

**January 1, 2017**

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**EDUCATION AND TRAINING**

Dr.P.H. / 2003 University of North Carolina at Chapel Hill, Biostatistics & Demography  
Advisors: R.E. Bilsborrow & C.M. Suchindran  
"Multilevel spatial and statistical analyses to examine the relationship  
between population and environment: A case study of the Ecuadorian  
Amazon"

M.S. / 1999 University of North Carolina at Chapel Hill, Biostatistics  
Advisor: C.M. Suchindran  
"Methods of National Population Forecasting: Comparison and Contrasts"

M.P.H. / 1997 Emory University Rollins School of Public Health, International Health  
Advisor: R. Houston  
"Poverty Assessment and Nutritional Surveillance Systems"

B.A. / 1994 Boston College, Mathematics & Computer Science

*Postdoctoral Training*

2003-2004 Carolina Population Center, University of North Carolina at Chapel Hill.  
Mentors: Richard E. Bilsborrow & Stephen J. Walsh

2004-2005 Department of International Health, The Johns Hopkins University,  
Bloomberg School of Public Health  
Mentor: Lawrence H. Moulton

**PROFESSIONAL EXPERIENCE**

**Assistant Professor of Global Environmental Health**, June 2011 - Present. Division  
of Environmental Science and Policy, Nicholas School of the Environment, Duke  
University, Durham, NC.

**Assistant Professor**, June 2011-Present. Duke Global Health Institute, Duke University.

**Assistant Professor**, 2014-Present. Duke Kunshan University, Kunshan, China

**Associate**, 2011- Present. Duke Population Research Institute, Duke University.

**Director**, 2016-Present. DGHI Priority Partnership Location-Peru. Duke University.

**Adjunct Assistant Professor**, 2011-Present. Department of International Health, The Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD.

**Associate**, 2008-2012. Hopkins Population Center, The Johns Hopkins University, Bloomberg School of Public Health.

**Assistant Professor**, 2007-2011. Department of International Health, The Johns Hopkins University, Bloomberg School of Public Health.

**Adjunct Assistant Professor**, July 2010-June 2011. Division of Environmental Science and Policy, Nicholas School of the Environment.

**Assistant Scientist**, May 2005-June 2007. Department of International Health, The Johns Hopkins University, Bloomberg School of Public Health.

**Graduate Research Assistant**, 1998 – 2003. Carolina Population Center, University of North Carolina at Chapel Hill.  
Statistical and data management support to a research project studying biodiversity and population-environment interactions in the Ecuadorian Amazon.

**Environmental Statistician**, 1997 – 1998. Human Studies Division, Clinical Research Branch, Environmental Protection Agency (EPA), Chapel Hill, NC.  
Assisted in the development of non-linear mixed effects models to assess the effect of ozone exposure on lung function.

**Association of Schools of Public Health Research Intern**, 05-08/1996. Division of Unintentional Injury Prevention, The Centers for Disease Control & Prevention (CDC), Atlanta, GA.  
Evaluated the association between grip strength and motor vehicle injuries in the elderly.

**Programmer / Graduate Assistant**, 01–12/1996. Epidemiology Program Office, CDC.  
Helped write manuals for the US National Electronic Telecommunications System for Surveillance (NETSS) and assisted in programming a surveillance system in Armenia.

**Coordinator**, 06-12/1994. Cardiomyopathy and Cardiac Transplant Center, Brigham and Women's Hospital, Boston, MA.  
Coordinated transplant patient evaluations and post-transplant monitoring of care.

**Research Intern**, 05-08/1992. Hangzhou Automation Research Institute, Hangzhou, PRC.  
Studied computer programming methods and techniques.

## **PROFESSIONAL ACTIVITIES**

### *Professional Memberships and Service:*

American Public Health Association (APHA), 1996-present  
Governing Counselor, 2011-2013 (elected)  
Committee on Membership, 2011-Present  
Chair of the Student Research Awards (2008-2011)

Past Chair & Nomination Chair, 2011-12 (elected)  
Section Chair, 2009-10 (elected)  
Chair-Elect and Program Chair Statistics Section (2008-09)  
Statistics Section Council, 2007-08 (elected)  
100<sup>th</sup> Anniversary Co-Coordinator, 2007-08  
Statistics Section Secretary, 2005-07 (elected)

International Biometric Society - Eastern North American Region (ENAR)

International Union for the Scientific Study of Population (IUSSP), 2001-present  
Conference Organizer, 2013

North Carolina One Health Collaborative, 2011-present  
Executive Steering Committee Member 2011-present

Center for Comparative Medicine and Translational Research (CCMTR), Emerging,  
Infectious and Zoonotic Diseases Research Core, 2014-present

Population Association of America (PAA), 2000-present, Invited Panelist "Environment &  
Health) 2009 Annual Meeting; Invited Discussant "Population & Environment"  
2006 Annual Meeting; 2017 Conference Organizer

Population Environment Research Network, 2001-present; Secretary for Inaugural  
Meeting, 2001 Salvador, Brazil

American Society for Tropical Medicine & Hygiene, 2013-present

American Geophysical Union (AGU), 2011-2012

American Association of Geographers (AAG), 2003-2008

#### *Participation on Advisory Panels*

Expert Technical Workshop, *Heavy Metals and Health in Peru*, January 16-17, 2017,  
Lima, Peru

Expert Meeting, *Migracion, Cambio Climatico y Desarrollo Sostenible do VII Congreso  
da Asociacion Latinoamericana de Poblacion e XX Encontro Nacional de  
Estudios Populacionas*, organized by IOM and ALAP, October 17-22, 2017, Foz do  
Iguacu, Brazil

NIEHS Career Fair Panelist, April 2013.

UNC Biostatistics Alumni Career Panelist, November 2013

Woodrow Wilson Center, Environmental Change and Security Program, *Gorillas and  
Family Planning: At the Crossroads of Community Development and Conservation*,  
Discussant, October 2013

*Contributing Author and Reviewer, GEO-5: Global Environmental Outlook: Environment  
for the future we want*, (published June 2012).

United Nations Environment Programme (UNEP)

Specialist Meeting, *Future Directions in Spatial Demography*, Dec 12-13, 2011, Santa  
Barbara, sponsored by UC-Santa Barbara, NIH and Penn State

Biostatistics and Data Analysis Core Consulting, *Global Enterics Multi-Center Study (GEMS)*, University of Maryland, March 2009.

*Expert-Group Meeting on Population Dynamics and Climate Change* (June 2009)  
United Nations Population Fund (UNFPA) and the International Institute for Environment and Development (IIED)

#### *Program or Project Development*

PAA 2017, Conference and Session Organizer  
Working Group on Large Scale Development Impacts in the Amazon, Organizer, November 2015  
IUSSP 2013, Program Organizer, Population Dynamics and Environmental Linkages  
Population-Health Environment (PHE) Week 2013, Conference Organizer, Duke University, Durham, NC  
PAA 2009. Session Discussant, Environment and Health  
APHA 2009, Program Planning Chair  
APHA 2008, Organizer and Moderator: "Climate Change and Statistics, Is there Consensus?"  
APHA 2007, Moderator-Applications of Statistical Methods to GIS-based Analyses of Public Health Problems  
PAA 2006. Session Discussant-Population and Environment: Water and Land Resources  
AAG 2007. Session Chair – Disease and Health  
Population Environment Research Network (PERN). Helped build collaboration between PERN and IUSSP.

#### *Consultations*

University of North Carolina at Chapel Hill, 2012-15.  
USAID project to strengthen university capacity in Ecuador to provide high-quality education about the Ecuadorian Amazon and to conduct and disseminate applied research relevant to biodiversity conservation and resource management.

University of Wisconsin, Malaria Research Project, 2004-2006  
Developed statistical and spatial analysis plan to examine the relationship between mosquito larval breeding sites, land use, and hydrology.

Program Against Micronutrient Malnutrition. 1996-1997  
Helped translate and work with Chinese health officials to develop strategies to combat malnutrition.

UNICEF-Beijing. 1997-1998  
Helped to design and analyze neonatal tetanus sero-persistence studies performed in Hainan, Guizhou, and Hubei provinces in the People's Republic of China.

## **EDITORIAL ACTIVITIES**

*Peer Review – Journals (\* reviewed in the past two years)*

\* American Journal of Public Health

- \* American Journal of Tropical Medicine & Hygiene
- Agriculture, Ecosystems, and Environment
- Biometrical Journal
- \* BMC Cardiovascular Disease
- \* BMC Research Notes
- \* BMC Public Health
- Clinical Trials
- \* Demography
- \* Disasters Journal
- \* Emerging Infectious Diseases
- \* Environmental Research
- \* Environmental Health Insights
- \* Global Health, Epidemiology and Genomics
- Global Public Health
- Global Environmental Change
- Health & Place
- \* International Journal of Environmental Research and Public Health
- International Family Planning Perspectives
- International Journal for TB and Lung Disease
- \* International Journal of Health Geographics
- Journal of Virology & Antiviral Research
- The Journal of Nutrition
- \* Land Use Policy
- \* PLOS ONE
- \* PLOS Neglected Diseases
- \* Proceedings of the National Academy of Sciences (PNAS)
- \* Population & Environment
- Sankhya B (Applied Statistics)
- Sexually Transmitted Infections
- Social Science & Medicine
- \* Tobacco Prevention & Cessation

*Peer Review – Funding*

NIH Study Section Review:

- November 2015, Infectious, Reproductive, Asthma and Pulmonary Conditions (IRAP) Study Section (ZRG1 PSE-K05M)
- July 2014, SBIR Health of the Population (HOP) Study Section
- January 2012, NICHD, Social Sciences and Population Studies (SSPS) Study Section
- September 2011, NICHD, SSPS
- November 2011, SBIR HOP IRG
- March 2011, SBIR HOP IRG
- June 2010, SBIR HOP IRG
- June 2009, SBIR HOP IRG
- November 2009, SBIR HOP IRG
- February 2008, SBIR HOP IRG
- June 2008, SBIR HOP IRG
- June 2007, SBIR HOP IRG

- October 2007, SBIR HOP IRG
- March 2006, SBIR HOP IRG
- November 2006, SBIR HOP IRG

Florida Department of Health, Zika Research Panel, December 2016

National Science Foundation (NSF), Geography and Spatial Sciences Program (March & December 2012)

Sir Henry Wellcome Postdoctoral Fellowship Reviewer (July 2015)

Belgian Government Science Policy. Belgian Research Program for Remote Sensing STEREO II (Support to the Exploitation and Research of Earth Observation Data), September 2007.

