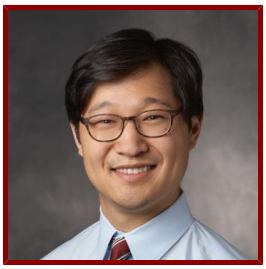
Stanford



Andrew Y. Chang, MD, MS(Epi)

Bio

BIO

Attending Physician in Cardiology (Fee-Basis) at VA Palo Alto Healthcare System, Post-doctoral Research Fellow at Stanford Cardiovascular Institute, PhD Candidate in Epidemiology and Population Health Sciences. Graduate of Stanford Internal Medicine / Global Health Residency / Chief Resident, and Cardiology Fellowship Programs.

My professional interests include epidemiology and health services research focused on heart disease and environmental determinants of cardiovascular disorders, particularly in global vulnerable populations. I also have a longstanding interest in studying and improving the quality of care for neglected tropical heart diseases of low- and middle-income countries, chief among them rheumatic heart disease. I consider myself methodologically agnostic, and incorporate classic descriptive/analytic epidemiology, big data/outcomes analysis, health systems modeling, and geographic information services techniques in my work.

INSTITUTE AFFILIATIONS

- Member (Postdoc), Cardiovascular Institute

HONORS AND AWARDS

- Alpha Omega Alpha Medical Honor Society, AOA, Stanford University Chapter (2017)
- Gold Humanism Honor Society, Arnold P. Gold Foundation (2012)
- TL1 Gold Ribbon Presentation, Association for Clinical and Translational Science (2018)
- Stanford Cardiovascular Institute Travel Award, Stanford Cardiovascular Institute (2018)
- Johnson and Johnson Global Health Scholar, Yale/Stanford Johnson & Johnson Global Health Scholars Program (2015)
- Johnson and Johnson Global Health Scholar, Yale/Stanford Johnson & Johnson Global Health Scholars Program (2014)
- Asian Pacific American Medical Student Association Global Health Fellowship, Asian Pacific American Medical Student Association (2012)
- Stanford Medical Scholars Research Fellowship, Stanford University School of Medicine (2009-2011)
- The John E. Linck III Memorial Graduation Prize, Yale University (2008)
- Yale College Dean’s Research Fellowship in the Sciences, Yale University (2007)
- Yale Science and Engineering Research Presentation Travel Prize, Yale University (2007)
- 1st Place Presentation, Yale Undergraduate Research Symposium in the Biological Sciences, Yale University (2007)
- The Paul K. and Evalyn Elizabeth Cook Richter Summer Fellowship, Yale University (2007)
- The Gary Stein Memorial Internship, Yale University (2006)

- Robert C. Byrd Congressional Honors Scholarship, United States Department of Education (2005)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Scientific Subcommittee Member; Council on Rheumatic Fever, Endocarditis, and Kawasaki Disease, American Heart Association (2020 - present)
- Faculty Fellow, Stanford Center for Innovation in Global Health (2016 - present)
- Representative, Chief Resident's Council, Department of Graduate Medical Education, Stanford University Medical Center (2016 - 2017)
- Representative,Committee on Residency Reform, Department of Medicine, Stanford University Medical Center (2014 - 2016)
- Resident Member, American College of Cardiology (2015 - 2017)
- Resident Member, American College of Physicians (2013 - 2016)
- Member, Stanford Center for Population Health Sciences (2015 - present)
- Member, Stanford Society of Physician Scholars (2013 - present)

EDUCATION AND CERTIFICATIONS

- Fellowship, Stanford Hospitals & Clinics , Cardiology (2021)
- Chief Resident, Stanford Hospitals & Clinics , Internal Medicine (2017)
- Residency, Stanford Hospital & Clinics , Internal Medicine (2016)
- MS, Stanford University , Epidemiology, Clinical Research (2018)
- MD, Stanford University , Clinical Research, Immunology, Global Health (2013)
- BS, Yale University , Molecular, Cellular & Developmental Biology (2008)
- Non-degree Program, American Heart Association (AHA) Ten-Day Seminar on the Epidemiology and Prevention of Cardiovascular Disease , Epidemiology (2017)
- Non-degree Program, Hasso Plattner Institute of Design at Stanford University , Entrepreneurial Design for Extreme Affordability Program (2012)

