

BIOGRAPHICAL SKETCH

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NAME: Tucker, Joseph David

eRA COMMONS USER NAME: jtucker4

POSITION TITLE: Associate Professor of Medicine

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Swarthmore College, PA, USA	B.A.	05/2000	Biology/Chemistry
University of North Carolina at Chapel Hill, NC, USA	M.D.	12/2004	Medicine
University of California San Francisco, CA, USA	Residency	06/2007	Internal Medicine
Harvard University, Cambridge, MA, USA	Postdoc	06/2009	Infectious Diseases
Harvard University, Cambridge, MA, USA	A.M.	12/2010	RSEA: China Studies
London School of Hygiene and Tropical Medicine, London, UK	Ph.D.	06/2014	Public Health

A. Personal Statement

I am a physician researcher focused on open innovation and related crowdsourcing methods to spur creative new ideas. Crowdsourcing allows diverse groups of individuals to collectively solve a problem and then implement solutions. I have organized 62 crowdsourcing challenges to improve health, including 11 global challenge contests. Finalist ideas from these challenge contests have been included in World Health Organization guidelines, changed provincial and national health policies, and formed basis of new public health interventions. Data from six randomized controlled trials suggest that crowdsourcing challenges are effective. My team's ongoing research uses crowdsourcing to enhance HIV service delivery among men who have sex with men in China (PI, NIAID 1R01AI114310), to use pay-it-forward to spur gonorrhea and chlamydia testing in China (PI, NIAID K24AI143471) and to create youth-friendly HIV self-testing services in Nigeria (Co-PI, NICHD UG3HD096929). My team works in partnership with the UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR) Social Innovation in Health Initiative as a China hub for social innovation.

1. Han, L., Chen, A., Wei, S., Ong, J.J., Iwelunmor, J., **Tucker, J.D.** (2018) Crowdsourcing in health and health research: a practical guide. Geneva: World Health Organization; 2018. WHO/TDR/SIHI/SESH. TDR/STRA/18.4. Licence: CC BY-NC-SA 3.0 IGO.
2. Tang W., Wei C., Cao B., **Tucker, J.D.** (2018) Crowdsourcing to expand HIV testing among men who have sex with men in China: A closed cohort stepped wedge cluster randomized controlled trial. PloS Medicine. 15(8):e1002645. doi: 10.1371/journal.pmed.1002645
3. Li KT, Tang W, Wu D, ..., **Tucker JD.** (2019) Pay-it-forward strategy to enhance uptake of dual gonorrhea and chlamydia testing among men who have sex with men in China: a pragmatic, quasi-experimental study. Lancet Infect Dis. 2019 Jan;19(1):76-82. doi:10.1016/S1473-3099(18)30556-5. PubMed PMID: 30587296.

B. Positions and Honors**Positions and Employment**

2000	Boren Scholar, Institute for International Education National Security Education Program, Qingdao Provincial Centers for Disease Control, Qingdao, PRC
2001	Chinese I-powerment Project Coordinator, with Myron Cohen (UNC), China Centers for Disease Control, Beijing, PRC

2003-2004 Program Manager, China National STD Center, with Dr. Myron Cohen (UNC) and Dr. Xiang-Sheng Chen (NCSTD), Nanjing, PRC

2005 Advisor, China CIPRA Epidemiology and Project Management Divisions

2008–2010 Fellow, Fogarty International Center Clinical Research Program

2010–2012 Instructor/Assistant, Harvard Medical School/Massachusetts General Hospital

2010–2016 Associate, Harvard Asia Center

2012– Adjunct Assistant Professor, Chinese University Hong Kong Faculty of Medicine

2012–2017 Assistant Professor (tenure-track) and Director of UNC Project – China, UNC Chapel Hill

2013- Co-Director, UNC-South China STI Research Training Center, Guangzhou, China

2017- Associate Professor with Tenure, UNC Chapel Hill School of Medicine

2018- Associate Professor (part-time), London School of Hygiene and Tropical Medicine

Other Experience and Professional Memberships

2006- Editorial Board Member, *Sexually Transmitted Diseases*

2008-2010 Founder and member, Massachusetts General Hospital Syphilis Working Group

2010- Hong Kong Research Grants Council, External Reviewer

2010- Associate Editor and Editorial Board Member, *BMC Infectious Diseases*

2011 NIH Fogarty Center Fellowship Selection Committee, NIH Fogarty Scholar Committee

2012-2013 World Health Organization HIV Guideline Contributor, Geneva, Switzerland

2013-2015 PLoS ONE Academic Editor

2013-2015 Member, International AIDS Society HIV Cure Psychosocial Working Group

2013- Ad hoc NIH reviewer, GID ZRG1 IDM-U (56) 11/1/2013, ZRG1 IDM-U (55), DIRH 10/10/2018