Belgian Government Science Policy. STEREO II –Support to the Exploitation and Research of Earth Observation Data, September 2006.

Duke Global Health Institute Travel Awards, Reviewer, 2012

## **HONORS AND AWARDS**

NIH Fogarty International Center Director's Award, 2015

James E. Grizzle Distinguished Alumni Award, University of North Carolina at Chapel Hill, 2012

Outstanding Contributions to the APHA Statistics Section, 2009

Certificate of Appreciation, APHA Statistics Section, 2007, 2009

Who's Who in America, 2007, 2008

GIS & Population Science Training Program Travel Grant (sponsored by NIH), 2009  
System for Analysis Research and Training Secretariat (START) and the Third World Academy of Sciences (TWAS) grant to attend the International Young Scientists Global Change Conference, Trieste, Italy, Nov. 16-20, 2003.

Mindel C. Sheps Dissertation Fellowship in Mathematical Demography, 2003

Student Paper Award, American Association of Geographers Population Group, 2002

UNC Department of Biostatistics Travel Award, 1998-2003

Mellon Foundation Travel Award, 1999, 2001

Tinker Pre-Dissertation Travel Award from the Institute for Latin American Studies, 1999

Who's Who Among American Colleges and University, 1994

Boston College Mathematics Honor Society, 1994

Chinese Institute of Engineers Student Scholarship, 1990

## **PUBLICATIONS**

*\* indicates student publication; **D** indicates publication since arrive at Duke*

Articles (peer-reviewed)

- 1) Hoest, C., JC Seidman, G Lee, JA Platts-Mills, A Ali, MP Olortegui, P Bessong, R Chandyo, S Babji, VR Mohan, D Mondal, M Mahfuz, ER Mduma, E Nyathi, C Abreu, MA Miller, **WK Pan**, CJ Mason, SL Knobler, and the MAL-ED Network Investigators (2017) "Vaccine coverage and adherence to EPI schedules in eight resource poor settings in the MAL-ED cohort study", *Vaccine*, V35(3): 443-451, <http://dx.doi.org/10.1016/j.vaccine.2016.11.075>
- 2) Lee, C., K. Whetten, S. Omer, **WK Pan**, D. Salmon (2016) "Hurdles to Herd Immunity: Distrust of Government and Vaccine Refusal in the US, 2002-2003" *Vaccine*, V34 (34): 3972-78, doi: 10.1016/j.vaccine.2016.06.048, PMID: 27344291
- 3) Miranda J.J., A. Bernabé-Ortiz, F. Diez-Canseco, G. Málaga, M. Cárdenas, R. Carrillo-Larco, M. Lazo-Porras, M. Moscoso-Porras, M Pesantes, V Ponce, R Araya, D Beran, P Busse, O Boggio, W Checkley, P García, L Huicho, F León-Velarde, A Lescano, D Mohr, WK Pan, D Peiris, P Perel, C Rabadán-Diehl, M Rivera-Chira, K Sacksteder, L Smeeth, A Trujillo, J Wells, L Yan, H García, R Gilman (2016) "Towards sustainable partnerships in global health: the case of the CRONICAS Centre of Excellence in Chronic Diseases in Peru", *Globalization and Health*, V12:29, DOI: 10.1186/s12992-016-0170-z
- 4) \* Wyatt, L, S. Diringer, L. Rogers, H. Hsu-Kim, **WK Pan**, J. Meyer (2016) "Antagonistic growth effects of mercury and selenium in *Caenorhabditis elegans* are chemical species-dependent and do not depend on internal Hg/Se ratios" *Environmental Science & Technology*, V50(6): 3256-64, doi: 10.1021/acs.est.5b06044. Epub 2016 Mar 3
- 5) Rouhani S, Peñataro Yori P, Paredes Olortegui M, Siguas Salas M, Rengifo Trigoso D, Mondal D, Bodhidatta L, Platts-Mills J, Samie A, Kabir F, Lima A, Babji S, Mason CJ, Kalam A, Bessong P, Ahmed T, Mduma E, Bhutta ZA, Lima I, Ramdass R, Lang D, George A, Zaidi AK, Kang G, Houtp E, Kosek MN; Etiology, Risk Factors, and **MAL-ED Network Investigators** (2016). "Norovirus Infection and Acquired Immunity in 8 Countries: Results From the MAL-ED Study" *Clinical Infectious Diseases*, Mar 24. pii: ciw072. [Epub ahead of print]
- 6) **Pan, WK** and D. Lopez-Carr (2016) "Land use as a mediating factor of fertility in the Amazon". *Population and Environment*. DOI: 10.1007/s11111-016-0253-z
- 7) \* Tudor, C, **WK Pan**, G. Yenokyan, S. Dorman, M. Van der Walt, J Farley (2016) "Occupational Risk Factors for TB among Health Care Workers in KwaZulu-Natal, South Africa" *Clinical Infectious Diseases*, V62(Suppl 3):S255-S261, DOI: 10.1093/cid/ciw046
- 8) \* Pizzitutti, F., **WK Pan**, A Barbieri, JJ Miranda, B Feingold, GR Guedes, J. Alarcon-Valenzuela, CF Mena (2015) "A validated agent-based model to study the spatial and temporal heterogeneities of malaria incidence in the rainforest environment" *Malaria Journal*, V15: 514 doi: 10.1186/s12936-015-1030-7
- 9) \* Lantos, PM., LE Nigrovic, PG Auwaerter, V Fowler, F Ruffin, RJ Brinkerhoff, J Reber, C Williams, J Broyhill, **WK Pan**, D Gaines (2015) "Geographic Expansion of Lyme Disease in the Southeastern United States, 2000-2014" *Open Forum Infectious Diseases*, V2(4) doi: 10.1093/ofid/ofv143
- 10) \* Salmon-Mulanovich, G., DL Blazes, AG Lescano, DG Bausch, JM Montgomery, and **WK Pan** (2015) "Economic Burden of Dengue Virus Infection at the Household Level Among Residents of Puerto Maldonado, Peru" *American Journal of Tropical Medicine & Hygiene*, V93(4): 684-90 doi:10.4269/ajtmh.14-0755
- 11) \* Lee, JG, AO Goldstein, **WK Pan**, KM Ribisl (2015). "Relationship Between Tobacco Retailers' Point-of-Sale Marketing and the Density of Same-Sex Couples, 97 U.S. Counties, 2012." *International Journal of Environmental Research and Public Health*. V12(8): 8790-810 doi: 10.3390/ijerph120808790

- 12) \* Lee, JG, **WK Pan**, L. Henriksen, AO Goldstein, KM Ribisl (2016). "Is There a Relationship Between the Concentration of Same-Sex Couples and Tobacco Retailer Density?" *Nicotine and Tobacco Research*. Epub ahead of print: doi: 10.1093/ntr/ntv046
- 13) \* Ribeiro, F., **WK Pan**, A. Bertolde, L. Riley, SA Vinhas, RL Peres, L. Riley, M. Palaci, E. Maciel (2015) "Genotypic and spatial analysis of Mycobacterium tuberculosis transmission in a high-incidence urban setting" *Clinical Infectious Diseases*, 2015 Sep 1;61(5):758-66. doi: 10.1093/cid/civ365. Epub 2015 May 5
- 14) \* Diringer, S., B. Feingold, E. Ortiz, A. Berky, **WK Pan**, H. Hsu-Kim. "River Transport of Mercury from Artisanal and Small-Scale Gold Mining and Risks for Dietary Mercury Exposure in Madre de Dios, Peru", *Environmental Science: Processes & Impact*, Feb 11; V17(2):478-87, doi: 10.1039/c4em00567h.
- 15) O'Meara, WP., JA Mott, J Laktabai, K Wamburu, B Fields, J Armstrong, SM Taylor, C MacIntyre, R Sen, D Menya, **WK Pan**, BP Nicholson, CW Woods, TL Holland (2015). "Etiology of Pediatric Fever in Western Kenya: A Case–Control Study of Falciparum Malaria, Respiratory Viruses, and Streptococcal Pharyngitis", *American Journal of Tropical Medicine and Hygiene*, 2015 May;92(5):1030-7. doi: 10.4269/ajtmh.14-0560
- 16) Platts-Mills JA, Babji S, Bodhidatta L, Gratz J, Haque R, Havt A, McCormick BJ, McGrath M, Olortegui MP, Samie A, Shakoor S, Mondal D, Lima IF, Hariraju D, Rayamajhi BB, Qureshi S, Kabir F, Yori PP, Mufamadi B, Amour C, Carreon JD, Richard SA, Lang D, Bessong P, Mduma E, Ahmed T, Lima AA, Mason CJ, Zaidi AK, Bhutta ZA, Kosek M, Guerrant RL, Gottlieb M, Miller M, Kang G, Houpt ER; **MAL-ED Network Investigators**. (2015) "Pathogen-specific burdens of community diarrhoea in developing countries: a multisite birth cohort study (MAL-ED)" *Lancet Global Health*, Sept. V3(9): e564-75. doi: 10.1016/S2214-109X(15)00151-5
- 17) Miranda, JJ, A. Bernabé-Ortiz, F. Diez-Canseco, G. Málaga, MK Cardenas, RM Carrillo-Larco, MA Pesantes, R Araya||, O Boggio, W Checkley, PJ García, F León-Velarde, AG Lescano, V Montori, **WK Pan**, M Rivera-Chira, K Sacksteder, L Smeeth, HH García, RH Gilman (2015) "Building a Platform for Translational Research in Chronic Noncommunicable Diseases to Address Population Health: Lessons from NHLBI Supported CRONICAS in Peru" *Global Heart*, V10(1): 13-19, doi:10.1016/j.ghheart.2014.12.012
- 18) \* Lee, G, MP Olortegui, PP Yori, R Black, L Caulfield, CB Chavez, E. Hall, **WK Pan**, R. Meza, MN Kosek (2014) "Effects of Shigella, Campylobacter, and ETEC-associated diarrhea on childhood growth", *Pediatric Journal of Infectious Diseases*, V33(10): 1004-9, DOI: 10.1097/INF.0000000000000351
- 19) \* Danysh, H., R. Gilman, JC Wells, **WK Pan**, B Zaitchik, G. Gonzalez, M. Alvarez, W. Checkley (2014), "Effects of El Nino on childhood stature and lean mass in northern Peru." *Climate Change Responses*, V1(7), DOI: 10.1186/s40665-014-0007-z
- 20) \* Anderson, W., S Guikema, B Zaitchik, **WK Pan** (2014) "Population density modeling in Peru: Model structure analysis" *PLOS ONE*, doi: 10.1371/journal.pone/0100037
- 21) \* Tudor, C, M Van der Walt, B. Margot, SE Dorman, **WK Pan**, G Yenokyan, JE Farley (2014) "Tuberculosis among health care workers in KwaZulu-Natal, South Africa: a retrospective cohort analysis" *BMC Public Health*, V14(891), doi:10.1186/1471-2458-14-891
- 22) Zaitchik, BF, BJ Feingold, D. Valle, **WK Pan** (2014) "Integrating Earth Observations to Support Malaria Risk Monitoring in the Amazon", *Earth Observation: EO for Health*, Earthzine, April 14, 2014
- 23) Pendergast LL, Scharf RJ, Rasmussen ZA, Seidman JC, Schaefer BA, Svensen E, Tofail F, Koshy B, Kosek M, Rasheed MA, Roshan R, Maphula A, Shrestha R, Murray-Kolb LE; **MAL-ED Network Investigators** (2014). "Postpartum depressive symptoms across time and place: structural invariance of the Self-Reporting Questionnaire among women from the