SERVICE, VOLUNTEER, AND COMMUNITY WORK

- Hepatitis B Clinic Coordinator (2009 - 2009)
- Clinical Volunteer (2008 - 2013)
- Intern (2006 - 2008)
- Health Educator (2004 - 2005)
- Community Associate (2009 - 2011)
- Johnson & Johnson Global Health Scholar (2015)

PATENTS

- Andrew Chang, Carey Lee, Pamela Pavkov, Karen Lee, Michael Strasser. "United States Patent Attorney docket number: S11-190 Provisional Patent: “Low Cost Bubble CPAP Device”", Jun 1, 2011

PERSONAL INTERESTS

Travel, History, Anthroplogy, Writing, Art Appreciation, Cooking, Football, Hiking

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research interests center around the epidemiology, environmental determinants, and health services dimensions of heart disease, with an emphasis on vulnerable populations, both international and domestic. Current projects include the development of novel care quality metrics for use in rheumatic heart disease in East Africa, testing of low sodium salt substitutes in South Asia, describing the global patterns of cardiovascular multimorbidity,

and assessing the cardiovascular impacts of cyclical climate change-associated major environmental events. Other research interests include cost-effectiveness analysis, health economics, and device/service innovation for low-resource settings.

CURRENT CLINICAL INTERESTS

- Cardiovascular Disease
- Rheumatic Heart Disease
- Valvular Heart Disease
- Atrial Fibrillation
- Anticoagulation
- Echocardiography

LAB AFFILIATIONS

- Peter Lee (9/3/2010 - - 10/31/2013)

Professional

WORK EXPERIENCE

- Researcher - Stanford University School of Medicine, Department of Hematology (2009 - 2012)
- Teaching Assistant - Stanford University School of Medicine (2010 - 2011)
- Community Associate - Stanford University Graduate Life Office (2009 - 2011)
- Research Assistant - Yale University School of Medicine, Department of Neurobiology (2005 - 2008)

Publications

PUBLICATIONS

- **Pre-intervention wait time and survival in people with rheumatic heart disease in Uganda.** *The Annals of thoracic surgery*
  Doh, C. Y., An, C., Chang, A. Y., Rwebembera, J., Mwambu, T. P., Beaton, A. Z., Nakagaayi, D., Ruda Vega, P. F., Sable, C. A., Longenecker, C. T., Lwabi, P.
  2024

- **Outcomes and care quality metrics for people living with rheumatic heart disease and atrial fibrillation in Uganda.** *Heart rhythm O2*
  Opara, C. C., Lan, R. H., Rwebembera, J., Okello, E., Watkins, D. A., Chang, A. Y., Longenecker, C. T.
  2024; 5 (4): 201-208

- **Interviewer biases in medical survey data: The example of blood pressure measurements.** *PNAS nexus*
  Geldsetzer, P., Chang, A. Y., Meijer, E., Sudharsanan, N., Charu, V., Kramlinger, P., Haarburger, R.
  2024; 3 (3): pgae109

- **Clinical Profile and Outcomes of Rheumatic Heart Disease Patients Undergoing Surgical Valve Procedures in Uganda.** *Global heart*
  Rwebembera, J., Chang, A. Y., Kitooleko, S. M., Kaudha, G., de Loizaga, S., Nalule, M., Ahabwe, K., Zhang, W., Okello, E., Sinha, P., Mwambu, T., Sable, C., Beaton, et al
  2023; 18 (1): 62

- **Healthcare provider-targeted mobile applications to diagnose, screen, or monitor communicable diseases of public health importance in low- and middle-income countries: A systematic review.** *PLOS digital health*
  Geldsetzer, P., Flores, S., Flores, B., Rogers, A. B., Chang, A. Y.
  2023; 2 (10): e0000156

- **Effectiveness of a community health worker-led low-sodium salt intervention to reduce blood pressure in rural Bangladesh: protocol for a cluster randomized controlled trial.** *Trials*
  Chang, A. Y., Rahman, M., Talukder, A., Shah, H., Mridha, M. K., Hasan, M., Sarker, M., Geldsetzer, P.
  2023; 24 (1): 480

