

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

Crowdsourcing may be a powerful force to transform health services. Crowdsourcing has a group of non-experts and experts solve a problem, then shares the solution with the public. I am interested in using crowdsourcing to promote health and well-being, using the tools of medicine, public health, art, computer science, and social science. Much of my research has focused on China because of the pronounced resurgence of syphilis in addition to a strong capacity for coordinated public health responses. My team's ongoing research uses crowdsourcing to promote HIV testing and linkage to care in China (PI, NIAID 1R01AI114310), to engage local communities about HIV cure research in the US/China/South Africa (PI, NIAID 1R01A108366), and to create youth-friendly HIV self-testing services in Nigeria (Co-PI, NICHD UG3HD096929). Our team works in partnership with the WHO/TDR Social Innovation in Health Initiative as a China hub for social innovation. Our collaborative research brings together US trainees (Fulbright and Rhodes) and Chinese trainees to work on joint community-based health research.

- 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. TDR/STRA/18.4. Licence: CC BY-NC-SA 3.0 IGO.
- Tucker J.D.**, Fenton K.A. (2018). Innovation challenges to enhance HIV responses. Lancet HIV. 5(3):e113-e115. PMID: 29519613.
- 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

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 Founder and steering committee member, Sex Work in Asia Conference at Harvard University (October 1st-2nd, 2010)
 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- 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)
 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
 Ad-hoc reviewer for *The New England Journal of Medicine*, *The Lancet*, *PLoS Medicine*, *TLID*, *TLGH*, *CID*

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 Workshop for Developing a Regional Action Plan for Hepatitis (Jakarta, Indonesia)
 2017

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 28 crowdsourcing challenge contests. SESH was recognized by the WHO-TDR program as one of the top 25 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.

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 launched four 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.
 - 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:

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

D. Additional Information: Research Support

Ongoing Research Support

- | | | |
|--|-----------------------------------|-------------------------|
| NICHD UG3HD096929
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: MPI (Co-PI) | Tucker/Iwelunmor/Ezechi (PI) | 09/01/2018-08/31/2020 |
| NIAID R01 AI114310
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 | Tucker (lead PI) / Wei (Co-PI) | 09/17/2014-08/31/2019 |
| NIAID R01 A108366
Unintended and Intended Implications of HIV Cure: Social and Ethical Analysis
The major goal of this research is to undertake theoretical research, stakeholder research, and stakeholder engagement research to better understand HIV cure in Chapel Hill USA, Guangzhou China, and Cape Town South Africa.
Role: PI | Tucker (lead PI) / Rennie (Co-PI) | 06/15/2013 – 05/31/2019 |
| FIC D43 TW009532
NIH FIC Global Infectious Diseases Training Grant
UNC-South China STD Research Training Center
The goal of this training program is to nurture the next generation of junior investigators focused on STD research.
Role: PI | Tucker (lead PI) / Cohen (Co-PI) | 07/12/2013-01/12/2019 |

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

NIAID R21AI20549 Rennie (PI) 08/15/2016-07/31/2019
Acute Infection: Lived Experiences and Ethical Challenges in Research
The goal of this qualitative research project is to better understand the experiences of those acutely infected with HIV infection.
Role: Co-I

Doris Duke Charitable Foundation (no number) Cohen (PI) 08/01/2009-06/30/2018
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) 31/07/2012-31/07/2018
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 and Mentor

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

WHO-TDR Tucker (PI) 07/01/2017 – 07/01/2018
Challenge contests for health: Practical guide and systematic review
This project examines the definition, uses, implementation, and evaluation of challenge contests for health.
Role: PI

WHO-TDR Peeling (PI) 01/01/2017-12/31/2018
Social Innovation in Health Initiative
The focus of this study is to use crowdsourcing contests to improve health in Malawi, Uganda, Philippines, and Columbia.
Role: Co-I

Pending

NIAID K24AI143471 Tucker 09/01/2018 – 08/31/2023 6cm
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
Score: 13 impact, awaiting Council Review