international, multi-site MAL-ED study." *Journal of Affective Disorders*, V167: 178-89, doi: 10.1016/j.jad.2014.05.039

- 24) Hoest, C., J. Seidman, **WK Pan**, G Kang, CJ Mason, M Kosek, M Miller (2014) "Evaluating associations between vaccine response and malnutrition, gut function, and enteric infections in the MAL-ED Cohort Study: Methods and Challenges" *Clinical Infectious Diseases*, V59(suppl 4): S273-S279 doi:10.1093/cid/ciu611
- 25) Murray-Kolb LE, Rasmussen ZA, Scharf RJ, Rasheed MA, Svensen E, Seidman JC, Tofail F, Koshy B, Shrestha R, Maphula A, Vasquez AO, da Costa HP, Yousafzai AK, Oria RB, Roshan R, Bayyo EB, Kosek M, Shrestha S, Schaefer BA, Bessong P, Ahmed T, Lang D; **MAL-ED Network Investigators** (2014) "The MAL-ED cohort study: methods and lessons learned when assessing early child development and caregiving mediators in infants and young children in 8 low- and middle-income countries." *Clinical Infectious Diseases*, V59(suppl 4):S261-72. doi: 10.1093/cid/ciu437
- 26) Caulfield LE, Bose A, Chandyo RK, Nesamvuni C, de Moraes ML, Turab A, Patil C, Mahfuz M, Ambikapathi R, Ahmed T; **MAL-ED Network Investigators** (2014) "Infant feeding practices, dietary adequacy, and micronutrient status measures in the MAL-ED study" *Clinical Infectious Diseases*, V59(suppl 4):S248-54. doi: 10.1093/cid/ciu421.
- 27) Kosek M, Guerrant RL, Kang G, Bhutta Z, Yori PP, Gratz J, Gottlieb M, Lang D, Lee G, Haque R, Mason CJ, Ahmed T, Lima A, Petri WA, Houpt E, Olortegui MP, Seidman JC, Mduma E, Samie A, Babji S; **MAL-ED Network Investigators** (2014) "Assessment of environmental enteropathy in the MAL-ED cohort study: theoretical and analytic framework." *Clinical Infectious Diseases*, V59(suppl 4):S239-47. doi: 10.1093/cid/ciu457.
- 28) Richard SA, McCormick BJ, Miller MA, Caulfield LE, Checkley W; **MAL-ED Network Investigators** (2014) "Modeling environmental influences on child growth in the MAL-ED cohort study: opportunities and challenges." *Clinical Infectious Diseases*, V59(suppl 4):S255-60. doi: 10.1093/cid/ciu436.
- 29) Richard, SA., LJ Barrett, RL Guerrant, W. Checkley, MA Miller, & **MAL-ED Network Investigators** (2014) "Disease surveillance methods used in the 8-site MAL-ED Cohort Study" *Clinical Infectious Diseases*, V59 (Suppl 4): S220-224, doi: 10.1093/cid/ciu435
- 30) Platts-Mills, J., BJ McCormick, M Kosek, **WK Pan**, W Checkley, ER Houpt (2014) "Methods of analysis of enteropathogen infection in the MAL-ED Cohort Study" *Clinical Infectious Diseases*, V59 (suppl 4): S233-s238 =, doi: 10.1093/cid/ciu408
- 31) Houpt E, Gratz J, Kosek M, Zaidi AK, Qureshi S, Kang G, Babji S, Mason C, Bodhidatta L, Samie A, Bessong P, Barrett L, Lima A, Havt A, Haque R, Mondal D, Taniuchi M, Stroup S, McGrath M, Lang D; **MAL-ED Network Investigators** (2014) "Microbiologic methods utilized in the MAL-ED cohort study" *Clinical Infectious Diseases*, V59 (suppl 4):S225-32. doi: 10.1093/cid/ciu413.
- 32) **MAL-ED Network Investigators**. "The MAL-ED study: a multinational and multidisciplinary approach to understand the relationship between enteric pathogens, malnutrition, gut physiology, physical growth, cognitive development, and immune responses in infants and children up to 2 years of age in resource-poor environments." *Clinical Infectious Diseases*, V59 (suppl 4):S193-206. doi: 10.1093/cid/ciu653.
- 33) Hahn, M; S. Olson, A. Vittor, C. Barcellos, J Patz, **WK Pan** (2014) "Conservation Efforts and Malaria in the Brazilian Amazon" *American Journal of Tropical Medicine & Hygiene*, Apr; V90(4): 591-4, doi: 10.4269/ajtmh.13-0323. Epub 2013 Nov 25., PMID: 24277787
- 34) \* Valle, D, B. Zaitchik, B. Feingold, K. Spangler, **WK Pan** (2013) "Abundance of water bodies is critical to guide mosquito larval control interventions and predict risk of mosquito-borne diseases" *Parasites and Vectors*, V6:179, doi:10.1186/1756-3305-6-179

- 35) \* Parker BS, M. Paredes Olortegui, PP Yori, K Escobedo, D Florin, S Rengifo Pinedo, RC Greffa, LC Vega, HR Ferrucci, **WK Pan**, CB Chavez, JM Vinetz, MN Kosek (2013) "Hyperendemic malaria transmission in areas of occupation-related travel in the Peruvian Amazon" *Malaria Journal*, V12 (178), doi:10.1186/1475-2875-12-178
- 36) Gavidia CM, MR Verastegui, HH Garcia, T Lopez-Urbina, VCW Tsang, **WK Pan**, RH Gilman, AE Gonzalez, and the Cysticercosis Working Group in Peru (2013) "Relationship between Serum Antibodies and Taenia solium Larvae Burden in Pigs Raised in Field Conditions." *PLoS Neglected Tropical Disease*, V7(5): e2192. doi:10.1371/journal.pntd.0002192
- 37) Mergler MJ, Omer SB, **Pan WK**, Navar-Boggan AM, Orenstein W, Marcuse EK, Taylor J, DeHart MP, Carter TC, Damico A, Halsey N, Salmon DA (2013) "Association of vaccine-related attitudes and beliefs between parents and health care providers." *Vaccine*. 2013 Sep 23;V31(41):4591-5. doi: 10.1016/j.vaccine.2013.07.039.
- 38) Mergler, M, S. Omer, **WK Pan**, AM Navar-Boggan, W. Orenstein, E. Marcuse, J Taylor, MP deHart, T Carter, A Damico, N Halsey, D Salmon (2013) "Are Recent Medical Graduates More Skeptical of Vaccines?" *Vaccines*, V1(2): 154-166, doi:10.3390
- 39) Messina, J and **WK Pan** (2013) "Different ontologies: Land change science and human health" *Current Opinion in Environmental Sustainability*, V5:1-7
- 40) \* Lee, G, **WK Pan**, PP Yori, MP Olortegui, H. Tilley, M. Gregory, R. Oberhelman, R. Burga, CB Chavez, MN Kosek (2013) "Symptomatic and Asymptomatic Campylobacter Infections Associated with Reduced Growth in Peruvian Children" *PLOS Neglected Tropical Diseases*, V7(1): e2036. doi:10.1371/journal.pntd.0002036
- 41) Chang, S., **WK Pan**, DL Beltran, LO Baldelomar, MA Salano, I Tuero, JS Friedland, F. Torrico, RH Gilman (2013) "Gut hormones, appetite suppression and cachexia in patients with pulmonary TB" *PLOS ONE*, 8(1): e54564. doi:10.1371/journal.pone.0054564
- 42) Barbieri A., and **WK Pan** (2012) "People, Land, and Context: Multilevel Determinants of Off-farm Employment in the Ecuadorian Amazon" *Population, Space and Place*, doi: 10.1002/psp.1733
- 43) \* Lee, G, P Yori, M Parades, **WK Pan**, L. Caufield, R. Gilman, J Sanders, H. Silva, MN Kosek (2012) "Comparative effects of vivax malaria, fever, and diarrhea on child growth" *International Journal of Epidemiology* V41 (2): 531-9
- 44) Psaki, S, ZA Bhutta, T Ahmed, S Ahmed, P Bessong, M Islam, S. John, M. Kosek, A. Lima, C. Nesamvuni, P. Shrestha, E. Svenson, M. McGrath, S. Richard, J. Seidman, L. Caulfield, M. Miller, W. Checkley, and the MALED Network Investigators (2012) "Household food access and child malnutrition: results from the eight-country MAL-ED study" *Population Health Metrics*, V 10(24): DOI 10.1186/1478-7954-10-24
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- 74) **Pan, WK**, D.L. Carr, and RE Bilsborrow (2005) Causes and consequences of farm fragmentation in Ecuador's Amazon. In /Land Use and Rural Sustainability: Proceedings of Conference on Land Use and Rural Sustainability. /International Geographical Union (IGU) Commission on Land Use/Cover Change and Commission on Sustainability of Rural Systems. Aberdeen, Scotland. 10-14, 2004. Pp. 90-95.
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*Articles (not peer-reviewed)*

**Pan, WK** (2009) "Population-Deforestation Dynamics and associations with Climate Change" Expert Group Meeting on Population Dynamics and Climate Change, June 25 2009, UN Population Fund and IIED.