2014- Adjunct Lecturer, Tsinghua University Public Health Center

2014-2015 International AIDS Society “Towards a Cure” International Executive Committee

2014-2016 Executive Committee, HIV Cure Initiative (Seattle, Washington, US)

2014 Temporary Advisor, World Health Organization Western Pacific Region

2014- Co-chair, ASTMH-BWH Postdoctoral Fellowship Selection Committee

2014 Co-chair, 18th International Union Against STIs, Asia Pacific Congress Scientific Committee

2015- Editorial Board Member and Associate Editor, *Sexually Transmitted Infections*

2015- Peer Reviewer, 2015 World Health Organization HIV Testing Guidelines

2015- Peer Reviewer, 2015 WHO Interim When to Start ARV and PrEP Guidelines

2016- Sexually Transmitted Infection Section Chief, *BMC Infectious Diseases*

2016 Peer Reviewer, WHO Guidelines on HIV Self-Testing and Partner Notification

2017-2018 Scientific Committee, 2nd & 3rd Asia Pacific Conference on AIDS & Co-Infections, Hong Kong

2018 Peer Reviewer, WHO HIV Self-testing Toolkit

2019- Peer Reviewer, 2019 WHO Consolidated Guidelines on HIV Testing Services

2019-2025 Board of Directors, International Society for Sexually Transmitted Diseases Research

Ad-hoc reviewer for *The New England Journal of Medicine*, *The Lancet*, *PLoS Medicine*, *TLID*, *BMJ*

Honors

1996-2000 Swarthmore College Merit Scholarship

2000 Leo Leva Award for “unusual promise” in Biology, Swarthmore College

2000 Cum Laude graduate of Swarthmore College

2003-2004 Kenan Scholar, UNC Chapel Hill School of Medicine

2009-2010 Foreign Language Areas Studies Harvard nomination

2010 Massachusetts General Hospital Executive Committee on Research Award – Scored 18th out of 147 MGH applicants but deferred due to K01 NIH funding

2009-2010 Asia Center Scholarship, Harvard University Regional Studies East Asia Program

2009-2010 Burroughs Wellcome Fund/American Society of Tropical Medicine and Hygiene (BWF/ASTMH) Junior Faculty Fellowship in Tropical Infectious Diseases

2010- Renaissance Weekend Participant, based on innovation and multi-disciplinary work

2011 National CFAR Young Investigator Award (Duke University, Durham, NC)

2012-2015 NIH Early Career Reviewer, UNC CFAR Developmental Award Reviewer

2012-2017 Council on Foreign Relations Term Member

2015 Invited Speaker, WHO Biregional Conference on HIV Implementation Science (Tokyo, Japan)

2015 Invited Speaker, UNAIDS Conference on Democratizing HIV Testing (Geneva, Switzerland)

2016	Invited Speaker, WHO SEARO Regional Hepatitis Workshop (Jakarta, Indonesia)
2017	Invited Speaker and Panel Co-Chair, 2 nd Asia Pacific Conference on AIDS (Hong Kong)
2018-	WHO/TDR Global Working Group
2019	Team Leader, World Food Program/BMGF Innovation Bootcamp, November 4-8 th , 2019
2019	UNAIDS Health Innovation Exchange, selected as one of 20 innovators to join WHA side event

