatics for UNC Health Alliance (UNC Health's clinically integrated network and ACO), I was involved in strategic and tactical planning and implementation and execution of strategies, including the framework for an evaluation service within the population health analytics team to determine return-on-investment for informatics and IT interventions. I was also directly responsible for strategy involving informatics solutions to enable value-based efforts and translating the strategy into operational tactics to meet payor-based quality metrics and advance high value care and to support COVID health equity initiatives.

As the Associate Director for the UNC School of Medicine Program on Health & Clinical Informatics, I was responsible for developing and executing strategy for research informatics across the medical school and developing partnerships with health affairs schools and UNC. This strategy roadmap included creating and accrediting a new clinical informatics subspecialty fellowship program, which is now in its 3rd year of operation and received commendation for no citation on initial accreditation. As a federally funded physician scientist, I also have extensive expertise in developing and executing strategy for research initiatives including cross-institutional and multi-disciplinary team science and partnerships with nonprofit organizations and federal agencies.

In my current role at Google, I serve as a clinical informatician and clinical team lead for consumer health across several product areas and cross-functional teams, and am responsible for clinical strategic prioritization and strategy execution, and helping guide product development and launches globally. I also lead our development of measurement strategies for demonstrating health impact and ROI.

Contributions to Activities that Support Diversity, Equity, and Inclusion

I believe diversity, equity, and inclusion are critical to the success of AMIA and our field. Although much progress has been made, representation of women and minorities in our field is still lagging and especially in opportunities for leadership and awards. DEI is particularly important to me personally as a female physician scientist and informatician as I am still too often the only female informatician in many forums. I am excited about the steps AMIA has taken to focus on improving DEI specifically and am looking forward to contributing to these efforts as a member of the Board of Directors.

In terms of activities that support DEI in AMIA, I have been involved in Women in AMIA over the years, and served as a co-host for W.I.N.E at the AMIA Annual Symposium (2019), which involved marketing and hosting activities for the event. The event had the largest W.I.N.E. attendance to date. I have also served on the Women in AMIA Subcommittee for Leadership and Awards since 2018, which seeks to advance sponsorship and nominations for women in informatics. We have successfully advanced opportunities for networking and national presentations for our membership and worked together towards providing sponsorship and mentorship opportunities as well.

As one of the first female founding program directors of a clinical informatics fellowship, the lack of women and minority applicants was striking and motivated my work towards building a stronger pipeline for both women and minorities. One of the first steps was to better understand what gaps exist in our field and specifically in clinical informatics as a subspecialty. I mentored a health informatics doctoral student (also a woman) to conduct research to examine gender representation in leadership and awards within AMIA, which was published in JAMIA and highlighted the lack of gender representation particularly among clinical informatics subspecialty fellowship program directors. As a result, I collaborated with a group of women physician informaticians in AMIA to lead a networking event for female medical students, residents/fellows, and attending physician informaticians. From the inaugural event, it was clear that there is a need and desire to bring together women who are physician informaticians. Our Physician Women in AMIA team has worked to develop additional informal programming for 2021, and we recently worked with the American College of Physicians and Women in AMIA to host an international webinar targeting trainees and early and mid-career physicians to foster interest in the specialty and careers in clinical informatics. I have also worked on the AMIA CIPD marketing committee focused on activities to increase diversity in the field of clinical informatics.

In terms of operational clinical informatics, I served as an executive sponsor and informatics lead for several health equity initiatives at UNC Health. During COVID-19, I led several IT teams to design, develop, and implement several software applications and integrated solutions focused on increasing equitable access to COVID-19 tests and vaccinations. This included personally conducting UX/UI design work for multiple conversational agent apps and a custom community web app to allow for increased scheduling support for communities across NC. I also led the strategy for the implementation of automated robo-call and text messaging campaigns to increase outreach to those without Internet or portal access when we recognized the disparities between access to vaccine appointments for those attempting to schedule via phone. We created mechanisms for our patient populations from historically marginalized and socially vulnerable groups to have a direct avenue to schedule without having to compete for vaccine slots. This approach included the development and implementation of cloud-based vaccine scheduling workflows, which enabled our community health workers to provide links to organizations to self-schedule set-aside vaccine appointments directly. Through the strategic implementation of technologies and processes to streamline outreach, we were able to improve vaccine uptake among historically marginalized populations in several weeks post-

intervention (for example, <5% Blacks vaccinated pre-implementation vs. 25% after implementing informatics solutions). As part of this equity work, I worked to help our operational and IT teams to better understand usability issues and operational choices that could potentially exacerbate health disparities. We then worked across teams and business areas to develop mitigation strategies, which have been highly successful overall. I also led the review process for marketing collateral and web artifacts related to COVID-19 and more broadly for patient engagement in partnership with marketing and communication teams to ensure literacy, numeracy, and equity were considered in anything we launched publicly.

As the Medical Informatics Director of Digital Health Innovation and Patient Engagement, I served as executive sponsor and lead for a number of activities that impact health equity through the implementation of health IT solutions. In that role, I served as an advocate and ambassador to drive strategy and change particularly in the areas of patient portal access and policies to ensure that health equity is considered throughout various stages of design, implementation, and evaluation. I also conducted informal sessions for IT staff focused on user-centered design to teach IT analysts how to think about how we may introduce inequity throughout the life cycle of software development.