\* Pevzner, E., R. Davis, **WK Pan** (2004). "Survey of Airport Smoking Policies – United States, 2002." *Morbidity and Mortality Weekly Report*, 53(50): 1175-1178.

### *Book Chapters*

**Pan, WK**, O. Branch, B. Zaitchik, Impact of Climate Change on Vector-Borne Disease in the Amazon. In *Climate Change and Global Public Health*, Pinkerton, R, Rom, W. eds., Springer, 2014

**Pan, WK** and others (contributing author) 2012, Land. In *Global Environmental Outlook-5 (GEO5): Environment for the future we want*, Ullstein, B., de Mattos, H., Hawkins, C., McMullen, CP., Jabbour, J., Scharlemann J eds., United Nations Environment Program (UNEP), Valletta, Malta

**Pan, WK.**, C Gray, E Brondizio, E Moran. Land Use Dynamics and Key Stakeholders. In *Agricultural Transitions in the Amazon Basin*, E. Moran and S. Walsh eds., NASA-LBA. Forthcoming.

Carr, D.L., A. Barbieri, **WK Pan**, H. Iravani (2006). Agricultural Change and Limits to Deforestation in Central America. In, *Agriculture and Climate Beyond 2015: A new perspective on future land use patterns*, F. Brouwer and B. McCarl eds. Springer Science, Dordrecht, The Netherlands.

Walsh, S.J., Bilsborrow, R.E., McGregor, S.J., Frizzelle, B.G., Messina, J.P., **Pan, WK.**, Crews-Meyer, K.A., Taff, G.N., F. Buquero, F., 2002. Integration of Longitudinal Surveys, Remote Sensing Time-Series, and Spatial Analyses: Approaches for Linking People and Place. In: *People and the Environment: Approaches for Linking Household and Community Surveys to Remote Sensing and GIS*, J. Fox, R.R. Rindfuss, S.J. Walsh, V. Mishra, eds. Kluwer Academic Publishers: Boston, 91-130.

Walsh, S.J., J. Messina, K.A. Crews-Meyer, R.E. Bilsborrow, and **WK Pan** (2002). Characterizing and modeling patterns of deforestation and agricultural extensification in the Ecuadorian Amazon. In, *Linking People, Place, and Policy: A GIScience Approach*, S.J. Walsh and K.A. Crews-Meyers eds. Norwell, MA: Kluwer Academic Publishers.

### *Newspaper Editorials, Radio and TV Exposure*

**Pan, WK** (2016), *Salud Ambiental en la Selva.* Live interview on **Radio-TV Yurimaguas** June 19, 2016

**Pan, WK** (2016), *Leaked Map Reveals Chronic Mercury Epidemic in Peru* (ed. David Hill). Nov 19, 2016, The Guardian, <https://www.theguardian.com/environment/andes-to-the-amazon/2016/nov/19/leaked-map-reveals-chronic-mercury-epidemic-in-perus-amazon>

**Pan, WK** (2016), *FAQ: Zika Virus and the 2016 Rio Olympics* (ed. Bonnie Ford). Feb 17, 2016, ESPN, [http://espn.go.com/olympics/story/\\_id/14773948/zika-virus-rio-games-know-far](http://espn.go.com/olympics/story/_id/14773948/zika-virus-rio-games-know-far)

**Pan, WK** (2016), *2016 Rio Olympics: The Promise Rio Couldn't Keep* (ed. Bonnie Ford). Feb 18, 2016, ESPN, [http://espn.go.com/espn/feature/story/\\_id/14791849/trash-contamination-continue-pollute-olympic-training-competition-sites-rio-de-janeiro](http://espn.go.com/espn/feature/story/_id/14791849/trash-contamination-continue-pollute-olympic-training-competition-sites-rio-de-janeiro)

- Pan, WK** (2016), *Professor awarded \$1 million NASA grant for malaria research* (ed. Nidhila Masha). Feb 4, 2016, Duke Chronicle, <http://www.dukechronicle.com/article/2016/02/professor-awarded-1-million-nasa-grant-for-malaria-research>
- Pan, WK** (2015), *Health Professor Turns to Space for Malaria Cure* (ed. M. Sophia Newman). Dec 30, 2015, Next City, <https://nextcity.org/daily/entry/peru-amazon-flooding-malaria-cure-nasa>
- Pan, WK** (2015), *They're Going Door to Door in the Amazon to See Why People Get Sick* (ed. Jason Beaubien). May 19, 2015, National Public Radio (NPR), <http://www.npr.org/sections/goatsandsoda/2015/05/19/401970884/theyre-going-door-to-door-in-the-amazon-to-see-why-people-get-sick>
- Pan, WK** (2015), *Going For The Gold Sends Mercury Down the River* (ed. Jason Beaubien). January 21, 2015, National Public Radio (NPR), <http://www.npr.org/sections/goatsandsoda/2015/01/21/378842801/going-for-the-gold-sends-mercury-down-the-river>
- Pan, WK** (2014), *Women at the Center of the Human-Environment Interface*, TEDx Meredith College, April 12, 2014.
- Bass Connections in Peru*, August 2013 (<https://globalhealth.duke.edu/media/news/faculty-lead-students-life-changing-research-experiences>)
- Pan, WK.** (Spring 2012) "Inquiry across Disciplines" Duke University Interdisciplinary Studies.
- Pan, WK.** (Fall 2011) "Toward Alma-Alta: Researcher studies Health, Population and the Environment" *GIST from the Mill*, Duke University Social Science Research Institute (SSRI). (<http://ssri.duke.edu/newsletter.php>)
- Pan, WK.** (Summer 2010). "Top 20 Challenges in Public Health: Charting Development's Path to Disease" *Johns Hopkins Public Health Magazine*. Baltimore, MD ([http://magazine.jhsph.edu/2010/spring/features/the\\_future\\_of\\_public\\_health\\_20\\_great\\_challenges/from\\_development\\_to\\_disease/](http://magazine.jhsph.edu/2010/spring/features/the_future_of_public_health_20_great_challenges/from_development_to_disease/))
- Pan, WK.** (February 25, 2008). National Public Radio, Climate Connections: Solutions "New Roads in the Amazon May Deliver Disease," by Joanne Silberner ([www.npr.org/templates/story/story.php?storyId=19276850](http://www.npr.org/templates/story/story.php?storyId=19276850))

*Manuscripts in Preparation / Under review*

- Pan, WK**, C. Hoest, J. Seidman, C. Mason & the MAL-ED Consortium. "Association of enteropathogens, diarrhoea, and home environment with seroconversion of polio serotypes (1-3) following oral polio vaccination (OPV) in the MAL-ED Study", *Vaccine*
- Pan, WK**, C. Hoest, J. Seidman, C. Mason, & P Bessong. "Immune response to OPV/IPV vaccination in a birth cohort in South Africa: The MAL-ED Study", *Vaccine*
- \* Feingold, B., B. Zaitchik, **WK Pan**. "Climate, land use and demographic changes influencing malaria in the Amazon", *Lancet Infectious Diseases*
- \* Saxton, A., JJ Miranda, J Stanifer, E Ortiz, and **WK Pan** "Assessment of Two Diabetes Point-of-Care Analyzers Measuring Hemoglobin A1c in the Peruvian Amazon" *Diabetes Research & Clinical Practice*
- Pan, WK**, B. Feingold, E. Ortiz, A. Berky, P. Meier, H. Hsu-Kim, J. Stanifer, M. Marani, JJ Miranda, AM Morales "Impact of large-scale development on human and environmental health in Madre de Dios, Peru: Study design" *Global Health, Epidemiology and Genomics*

Wyatt, LH, EJ Ortiz, BJ. Feingold, AJ. Berky, SE. Diring, AM Morales, E Rojas-Jurado, H Hsu-Kim, and **WK. Pan** "Mercury Exposure in Peruvian Riverine Communities Near Artisanal and Small-scale Gold Mining: The Importance of Household Diet," *Science of the Total Environment*

Wyatt, LH, AL. Luz, X Cao, LL. Maurer, AM. Blawas, A Aballay, **WK. Pan**, JN. Meyer "Effects of methyl and inorganic mercury exposure on genome homeostasis and mitochondrial function in *Caenorhabditis elegans*" *DNA Repair*