C. Contribution to Science

1. My early publications documented the dramatic increase in syphilis cases in the People's Republic of China, partly as a result of a sexual revolution and partly related to lapses in routine screening. These publications found that key populations such as men who have sex with men faced substantial barriers to accessing high-quality sexual health services. These publications provided evidence to inform China's first national syphilis control and prevention plan (2010-2020) and re-configure testing. I was the primary investigator or co-investigator on all of these studies.
 - a. Tucker, J.D., Chen, X.S., Peeling, R.W. (2010). Syphilis and Social Upheaval in China. *New England Journal of Medicine*. 362(18): 1658-1661. PMID: 20445179.
 - b. Tucker, J.D., Bu, J., Brown, L.B., Yin, Y.P., Chen, X.S., Cohen, M.S. (2010). Accelerating Syphilis Screening through Novel Rapid Syphilis Testing: A Systematic Review. *Lancet Infectious Diseases*. 10(6): 381-386. PMID: 20510278.
 - c. Tucker, J.D., Cohen, M.S. (2011). China's syphilis epidemic: Epidemiology, proximate determinants of spread, and control responses. *Current Opinion in Infectious Diseases*. 24(1):50-5. PMID: 21150594.
 - d. Tucker, J.D., Yin, Y.P., Wang, B., Chen, X.S., Cohen, M.S. (2011). An Expanding Syphilis Epidemic in China: Epidemiology, Behavioral Risk, and Control Strategies with a Focus on Low-Tier Female Sex Workers and Men Who Have Sex With Men. *Sexually Transmitted Infection*. 87 Suppl 2:ii16-8. PMC3306605.
2. Given the importance of expanding HIV testing, I helped to design and evaluate several pilot programs to increase HIV self-testing. My team's 2014 *JAIDS* study of HIV self-testing in China was the first to determine the frequency of HIVST in China. I served as a member of a World Health Organization technical working group on HIV self-testing that met during the International AIDS Conference in Vancouver and was a peer reviewer for the 2016 WHO Guidelines on HIV Self-testing and Partner Notification.
 - a. Han L, Bien CH, Wei C, Muessig K, Yang M, Liu F, Yang L, Meng G, Emch M, Tucker JD. (2014) An Online Survey of HIV Self-Testing among MSM in China: Implications for Expanding HIV Testing Among Key Populations. *JAIDS*. 67: 216-221. PMC4162828.
 - b. Tucker JD, Wei C, Pendse R, Lo Y. (2015) HIV self-testing among key populations: an implementation science approach to evaluating self-testing. *Journal of Virus Eradication*. 1(1): 38-42.
 - c. Zhong F., Tang W., Cheng W., ..., Tucker, J.D., Xu H. (2016) Acceptability and feasibility of a social entrepreneurship testing model to promote HIV self-testing and linkage to care among MSM. *HIV Medicine*. 18:376-382. PMC5340630.
 - d. Qin Y, Han L, Babbitt A, Walker JS, Liu F, Thirumurthy H, Tang W, Tucker JD. (2018) Experiences using and organizing HIV self-testing. *AIDS*. 2018 32:371-381. PMID: 29194120; PMC5758403.
3. Given the need for innovation in sexual health services, I formed a program called SESH – social entrepreneurship to spur health. This research group uses crowdsourcing and other entrepreneurial tools to advance sexual health research. Our SESH program has organized a total of 40 crowdsourcing challenge contests. SESH was recognized by the WHO-TDR program as one of the top 24 global innovators as part of the social innovation in health initiative.
 - a. Tucker, J.D., Fenton, K.A, Peckham, R., Peeling, R.W. (2012). SESH: A New Approach for Enabling Delivery of Sexual Health Services Among Most-At-Risk-Populations. *PLoS Medicine*. 9(7):e1001266. PMC3398968.
 - b. Zhang, Y., Kim, J., Liu, F., Tso, L., Tang, W., Wei, C., Bayus, B., Tucker, J.D. Creative contributory contests (CCC) to spur innovation in sexual health: Two cases and a guide for implementation. 2015. *Sexually Transmitted Diseases*. 42(11):625-628. PMC4610177.

- c. Cheng, W., Cai, Y., Tang, W.,, Tucker, J.D., Wang, M.. Providing HIV-related services in China for men who have sex with men. (2016) Bull World Health Organ. 94(3):222-7. PMC4773928.
 - d. Li K., Tang W., Wu D., ... Tucker, J.D. Pay-it-forward strategy to enhance uptake of dual gonorrhea and chlamydia testing among men who have sex with men in China: a pragmatic, quasi-experimental study. (2019) The Lancet Infectious Diseases. 19:76-82.
4. The high rates of smartphone use among young key populations in China create a potential opportunity for public health intervention. I led several cross-sectional and longitudinal surveys to better understand how online interventions could be used to enhance HIV service delivery for MSM in China. This led to a WHO-China commission on the sexual health needs of MSM and transgender individuals that was presented at the *Lancet*-CAMS Health Summit in 2017.
 - a. Bien C.H., Best J.M., Muessig K.E., Wei C., Han L., Tucker J.D. (2015) Gay apps for seeking sex partners in China: Implications for MSM sexual health. AIDS & Behavior. 19(6):941-6. PMC4475493.
 - b. Tang W, Mao J, Tang S,, Tucker J.D. (2016) Disclosure of sexual orientation in MSM in China: a cross-sectional survey. Lancet. 388 Suppl 1: S68.
 - c. Tang S., Tang W., Meyers,, Tucker J.D. (2016) HIV and syphilis among MSM and transgender individuals in China: a scoping review. Lancet Suppl 1: S74.
 5. Building on my crowdsourcing research experience, I organized six pragmatic RCTs to evaluate participatory approaches to promoting sexual health. The recently completed stepped wedge trial showed a substantial increase in HIV self-testing ($P < 0.001$) following the crowdsourced challenge intervention. I am the PI on an NIAID R01 evaluating crowdsourcing to promote HIV testing among MSM. I also led the development of a WHO/TDR/SIH/SESH practical guide on crowdsourcing in health and health research.
 - a. Tang W., Han L., Best J., ... , Tucker J.D. (2016) Crowdsourcing HIV Test Promotion Videos: A Noninferiority Randomized Controlled Trial in China. Clin Infect Dis. 62:1436-42. PMC4872295.
 - b. Tang W., Mao J., Liu C., ... , Tucker J.D.; SESH study group. (2016). Crowdsourcing health communication about condom use in men who have sex with men in China: a randomised controlled trial. Lancet. 388 Suppl 1: S73. PMID27968891.
 - c. Tang W., Wei C., Cao B., Tucker, J.D. (2018) Crowdsourcing to expand HIV testing among men who have sex with men in China: A closed cohort stepped wedge cluster randomized controlled trial. PloS Medicine. 15(8):e1002645. doi: 10.1371/journal.pmed.1002645