- **Effectiveness of a community health worker-led low-sodium salt intervention to reduce blood pressure in rural Bangladesh: protocol for a cluster randomized controlled trial** *Trials*
  Chang, A. Y., Rahman, M., Talukder, A., Shah, H., Mridha, M. K., Hasan, M., Sarker, M., Geldsetzer, P.
  2023; 24 (480): 480
- **Impact of a Multidisciplinary Curriculum Training Students and Residents in Tobacco Cessation Strategies for Adult Caregivers of Children.** *MedEdPORTAL : the journal of teaching and learning resources*
  Gribben, V., Chang, A. Y., Ling, P., Rasmussen, J., Tebb, K., Fuentes-Afflick, E., Marbin, J.
  2023; 19: 11313
- **What We Lost in the Fire: Endemic Tropical Heart Diseases in the Time of COVID-19.** *The American journal of tropical medicine and hygiene*
  Chang, A. Y., Zühlke, L., Ribeiro, A. L., Barry, M., Okello, E., Longenecker, C. T.
  2023
- **Association between Obesity and Length of COVID-19 Hospitalization: Unexpected Insights from the American Heart Association National COVID-19 Registry.** *Journal of obesity & metabolic syndrome*
  Collins, W. J., Chang, A. Y., Weng, Y., Dahlen, A., O'Brien, C. G., Hom, J., Ahuja, N., Rodriguez, F., Rohatgi, N.
  2022
- **Impacts of a Multicenter Medical Education Curriculum for Training Pediatric Residents on Tobacco Cessation for Adult Caregivers of Pediatric Patients.** *Clinical pediatrics*
  Gribben, V., Kosack, A., Garell, C., Shaikh, U., Huang, M., Chang, A. Y., Rasmussen, J., Tebb, K., Marbin, J.
  2022: 99228221113783
- **A systematic review of healthcare provider-targeted mobile applications for non-communicable diseases in low- and middle-income countries.** *NPJ digital medicine*
  Geldsetzer, P., Flores, S., Wang, G., Flores, B., Rogers, A. B., Bunker, A., Chang, A. Y., Tisdale, R.
  2022; 5 (1): 99
- **Aging Hearts in a Hotter, More Turbulent World: The Impacts of Climate Change on the Cardiovascular Health of Older Adults.** *Current cardiology reports*
  Chang, A. Y., Tan, A. X., Nadeau, K. C., Odden, M. C.
  2022
- **Mortality Along the Rheumatic Heart Disease Cascade of Care in Uganda.** *Circulation. Cardiovascular quality and outcomes*
  Chang, A. Y., Barry, M., Bendavid, E., Watkins, D., Beaton, A. Z., Lwabi, P., Ssinabulya, I., Longenecker, C. T., Okello, E.
  1800; 15 (1): e008445
- **Coronary anomalies** *EACVI Handbook of Cardiovascular CT*
  Chang, A., Rogers, I., Neiman, K.
  edited by Gaemperli, O., Maurovich-Horvat, P., Nieman, o., Pontone, G. K., Pugliese, F.
  Oxford University Press.2022; 1: 155–C2.8.P58
- **Recent Advances in the Rheumatic Fever and Rheumatic Heart Disease Continuum** *Pathogens*
  Rwebembera, J., Nascimento, B. R., Minja, N. W., de Loizaga, S., Aliku, T., Afonso dos Santos, L. P., Galdino, B. F., Corte, L. S., Silva, V. R., Chang, A. Y., Dutra, W. O., Pereira Nunes, M. C., Beaton, et al
  2022; 11 (2): 179
- **Scientific Advances in Rheumatic Fever/Rheumatic Heart Disease Control**
  Chang, A. Y., Rwebembera, J., Nascimento, B. R., Minja, N. W., de Loizaga, S., Aliku, T., dos Santo, L. P., Galdino, B. F., Corte, L. S., Silva, V. R., Dutra, W. O., Nunes, M. C., Beaton, et al
  Multidisciplinary Digital Publishing Institute.
  2022 ; Encyclopedia.pub
- **Preoperative Computed Tomography Angiography Reveals Leaflet-Specific Calcification and Excursion Patterns in Aortic Stenosis.** *Circulation. Cardiovascular imaging*
  Chen, I. Y., Vedula, V., Malik, S. B., Liang, T., Chang, A. Y., Chung, K. S., Sayed, N., Tsao, P. S., Giacomini, J. C., Marsden, A. L., Wu, J. C.
  1800: CIRCIMAGING121012884
- **N-Terminal Pro-B-Type Natriuretic Peptide as a Biomarker for the Severity and Outcomes With COVID-19 in a Nationwide Hospitalized Cohort.** *Journal of the American Heart Association*