## TEACHING

### *Classroom Instruction*

- Bass Connections: Environmental Epidemiology in Latin America. 2012-18. Duke University
- Bass Connections: Etiology, Risk Factors and Interactions of Enteric Infections and Malnutrition and the Consequences for Child Health and Development (MAL-ED) Project. 2016-17. Duke University
- Critical Readings in Environmental Epidemiology. Duke Fall Semester 2017.
- Environmental Management in a Changing World – Coping with Sea Level Rise. Duke Summer Program in Venice. 2013-2017. Venice International University
- Population-Environment Dynamics Influencing Human Health: JHSPH 4<sup>th</sup> Term, 2009-2010 AY; Duke University Spring semester 2012; 2013; 2014; 2015; 2016 (GLHLTH / ENVIRON 237S); Duke-Kunshan University, October-December 2014
- One Health Intellectual Exchange: Philosophy to Practice Integration of Human, Animal & Environmental Health. Duke (GLHLTH 771) Spring semester 2013-2016
- Spatial Methods in Epidemiology and Demography. Duke (GLHLTH 636), Fall 2013
- Spatial Data Collection for Public Health Studies, Gates Institutes for Reproductive Health, Addis Adaba, Ethiopia June 2009
- Quantifying Epidemiological Relationships using Spatial Analysis, Summer Institute in Epidemiology and Biostatistics. 2008
- GPS and Spatial Data Collection in Epidemiologic Studies, Summer Institute in Epidemiology and Biostatistics. 2008
- Spatial Epidemiology. The Summer Institute in Tropical Medicine and Public Health, 2007, Johns Hopkins Bloomberg School of Public Health
- Fundamentals of Biostatistics. The Summer Institute in Tropical Medicine and Public Health, 2006-2008. Johns Hopkins Bloomberg School of Public Health
- Introduction to Biostatistics. ICHORTA Summer Institute, 2006-2008, Johns Hopkins Bloomberg School of Public Health.
- Spatial Regression using Multilevel Models, 2006 NICHD GIS & Population Science Workshop, UC-Santa Barbara.
- Introduction to Spatial Regression, UNC-Odum Institute. 2002.
- Advanced Linear Models, UNC, Dept. of Biostatistics. 18 students. 2001 (Co-Instructor / Teaching Intern)
- Fundamentals of Biostatistics, UNC, Dept. of Biostatistics. 70 students. 2002. (Teaching Assistant)
- EpiInfo & Statistical Computation for the International Epidemic Intelligence Service, Emory University. 20 students. 1996-97 (Trainer / Facilitator)
- Boston College Emerging Leader Program, 10 students. 1993-94 (Facilitator)



*Advisees - Post-doctoral*

Caren Weinhouse, PhD, DGHI Post-Doctoral Fellow, Feb 2015-present  
Francesco Pizzitutti, PhD, DGHI Post-Doctoral Fellow, Nov 2015-present  
Gabriela Salmon-Mulanovich, PhD, DGHI Post-Doctoral Fellow, Nov 2015-July 2016  
Paul Lantos MD, KL2 Clinical Scientist Development Award, 2014-present.  
Ethel Maciel, ICHORTA Post-Doctoral Fellow. 2008-2009  
Currently: Professor and Vice-Rector, Universidad Federal do Espirito Santo, Brazil  
Beth Feingold, PIMM Fellow, Johns Hopkins University, 2011-2014  
Currently: Assistant Professor, Albany School of Public Health

*Advisees - Doctoral Degrees*

Justin Lana, PhD in-progress, Duke  
Helena Frischtak, MD in-progress, UVA (via Doris Duke Program)  
Andres Mallipudi, MD in-progress, JHU (via Doris Duke Program)  
Gabriela Salmon, PhD 2014, JHSPH  
*Dengue infection in Puerto Maldonado, Peru: Human migration and economic impact.*  
Currently: Post-doc Fellow, DGHI (starting as FIH post-doc at Univ. of WA Aug 2016)  
Lisa Patel, MD 2011, JHU (via Johns Hopkins Center for Global Health Framework)  
Currently: Clinical Instructor, Stanford Medical School  
Frank Franklin, PhD 2009, Johns Hopkins School of Public Health (JHSPH)  
*Alcohol outlet density and violent crime in an urban context: Examining deprivation effects and longitudinal association*

*Co-Advisees - Doctoral Degrees*

Lauren Wyatt, PhD in-progress, Duke (co-Advisor Joel Meyer)  
Sarah Diringler, 2016, Duke University (co-Advisor Helen Hsu-Kim)  
*Distribution, Transport, and Control of Mercury Released from Artisanal and Small-Scale Gold Mining (ASGM)*  
Currently: San Francisco Estuary Institute  
Joseph Lee, 2015, UNC-Chapel Hill (co-Advisor Kurt Ribisl)  
*Relationship between sexual minority couples & tobacco retailer density and marketing*  
Currently: Assistant Professor, Dept Health Education & Promotion, East Carolina Univ

*Dissertation<sup>D</sup> and/or Exam<sup>E</sup> Committee - Doctoral Degrees*

Stacy Scholle, PhD 2015 Duke (Katia Koelle, Advisor)<sup>D, E</sup>  
Yun Jian, PhD 2014 Duke (Marco Marani, Advisor)<sup>D, E</sup>  
*Prediction of mosquito abundance in temperate regions using ecological, hydrological and remote sensing models*  
Maria Au, PhD 2014 JHSPH (Benjamin Caballero, Advisor)<sup>D, E</sup>  
*Ethnic disparities, acculturation, & neighborhood racial/ethnic concentration: The consumption patterns of sugar-sweetened beverages among adults living in California*  
Dennis Valle, PhD 2013 Duke (James Clark, Advisor)<sup>D, E</sup>  
*Land use, land cover change and malaria risk in the Amazon region,*  
Gweneth Lee, PhD 2012 JHSPH (Margaret Kosek, Advisor)<sup>D, E</sup>  
*Diarrheal Disease and Linear Growth in Peruvian Infants*  
Shegufta Shefa Sikder, PhD 2012, JHSPH (Alain Labrique, Advisor)<sup>D, E</sup>

*Obstetric Complications in Rural Northwest Bangladesh: Determinants of Care Seeking and Service Availability for Emergency Obstetric Care.*

Carrie Tudor, PhD, 2012 JHU-School of Nursing (Jason Farley, Advisor) <sup>D</sup>

*Occupational Risk Factors for TB Among Health Care Workers in Kwazulu-Natal, South Africa*

Laurel Suter, PhD, 2012 UC-Santa Barbara (David Lopez-Carr, Advisor) <sup>D</sup>

*Land Succession and Intensification in the Agricultural Frontier: Sierra del Lacandon National Park, Guatemala*

David M. Sintasath, Ph.D. 2008 JHSPH (Ken Nelson, Advisor) <sup>D</sup>

*High Diversity of Simian Retroviruses and the Risk for Disease Emergence*

Agbessi Amouzou, Ph.D. 2006 JHSPH (Stan Becker, Advisor) <sup>D, E</sup>

*The fertility transition in Ghana, Kenya, and Senegal: Comparing effects of ideation-diffusion and economic indicators*

Jessica Leibler, DrPH 2010 JHSPH (Ellen Silbergeld, Advisor) <sup>E</sup>

Hsin-Jen Chen, PhD 2012 JHSPH (Youfa Wang, Advisor) <sup>E</sup>

Isabel Rodriguez-Barraquer, PhD 2012 JHSPH <sup>E</sup>

Chou-cheng Lai, PhD JHSPH 2014 <sup>E</sup>

Yayi (Stephanie) Guo, PhD JHSPH 2012 <sup>E</sup>

Preety Gadhoke, PhD JHSPH 2012 <sup>E</sup>

Ann Y. Liu, PhD JHSPH 2012 <sup>E</sup>

Fengmin Zhao, PhD JHSPH 2010 <sup>E</sup>

Catherine Sutcliff, PhD JHSPH 2010 <sup>E</sup>

Jennifer Armistead, PhD JHSPH 2011 <sup>E</sup>

Ingrid Friberg, PhD, 2008 JHSPH (Mark Steinhoff, Advisor) <sup>D</sup>

Jennifer Moisi, PhD, 2008 (alternate, JHSPH, Orin Levine, Chair) <sup>F</sup>

Thomas Jaenisch, PhD 2008 (alternate, JHSPH, James Tielsch, Advisor) <sup>F</sup>

Joy M. Guillemot. Exam year 2008 (alternate) <sup>P</sup>

Shama Ahuja, Exam year 2008 <sup>P</sup>

Rebecca Day Merrill, Exam year 2007 <sup>P</sup>

#### *Advisees – Masters Degrees*

Clay Jones, MScGH (2018), Duke, in-progress

Elizabeth Monahan, MScGH (2017), Duke, in-progress

Avery Yuan, MS-Biostatistics (2017), Duke, in-progress

Rachel Whitson, MEM (2017), Duke, in-progress

Beibo Zhao, MS-Biostatistics (2017), UNC, in-progress

Wanbing Gu, MScGH, Duke-Kunshan University 2016 "*The Influence of Household Economic Status and Food Consumption Patterns on Obesity Rates in Peru: Evidence from a Field Study in 11 Communities of Madre de Dios*"

Anthony Saxton, MScGH, Duke 2016 "*Assessment of Two Diabetes Point-of-Care Analyzers Measuring Hemoglobin A1c in the Peruvian Amazon*"

Jose Magana, MEM/MBA, Duke 2016, "*Measuring the effects of mining on Peru's public health: Is the Apurimac Region prepared to assess heavy metal exposure?*"

Elizabeth Kendell, MEM, Duke 2015

Dominic Lucero, MScGH, Duke 2015, "*Factors associated with the distribution of Leishmaniasis Disease and Vectors in Madre de Dios, Peru*"

Christina Chao, MScGH, Duke 2015, "*Air Pollution, Fuel Usage, and Health Outcomes in Madre de Dios, Peru: A Cross-Sectional Study*"

Jessica Cain, MEM, Duke 2014, "*Vulnerability and Resilience to Malaria among Communities in Madre de Dios, Peru*"

Axel Berky, MEM, Duke 2014, "*Hydrological models in Madre de Dios*"

Ross Hansen, MsGH, Duke 2014, "*The impact of flooding on Malaria transmission within roadway communities in the Peruvian Amazon*"