Complete List of Published Work in MyBibliography (299 manuscripts):

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/40445286/?sort=date&direction=ascending>

D. Additional Information: Research Support

Ongoing Research Support

NICHD UG3HD096929 Tucker/Iwelunmor/Ezechi (PI) 09/01/2018-08/31/2020

PATC3H Program

ITEST: Innovative Tools to Expand Youth-Friendly HIV Self-Testing

This cooperative grant uses crowdsourcing approaches to expand HIV self-testing among Nigerian youth.

Role: Co-PI

NIAID R01 AI114310 Tucker (lead PI) / Wei (Co-PI) 09/17/2014-08/31/2020

Spurring Innovation in HIV Testing and Linkage: A Crowdsourcing Approach

The major goal of this research is to design, implement, and evaluate a crowdsourcing approach to promoting HIV testing and linkage among young MSM in China.

Role: PI

NIAID K24AI143471 Tucker 01/07/2019 – 12/31/2023

Mentoring Multidisciplinary Global HIV Patient-Oriented Research

The goal of this career development award is to build capacity for high-quality HIV prevention research in global settings.

Role: PI

MRC Joint Global Health Trials Developmental Grant Tucker 09/01/2019 – 02/29/2021
 Syphilis self-testing to expand test uptake among men who have sex with men (SST)
 The major goal of this project is to increase syphilis self-testing among MSM in China and Zimbabwe.
 Role: Consultant

NIAID U19AI44177 Radolf/Moody 03/01/2019 – 02/29/2024
 A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema Pallidum
 The goal of this project is to develop the essential understanding of syphilis infection in order to develop a human vaccine.
 Role: Co-I and Steering Committee Member

NIMH K08MH118965 Ritchwood 08/08/2019 – 08/07/2024
 Improving Adolescent Living with HIV Outcomes in South Africa: Career Development Award
 Role: Mentor

NIH NIMH R34MH119963 Tucker/Tang 08/08/2019 – 06/30/2022
 Enhancing Partner Services Among Men Who Have Sex With Men Living with HIV: A Pilot RCT
 The goal of this developmental award is to generate data to inform a larger multi-site RCT evaluating a crowdsourcing approach.
 Role: PI

NIH NIAID R34 MH116725-01 Yang (PI) 04/01/2018 – 03/30/2021
 Using Open Contest and Neuro-Influence Experiment to Develop and Evaluate PrEP Promotion Messages for High Risk Men
 This grant develops a crowdsourcing intervention to create PrEP messages for young MSM in the US.
 Role: Co-I

NIH NIAID U19AI096113 (CARE) Margolis (PI) 08/07/2011 – 30/06/2021
 Martin Delaney Collaboratory to Eradicate HIV Infection
 The purpose of this collaborative research project is to develop a strategy to eradicate HIV-1 in humans.
 Role: Advisor on community engagement

Doris Duke Charitable Foundation (no number) Cohen (PI) 08/01/2009-06/30/2019
 Clinical Research Fellowship for Medical Students
 This program provides an opportunity for U.S. medical students to spend one year in Beijing at the National Centers for AIDS Control undertaking mentored research.
 Role: Mentor

Fogarty Global Health Fellows Coordinating Center Chi (PI) 31/07/2012-31/07/2020
 NIH FIC D43 TW009340
 The purpose of this training grant is to provide junior investigators with structured opportunities for pre and postdoctoral research in LMIC.
 Role: Mentor

UNC Center for AIDS Research (CFAR) Swanstrom (PI) 31/07/98 – 07/31/2021
 NIAID P30AI050410-20
 The purpose of this grant is to provide infrastructure and support for high-quality HIV research around the world.
 Role: Co-I, Mentor, and Co-Lead for TechEngage Group

Training in Sexually Transmitted Diseases and HIV Adimora (PI) 01/01/76 – 06/30/2020
 NIAID T32AI007001-41
 The purpose of this grant is to provide pre-doctoral and post-doctoral training related to STDs, including HIV
 Role: Mentor