O'Donnell, C., Ashland, M. D., Vasti, E. C., Lu, Y., Chang, A. Y., Wang, P., Daniels, L. B., de Lemos, J. A., Morrow, D. A., Rodriguez, F., O'Brien, C. G.
2021: e022913

- **Health system and patient-level factors serving as facilitators and barriers to rheumatic heart disease care in Sudan.** *Global health research and policy*
  Edwards, J. G., Barry, M., Essam, D., Elsayed, M., Abdulkarim, M., Elhossein, B. M., Mohammed, Z. H., Elnogomi, A., Elfaki, A. S., Elsayed, A., Chang, A. Y.
  2021; 6 (1): 35
- **Clinical Outcomes, Echocardiographic Findings, and Care Quality Metrics for People Living with HIV and Rheumatic Heart Disease in Uganda.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*
  Chang, A. Y., Rwebembera, J., Bendavid, E., Okello, E., Barry, M., Beaton, A. Z., Haeffele, C., Webel, A. R., Kityo, C., Longenecker, C. T.
  2021
- **The Need to Expand the Framework of Environmental Determinants of Cardiovascular Health From Climate Change to Planetary Health: Trial by Wildfire.** *Circulation*
  Chang, A. Y., Barry, M., Harrington, R. A.
  2021; 143 (21): 2029-2031
- **The Impact of Novel Coronavirus COVID-19 on Non-Communicable Disease Patients and Health Systems: A Review.** *Journal of internal medicine*
  Chang, A. Y., Cullen, M. R., Harrington, R. A., Barry, M.
  2020
- **Outcomes and Care Quality Metrics for Women of Reproductive Age Living With Rheumatic Heart Disease in Uganda.** *Journal of the American Heart Association*
  Chang, A. Y., Nabbaale, J. n., Okello, E. n., Ssinabulya, I. n., Barry, M. n., Beaton, A. Z., Webel, A. R., Longenecker, C. T.
  2020: e015562
- **Breast cancer induces systemic immune changes on cytokine signaling in peripheral blood monocytes and lymphocytes.** *EBioMedicine*
  Wang, L. n., Simons, D. L., Lu, X. n., Tu, T. Y., Avalos, C. n., Chang, A. Y., Dirbas, F. M., Yim, J. H., Waisman, J. n., Lee, P. P.
  2020; 52: 102631
- **Cost-effectiveness of Canakinumab for Prevention of Recurrent Cardiovascular Events.** *JAMA cardiology*
  Sehested, T. S., Bjerre, J., Ku, S., Chang, A., Jahansouz, A., Owens, D. K., Hlatky, M. A., Goldhaber-Fiebert, J. D.
  2019
- **Interventions to Reduce Ethnic and Racial Disparities in Dyslipidemia Management.** *Current treatment options in cardiovascular medicine*
  Chang, A. Y., Abou-Arraj, N. E., Rodriguez, F. n.
  2019; 21 (5): 24
- **Association of Healthcare Plan with Atrial Fibrillation Prescription Patterns.** *Clinical cardiology*
  Chang, A. Y., Askari, M. n., Fan, J. n., Heidenreich, P. A., Ho, P. M., Mahaffey, K. W., Ullal, A. J., Perino, A. C., Turakhia, M. P.
  2018
- **Patient and facility variation in costs of catheter ablation for atrial fibrillation.** *Journal of cardiovascular electrophysiology*
  Perino, A. C., Fan, J. n., Schmitt, S. n., Kaiser, D. W., Heidenreich, P. A., Narayan, S. M., Wang, P. J., Chang, A. Y., Turakhia, M. P.
  2018
- **Motivations of women in Uganda living with rheumatic heart disease: A mixed methods study of experiences in stigma, childbearing, anticoagulation, and contraception.** *PloS one*
  Chang, A. Y., Nabbaale, J. n., Nalubwama, H. n., Okello, E. n., Ssinabulya, I. n., Longenecker, C. T., Webel, A. R.
  2018; 13 (3): e0194030
- **IL6 Signaling in Peripheral Blood T Cells Predicts Clinical Outcome in Breast Cancer.** *Cancer research*
  Wang, L., Miyahira, A. K., Simons, D. L., Lu, X., Chang, A. Y., Wang, C., Suni, M. A., Maino, V. C., Dirbas, F. M., Yim, J., Waisman, J., Lee, P. P.
  2017; 77 (5): 1119-1126
- **Regenerative Medicine: Potential Mechanisms of Cardiac Recovery in Takotsubo Cardiomyopathy.** *Current treatment options in cardiovascular medicine*
  Chang, A. Y., Kittle, J. T., Wu, S. M.