Elizabeth Yin, MEM, Duke 2014, "*Identifying malaria transmission risk in the Peruvian Amazon: A geospatial approach*"

Sheng Liu, MsGH, Duke 2013, "*Mother's early marriage predicts child malaria risk in the Peruvian Amazon*"

Rotimi Thomas, MEM, MBA, Duke 2013, "*Sub-Saharan Africa: Turn on the lights*"

Justin Lana, MsGH, Duke 2012, "*Multilevel model of malaria risk in the Peruvian Amazon*"

Suzanne Pollard, MHS, JHSPH 2011, "*Exposures to particulate matter and carbon monoxide and their short-term physiological effects in a rural, high-altitude population of the Peruvian altipland*"

Yuen Wai Hung, MHS, JHSPH 2010 "*The Changing Health Needs in Iraq: Injury Burden and the Emergency Medical Care Development*"

Yvonne Tam, MHS, JHSPH 2010, "*Water, Sanitation, and Hygiene (WASH) in Schools - Challenges and Opportunities: A study of UNICEF's school sanitation and hygiene education program in South India*"

Ramya Ambikapathi, MHS, JHSPH 2009

Brent Kim, MHS, JHSPH 2009, "*Measurement and Communication Indirect Greenhouse Gas Emissions from US Food Consumption via Carbon Calculators*"

Naomi Kincler, MPH, JHSPH 2009, "*Spatial and seasonal variation in maternal and newborn MUAC in rural Bangladesh*"

Kirsten Thompson, MPH, JHSPH 2008

#### *Undergraduate Advising*

Project Heal (Honduras, 2013-14): Suellen Li, Jenny Xie, Leah Mische  
 Advisor: Pooja Mehta (2017)

Duke Engage Independent Study: Bruno Valen (2019)

Bass Connections (Peru, 2012-17):

- 2012-13: Charlotte Lee (2015), Laura Mistretta (2014)
- 2013-14: Laura Rogers (2015), Josh Latner (2015), Priyanka Krishnan (2016)
- 2014-15: Margot Neveaux (2017), Madison Krischak (2017), Austin Peer (2017), Sarah Nuss (2017)
- 2015-16: Jennifer Callejas (2017), Liane Emerson (2018), Joshua Grubbs (2018), Huijia Yu (2018), Luiza Perez (2018)
- 2016-17: Karina Martinez Romo (2018), Delaney Dryfoos (2019), Anson MacKinney (2019), Jennifer Callejas (2017), Joshua Grubbs (2018)

Bass Connections (MALED, 2016-17); Pooja Mehta (2017)

#### *Doctoral / Masters Thesis Reader*

Sydney Neeley, MScGH, Duke 2016: "*Using GIS and Remote Sensing Technologies to Identify Environmental Variables of Malaria Vector Breeding Sites in Western Kenya*"

Yinan Jiang, MScGH, Duke 2016: "*Migration and Perception of Health Status: a Qualitative Study in Kazakh Chinese*"

Ryan Simmons, MS-Biostatistics, Duke 2015: "*Comparing malaria serological models in a longitudinal cluster randomized trial in Tanzania*"

Alexandra Shannon, MScGH, Duke 2016: "*Evaluating Demand for Water & Sanitation Technologies in Udaipur, India: A Mixed Methods Approach*"

Cydney Elizabeth Justman, MScGH, Duke 2013: "*Intergenerational influences and migration: Rurality and adolescent fertility in Lujan, Argentina*"

Andria Erin Smith, MScGH, Duke 2011: "*Evaluating Medicine Retailer Knowledge and Practice in the Diagnosis and Treatment of Malaria in Western Kenya: An opportunity for improved malaria case management*"

Jenna Rose, MHS, JHSPH 2010: "*Etiology of Traveler's Diarrhea in Bangkok, Thailand*"

Julie Harris, Ph.D., MPH, JHSPH 2007: "*Model Comparing Outcomes in Cost – Effectiveness and Tuberculosis Prevalence for Active and Passive Disease Surveillance in Peru.*"  
Awarded the 2007 MPH Capstone Award for Outstanding Achievement.

Michelle Barnhart, MHS, JHSPH 2007: "*Changes in health-related quality of life and emotion before and after prophylactic oophorectomy*"

Eric Pevzner, PhD, UNC 2004: "*Tackle smoking project: A randomized trial to reduce smoking high school football games in North Carolina.*"

#### *Research Assistant (student) Trainees*

Clay Jones(2016-present)  
Pooja Mehta (2014- present)  
Elizabeth Monahan (2015-present)  
Sarah Thornburgh (2014-16)  
Anthony Saxton (2014- 16)  
Shubham Patel (2015-16)  
Mark Ziman (2014-15)  
Lina Kelpsaite (2014-15)  
Donny Meyer (2014)  
Weixi Jiang (2013-14)  
Jessica Cain (2012-14)  
Angela Zhang (2013-14)  
Lauren Wyatt (2013)  
Victoria Schellus (2011-2012)  
Denis Valle (2011-2013)  
Ashley Sobel (2012)  
Katherine (Chun Min) Lin (2009-2010)  
Fengmin Zhou (2008-2009)  
Daesha Ramachandran (2008-2009)  
Jessie Pinchoff (2010-11)  
Ian Craig (2009-2011)

#### *Laboratory Research Associates (staff)*

Ernesto Ortiz, MD (2012-present)  
Axel Berky, MEM (2014-present)  
Paige Meier (2014-present)  
Leah Ling (2015-16)  
Nelson Moore (2016)

Joseph Lunyera (2016)

## **RESEARCH GRANT PARTICIPATION**

### *Current Research Participation - External*

#### *Comprehensive Investigation into the Risk Factors of Malnutrition & the Consequences for Child Health*

Bill & Melinda Gates Foundation 12/1/2008-12/31/2016

Goal: Multi-country diarrhea etiology study to determine effects of enteric infection on malnutrition, growth, vaccine response and cognitive development.

Effort: 15%

Role: Biostatistician, Data Coordinating Center (Mark Miller & Michael Gottlieb, PIs, FNIH)

#### *Effects of Social Context, Culture and Minority Status on Depression and Anxiety*

NIMH (5R01MH098374) 8/1/2012 – 7/31/2017

Goal: Examine how social contexts intersect with cultural factors to affect the onset of depression and anxiety across different life stages and geographic locations.

Effort: 10%

Role: co-I (Margarita Alegria, PI, Harvard)

#### *LUCIA-Land Use, Climate and Infections in Western Amazonia*

InterAmerican Institute for Global Change Research (CRN3036) 11/1/12 – 10/31/2017

Goal: To understand how land use, climate and population mobility contribute to the transmission of infectious diseases in the Western Amazon Basin.

Role: co-PI with Alisson Barbieri (UFMG-Brazil)

#### *Health Impact Assessment in the Amarakaeri Communal Reserve*

Hunt Oil Peru, LLC (HOEP-QEHSS-140003) 6/16/2014 – 6/15/2016

Effort: 33%

Goal: To implement a baseline health assessment in the Amarakaeri Communal Reserve

Role: PI

#### *Malaria Early Warning System for the Amazon*

NASA-ROSES (NNX15AP74G) 1/1/2015-12/31/2017

Goal: To continue the development of an operational early warning system for the Peruvian Amazon.

Role: PI

#### *Duke University Program in Environmental Health*

NIEHS (5T32ES021432) 7/1/13 – 6/30/2018

Goal: To provide a core educational environment with laboratories and shared facilities at Duke University supplying training in leading-edge approaches to the students' research.

Role: Student Mentor / Faculty (Richard Di Giulio, PI, Duke)

#### *Impact of El Nino on Mercury Exposure and the Epigenome*

NIEHS (1R21ES026960) 02/15/2016 – 02/14/2018

Goal: To evaluate the impact of El Nino-associated flooding on Hg exposure in the Amazon

Role: PI

*Training in Infectious Diseases in Peru*

FIC (D43TW001140)

07/01/1999 – 07/31/2016

Goal: Strengthen and interrelate existing research lines in Peru that will be used as a comprehensive framework for parasitic disease control.

Role: Biostatistics Mentor (Hector Garcia PI, UPCH)

*Combined Albendazole and Praziquantel in Subarachnoid NCC, CCC, lead application*

NINDS (U01NS086974)

09/01/2015 – 07/31/2020

Goal: Strengthen and interrelate existing research lines in Peru that will be used as a comprehensive framework for parasitic disease control.

Role: Biostatistics Consultant (Hector Garcia PI, UPCH)

*Mitochondrial dysfunction and Gulf War Illness*

DoD (GW150184)

06/01/2016 – 06/30/2019

Goal: Evaluate whether mitochondrial dysfunction is a major driver of Gulf War Illness

Role: Statistician (Joel Meyer, PI, Duke)

*Current Research Participation – Internal (Duke)*

*Epigenetic deregulation at imprinted genes linked to environmental mercury exposure in Peruvian gold mining communities*

DuPRI Pilot Award

4/1/2016 – 3/31/2017

Goal: To study the effects of large-scale development projects on human health by examining epigenetic effects and metabolic health outcomes related to environmental toxicant exposure

Role: PI

*Evaluating the impact of environmental mercury exposure on childhood immune response*

The Josiah Charles Trent Memorial Foundation

01/01/2016 – 12/31/2016

Goal: To measure immune response in children exposed to mercury in the Peruvian Amazon

Role: PI

*Global Health Postdoctoral Fellow Research Funding*

Duke Global Health Institute

08/01/2016 – 07/31/2018

Goal: Provides 50% support to recruit a postdoctoral fellow to work in my projects

Role: PI

*Madre de Dios Research Project*

This combines studies supported by the **Hopkins Population Center** (*Migration along the Interoceanic Highway, 12/1/2009-12/31/2012*); **DGHI-Pratt Initiative** (*Evaluating the impact of mercury contamination on human and environmental health in the Madre de Dios watershed, 9/1/2012 – 8/31/2014*); **Bass Connections** (*Environmental Epidemiology in Latin America*) (8/1/2013-12/31/2017).

Role: PI

*Research Pending*

*Adaptation at the FEWS Edge in Sub-Saharan Africa – Innovation Pilot Studies to Transform Rural Demographics*

NSF - INFEWS 09/15/2016 – 09/14/2018

Goal: Evaluate whether mitochondrial dysfunction is a major driver of Gulf War Illness

Role: Demographer (Ana Barros, PI, Duke)

*Collective Mining Titling and Rights to Improve Sustainability*

EGAP 02/01/2017 – 01/31/2020

Goal: Implement interventions to reduce the impact of gold mining on human and environmental health

Role: PI

*Improving Evaluation of Family Planning Needs in Rural Areas*

Bill & Melinda Gates Foundation Grand Challenge 02/01/2017 – 01/31/2020

Role: PI

Completed Research

*Population-Environment Dynamics influencing Malaria risk in the Peruvian Amazon*

NICHD/NIAID (1K01HD055415) 09/01/2008 - 08/31/2013

Goal: This is a K01 Mentored Career Development Award to improve skills and understanding of factors associated with malaria in the Peruvian Amazon.

Role: PI

*Improved Biomarkers for the Assessment of Environmental Enteropathy*

Bill & Melinda Gates Foundation 03/01/12 – 2/28/2014

Goal: To delineate improved non-invasive or minimally invasive biomarkers to characterize the disease activity of environmental enteropathy in a birth cohort of children in rural Peru living in an area with high diarrheal illness rates and stunting.

Role: Statistician (Margaret Kosek PI, JHU)

*IGERT: Water, Climate & Health*

NSF (1069213) 09/14/11 – 08/31/2017

Goal: Train a corps of doctoral students to become the leaders needed to develop innovative adaptive strategies to respond to climate change.

Role: co-PI (released PI status when moved from JHU to Duke)

*Causes and interventions for childhood obesity: Innovative System Analysis*

NIH (R01HD064685) 07/01/2010 – 6/30/2014

Goal: Study the influences and interactions between individual and environmental factors on childhood obesity, the key drivers of the US childhood obesity epidemic

Role: co-I (Youfa Wang PI, JHU)

*Development of a Detection and Early Warning System for Malaria Risk in the Amazon*

NASA (10-PHFEAS10-17) 07/01/2011 - 06/30/2013

Goal: Determine the feasibility of developing an early warning system for malaria in the Amazon, focusing on data collected in Peru.

Role: co-PI (Ben Zaitchik PI, JHU)

*Road construction, colonization, and epidemic malaria in Peru's Northern Amazon*

JHSPH Faculty Research Initiatives Fund 01/01/2008 - 12/31/2009

Goal: Begin preliminary collection of vector, land use, and human infection data for malaria research.

Role: PI

*CREATE: Consortium to Respond Effectively to the AIDS-TB Epidemic*

Bill and Melinda Gates Foundation 07/01/2004 - 07/01/2013

Goal: Develop, evaluate, and if appropriate, promote new applications of existing tools so as to reduce the incidence of tuberculosis in settings of high HIV prevalence.

Role: Statistician, spatial analysis. (Richard Chaisson PI, JHU)

*Population, Health and Environment in Africa: Coordinating Strategies*

Duke Africa Initiative 08/01/2012 - 7/31/2013

Goal: Pilot project to develop a collaboration focused on population-health-environment issues in Africa, particularly in Uganda

Role: PI

*You get what you look for: emerging infections in a malaria-endemic zone*

Duke Global Health Institute 03/01/2011 - 02/28/2013

Goal: To test whether non-malarial pathogens are responsible for a significant proportion of febrile illnesses in Kenya

Role: Co-I (Tom Holland and Wendy O'Meara PIs, Duke)

*Vibrios in the Chesapeake Bay*

Johns Hopkins Center for Water and Health 01/01/2010 - 12/31/2011

Goal: To develop spatial and temporal datasets of *Vibrio* in the Chesapeake Bay using *in-situ* and remotely-sensed data, linked to environmental factors to study where and when biotic risks occur to prevent or reduce their effects.

Role: co-PI (Darryn Waugh PI, JHU)

*Family Planning Plus*

Bill & Melinda Gates Inst. for Population & Reprod. Health 03/09/2009 - 02/29/2014

Goal: To improve our understanding of the role of household wealth and individual employment on reproductive health

Role: Co-I (Amy Tsui PI, JHU)

*Novel techniques for the detection of Pediatric TB in Ethiopia*

Agency: NIH (R01HD059005) 09/30/2008 - 06/30/2013

Goal: To determine if the diagnosis of active TB in children and the recovery of *Mtb* isolates can be done more quickly, efficiently, and cost-effectively using alternative clinical specimens in combination with more rapid diagnostic methods for both confirmation of TB and detection of drug resistance compared to current standard techniques.

Role: Statistician (Robert Gilman PI, JHU)



*Strengthening the evidence base for the epidemiology of maternal, neonatal, and child conditions – Diarrhea morbidity and etiology*

Bill and Melinda Gates Foundation

2008-2011

Goal: To improve estimates of morbidity and mortality for specific etiologies of diarrhea.

Role: Statistician (Christa Fisher-Walker & Robert Black, PIs, JHU)

*Modeling Population-Environment Dynamics in the Ecuadorian Amazon*

NICHD (5R03HD054939)

04/17/2007 - 04/16/2009

Goal: Examine relationship between population and environment in a tropical rainforest context that is undergoing rapid deforestation and development.

Role: PI

*New tools to understand and control endemic parasites*

NIAID (5P01AI051976)

09/30/2002 – 06/30/2007

Goal: Strengthen and interrelate existing research lines in Peru that will be used as a comprehensive framework for parasitic disease control.

Role: Statistician (Hector Garcia PI, JHU)

*Migration and Deforestation in Guatemala*

National Science Foundation (NSF)

12/01/05 – 11/31/08

Goal: Examine the impact of out-migration to forest frontier regions of Guatemala.

Role: Consultant (David L. Carr PI, UCSB)

*In-Home Prevention of Substance Abuse Risks for Native Teen Families*

NIDA (1R01DA019042)

09/30/05 – 09/29/10

Goal: To prevent significant lifetime risks for drug abuse and other health and behavior problems in reservation-based American Indian teen mothers and their children by serving women through a culturally-adapted, paraprofessional delivered, home visiting program.

Role: Statistician (John Walkup PI, JHU)

*Depression prevention in pregnant AI teens using CBT*

NIMH (1R34071300)

06/01/04 – 05/31/07

The major goals of this project are to reduce symptoms of post-partum depression in American Indian teen moms who reside on the White Mountain Apache reservation.

Role: Statistician (Golda S. Ginsburg PI, JHU)

*Impact of Maternal Vitamin A or Beta-Carotene Supplementation on Maternal and Infant Mortality in Bangladesh*

USAID, BMGF, Sight & Life Research Institute

08/01/2001 – 09/01/2009

Goal: Determine whether weekly oral supplement of Vitamin A from early pregnancy through three months postpartum, reduces maternal, fetal or infant mortality.

Role: Biostatistician (Keith West PI, JHU)

*Evaluation of Parents Claiming Exemptions to School Entry Immunization Requirements*

Centers for Disease Control & Prevention

09/30/2004 - 09/29/2006

Objective: To evaluate the rate and geographic distribution of medical and non-medical exemptions in the U.S. and associations with outbreaks of vaccine-preventable diseases.

Role: Biostatistician (Daniel A. Salmon PI, JHU)

*Phase 1 Study of the Safety and Immunogenicity of PpPfs25/ISA51 and ScPvs25/ISA51: Transmission Blocking Vaccines for Plasmodium falciparum and Plasmodium vivax Malaria*  
NIAID (HHSN266200400077) 09/29/04-01/31/07

Objective: Conduct a Phase 1 clinical trial for the recombinant proteins expressed in *Pichia pastoris* and *Saccharomyces cerevisiae*, for PpPfs25 and ScPvs25, respectively.

Role: Statistician (Anna Durbin PI, JHU)

*Epidemiology of Shigellosis in the Peruvian Amazon*

Fogarty International Center

09/29/01 – 08/31/08

Objective: Determine and define the age-specific incidence rates, risk factors, antibiotic-resistant profiles, and regional serotype data for shigellosis. Develop a spatial model for transmission.

Role: Biostatistician (Margaret Kosek PI, JHU)

*Integrated control of taenia solium cysticercosis*

NIAID

09/01/1999 - 07/31/2005

Goal: The goal of this project is to implement an integrated control strategy to treat and possibly eliminate taenia solium cysticercosis from the northern Peruvian province of Tumbes.

Role: Biostatistician (Robert Gilman PI, JHU)

*Agricultural Colonization in the Ecuadorian Amazon: Population, Biophysical, and Geographical Factors Affecting Land Use/Land Cover Change and Landscape Structure*

NASA

07/01/98 – 12/31/2002

Goal: To identify the social, economic and demographic determinants of land use and land cover (LULC) change in the Ecuadorian Amazon associated with spontaneous agricultural colonization, based on survey data, satellite imagery, GIS, and maps.

Role: GRA (Richard E. Bilborrow PI, UNC-Chapel Hill)

*Modeling the Scale Dependent Drivers of LCLU Dynamics in Northeastern Ecuador: Simulating Patterns of Landscape Change and Assessing their Cause and Consequence through Multi-Level Models and Cellular Automata*

NASA

03/01/03 – 04/30/2006

Goal: Multi-level models and cellular automata (CA) models are utilized to assess the rate, pattern, and mechanisms of forest conversion to agricultural and urban land uses. Scale dependent drivers of land cover & land use dynamics determined from household-level social data are examined in both space and time, combined with biophysical and geographic data.