2016; 18 (3): 20-?

- **The Global Health Implications of e-Cigarettes.** *JAMA*
  Chang, A. Y., Barry, M.
  2015; 314 (7): 663-664
- **Evaluating the Cost-effectiveness of Catheter Ablation of Atrial Fibrillation.** *Arrhythmia & electrophysiology review*
  Chang, A. Y., Kaiser, D., Ullal, A., Perino, A. C., Heidenreich, P. A., Turakhia, M. P.
  2014; 3 (3): 177-183
- **Trial of Zolpidem, Eszopiclone, and Other GABA Agonists in a Patient with Progressive Supranuclear Palsy** *Case Reports in Medicine*
  Chang, A. Y., Weirich, E.
  2014; 2014: 5
- **Trial of Zolpidem, Eszopiclone, and Other GABA Agonists in a Patient with Progressive Supranuclear Palsy** *CASE REPORTS IN MEDICINE*
  Chang, A., Weirich, E.
  2014: 107064
- **Spatial organization of dendritic cells within tumor draining lymph nodes impacts clinical outcome in breast cancer patients** *JOURNAL OF TRANSLATIONAL MEDICINE*
  Chang, A. Y., Bhattacharya, N., Mu, J., Setiadi, A. F., Carcamo-Cavazos, V., Lee, G. H., Simons, D. L., Yadegarynia, S., Hemati, K., Kapelner, A., Ming, Z., Krag, D. N., Schwartz, et al
  2013; 11
- **Center-surround vs. distance-independent lateral connectivity in the olfactory bulb** *FRONTIERS IN NEURAL CIRCUITS*
  Kim, D. H., Chang, A. Y., McTavish, T. S., Pateland, H. K., Willhite, D. C.
  2012; 6
- **Learning to live together: harnessing regulatory T cells to induce organ transplant tolerance.** *Yale journal of biology and medicine*
  Chang, A. Y., Bhattacharya, N.
  2011; 84 (4): 345-351
- **Lateral connectivity in the olfactory bulb is sparse and segregated** *FRONTIERS IN NEURAL CIRCUITS*
  Kim, D. H., Phillips, M. E., Chang, A. Y., Patel, H. K., Nguyen, K. T., Willhite, D. C.
  2011; 5
- **Hydrophilic Graft Modification of a Commercial Crystalline Polyolefin** *J. Polym. Sci. Part A: Polym. Chem.*
  Jihoon Shin, Andrew Y. Chang, Lacie V. Brownell, Ira O. Racoma, Coreen H. Ozawa, Ho-Yong Chung, Shufu Peng, Chulsung Bae
  2008; 46: 3533-3545
- **Regioselective functionalization of high-molecular-weight crystalline polyolefins via C-H activation of methyl side group** *Polymer Preprints*
  Hoyong Chung, Andrew Y. Chang, Ira O. Racoma, Coreen H. Ozawa, Chulsung Bae
  2006; 47: 247-248

PRESENTATIONS

- Characteristics and Motivations of Women of Reproductive Age in Uganda with Rheumatic Heart Disease: A Mixed Methods Study - Consortium of Universities for Global Health Annual Meeting (2017)
- Recurrent Seizure-Inducted Takotsubo Cardiomyopathy over Twelve Years with Interval Complete Resolution of Ventricular Dysfunction - ACP Northern California Annual Meeting (2005)
- Cardiovascular Disease in East Africa: Two Cases from the Johnson & Johnson Global Health Scholars Program - Grand Rounds, Stanford University Department of Medicine (2017)
- Extreme CPAP: Developing a Low-Cost Respiratory Support Device for Bangladesh - TEDxStanford Conference (2011)
- A Cross-Generational Approach to Promoting Productivity and Resilience in Academic Medicine - Stanford Teaching and Mentoring Academy Medical and Bioscience Education Seminar (2017)
- Improving Housestaff Wellness in Medicine Residency - Stanford Innovations in Medical Education Conference (2017)
- Risk Factors for the Development of Ocular Graft Versus Host Disease after Hematopoietic Cell Transplantation - Association for Research in Vision and Ophthalmology (5/6/2012 - 5/9/2012)
- Specificity of Mitral and Tufted Cell Lateral Connectivity in the Olfactory Bulb - Yale University (10/6/2007)