Role: Post-Doctoral Fellow (Stephen J. Walsh PI, UNC-Chapel Hill)

*Research Training in Population Statistics*

NICHD

07/01/83 – 04/30/2008

Goal: Designed to train pre-doctoral and post-doctoral in the application of statistical theory and methods related to problems in the population field. Pre-doctoral trainees will complete a curriculum that includes courses in statistical theory and methods and in demographic techniques and modeling. Postdoctoral trainees undertake a training program for two years under the supervision of one or more program faculty members.

Role: Pre-doctoral trainee (Chirayath M. Suchindran PI, UNC)

*Risk modeling methods for exposure-response data of U.S. EPA Clinical Research Branch*  
US EPA (Type: Innovative Methodology) 07/01/92 – 06/30/99

Goal: To develop appropriate statistical methods to provide adequate, reliable models of exposure-response of lung function following ozone exposure, controlling for ventilation rate, activity level, duration of exposure, and individual characteristics.

Role: Biostatistician (Paul W. Stewart-UNC & William F. McDonnell-EPA, PIs)

*Multicenter studies of diet and lipoproteins*

NHLBI 09/30/92 – 08/31/99

Goal: To conduct a multi-center, standardized, controlled dietary feeding study to examine a series of experimental dietary modifications that influence dietary fatty acids and cholesterol hypothesized to be related to coronary heart disease.

Role: GRA (Paul W. Stewart PI, UNC)

*US Population Projections using European Indicators of Population Growth*

Zero Population Growth, Germany 06/01/97 – 05/31/1998

Goal: To estimate US population growth to the year 2050 under scenarios of low fertility rates among teens and young adults

Role: PI

## **ACADEMIC SERVICE**

### *Division and/or Department*

- 2012- MScGH Admissions Committee
- 2015- MScGH Advisory Board
- 2012-15 DGHI Doctoral Scholars Committee.
- 2008-11 Faculty Budget Advisory Committee, Dept. of IH, JHSPH
- 2007-08 Department of International Health Strategic Planning Committee, JHSPH
- 2001-03 Social Chair. Department of Biostatistics, UNC-Chapel Hill

### *School*

- 2017 EEH Chair (Spring Semester, Temporary fill-in for Heather Stapleton)
- 2016- Director, Peru Priority Partnership Location for DGHI
- 2016- NSOE Faculty Council
- 2013- DGHI MSC-GH Faculty Advisory Committee.
- 2014-15 NSOE Environmental Health Task Force
- 2013-14 NSOE Undergraduate Program Strategic Planning Committee
- 2012-16 DGHI MScGH Admissions Committee.
- 1997-98 UNC Student International Health Committee. Chairman and Co-Founder.
- 1999-01 UNC Student International Health Committee. Social Chair.

### *University*

- 2016- Duke Intellectual Planning Program on Planetary Health, Chair
- 2016 Conference Organizer, Peru Symposium on Health and Environment, Oct 2016
- 2012- Faculty Member, Integrated Toxicology & Environmental Health Program
- 2012- Research Scholar, Duke Population Research Institute
- 2012- Council Member, Center for Latin American & Caribbean Studies
- 2014- Advisory Committee, Duke Brazil Initiative

2009-11 DrPH Advisory Committee. Department of International Health, JHSPH  
2000-02 UNC Global Health Committee, Student Representative.  
1995-95 Emory Global Health Organization. Chairman and Co-Founder.

## PRESENTATIONS (\* invited)

- \* **Pan, WK** "Overlapping Drivers of Malaria Risk in the Amazon", Weekly NASA/Goddard Space Flight Center Seminar, January 11, 2017
- \* **Pan, WK** "Climate, migration, and reproductive Health: Overlapping drivers of malaria risk in the Amazon". Climate Change & Emerging Infectious Disease Monthly Seminar, SUNY-Albany School of Public Health, January 10, 2017
- \* **Pan, WK** "Effect of Migration on Vulnerability: Recent evidence from the Peruvian Amazon". *Seminar on Migration, Climate Change, and Sustainable Development*, Specialist meeting organized by International Organization for Migration and Latin American Association of Population, Oct. 17-18, 2016
- \* **Pan, WK** "Migration, Deforestation & Climate: Threats to Malaria Control in the Amazon". *1<sup>st</sup> International Conference: Ecology and Evolution of Global Communicable Diseases*, Quito, Ecuador. March 14-16, 2016
- \* **Pan, WK** "Challenges implementing an Early Warning System for Malaria in the Amazon". *American Society of Tropical Medicine and Hygiene Annual Meeting*, Atlanta, GA. Nov. 11-16, 2016
- Pan, WK**, B Feingold, E. Ortiz, P. Meier, A Berky, C Weinhouse, AM Morales, H Hsu-Kim "Does El Nino increase mercury exposure?". *International Society for Environmental Epidemiology Annual Meeting*, Rome, Italy. Sept. 1-3, 2016
- \* **Pan, WK** "From Malaria to Mercury: Translating Scientific Research to Policy". *NIEHS Global Environmental Health Day*, RTP, NC. June 29, 2016
- \* **Pan, WK** "Tackling health challenges of transitional communities in Latin America and beyond". *American Society of Tropical Medicine and Hygiene Annual Meeting*, Philadelphia, PA. Oct. 24-28, 2015
- Pan, WK**, P. Bessong, C. Mason "Immune response to IPV-OPV vaccination in a birth cohort in South Africa: The MAL-ED Study". *American Society of Tropical Medicine and Hygiene Annual Meeting*, Philadelphia, PA. Oct. 24-28, 2015
- Pan, WK**, B Feingold, E. Ortiz, P. Meier, G. Salmon-Mulanovich, RE Bilsborrow "Quantifying vulnerability and resilience in the field". *International Society for Environmental Epidemiology Annual Meeting*, Sao Paulo, Brazil. Sept. 1-3, 2015
- \* **Pan, WK**, "Measuring efforts to reduce disparities and improve health equity", *Academy Health Annual Research Meeting*, Minneapolis, MN, June 15-17, 2015
- Pan, WK** "Association of enteropathogens, diarrhoea, and home environment with seroconversion of polio serotypes (1-3) following oral polio vaccination (OPV) in the MAL-ED Study". Bill and Melinda Gates Foundation, Seattle, WA. May 27-29, 2015
- \* **Pan, WK** "Health and Environment Interventions in the Western Amazon: 16 years of lessons learned". UNC-Duke 25<sup>th</sup> Anniversary of the Consortium in Latin American and Caribbean Studies. February 12-15, 2015
- Feingold, B., E. Ortiz, **WK Pan** "Resumen de estudios de investigación de salud pública en Madre de Dios de la Universidad de Duke" *Foro Regional: Mercurio y Salud Publica en Madre de Dios, UNAMAD*, November 2014

- \* **Pan, WK** "Determinants of Oral Polio Vaccine Response in the MALED Cohort" MAL-ED Scientific Advisory Committee for Data Analysis and Presentation (SACDAP). London, UK, January 22-24, 2015.
- Feingold, B, and **WK Pan** "Factors associated with malnutrition and dual disease burden among children living in the Peruvian Amazon", 26<sup>th</sup> Annual International Society for Environmental Epidemiology Conference, August 25, 2014, Seattle, WA
- \* **Pan, WK** Moderator for "*Humans and the Environment*", NC State University, Chancellor's Faculty Excellence Program Symposium April 24, 2014
- \* **Pan, WK** "*Women at the Center of the Human-Environment Interface*", Meredith College TEDx Talks, Raleigh, NC, First Annual Symposium on One Health in China, Kunshan, China, April 2014
- \* **Pan, WK** "Human Population – The Gorilla in the Room", First Annual Symposium on One Health in China, Kunshan, China, October 18, 2014
- \* **Pan, WK** "Population-Health-Environment Synergies", Panel on *Gorillas and Family Planning*, Wilson Center, Washington DC September 26, 2013
- Pan, WK** "Population and Climate change influencing Malaria Risk", IUSSP, Busan, South Korea, August 2013.
- Feingold, B., B. Zaitchik, **WK Pan** "Progress in the development of an Early Warning System for Malaria in the Amazon", ISEE meeting, August 2013 (Feingold presented) and ISPRS meeting August 2013 (Zaitchik presented)
- Liu, S. and **WK Pan** "Age of marriage and risk of vector-borne disease among children in the Peruvian Amazon" Population Association of America, April 2013
- Feingold, B., B. Zaitchik, and **WK Pan**, "Development of a Detection and Early Warning System for Malaria Risk in the Amazon" Health and Air Quality Application Program Review, NASA, September 2012.
- Feingold, B., B. Zaitchik, V. Shelus, A. Sandoval, CA Antonio, RP Zegarra-Vasquez, **WK Pan**, "Impact of climate and land cover influencing the spatial and temporal distribution of malaria risk in the Amazon", November 2012.
- \* **Pan, WK** "Population change, labor migration, and environmental change: Threats to malaria control in the Amazon" Society for Applied Anthropology, March 2012.
- Pan, WK**, RE Bilsborrow, B Feingold "Migration, health and environmental change along the Interoceanic Highway in Peru" Population Association of America, May 2012
- \* **Pan, WK** "Development of an Early Warning System for Malaria in the Amazon", UNC Gillings School of Global Health, Foard Lecture and Biostatistics Alumni Day
- \* **Pan, WK** "Impact of climate change on childhood enteric disease and nutrition" American Geophysical Union, *Invited Oral Presentation*, December 2011
- \* **Pan, WK** "Multiphasic response in a forest frontier" Duke Population Research Institute, *Invited Oral Presentation*, September 2011
- \* **Pan, WK** "Impacts of Climate Change on the Spread of Infectious Diseases" presented at the Beyond the Brink: Addressing Human Health and Security in a Changing Climate. *Invited Oral Presentation*, Duke University Annual Conference, Durham, NC, February 2011
- \* **Pan, WK** "Multiphasic response in a forest frontier" Gates Institute for Family and Reproductive Health, Baltimore, MD, *Invited Oral Presentation*, October 2010
- \* **Pan, WK** "LQAS as a monitoring tool – Practical thoughts when applied in developing countries" Annual Meeting of the American Public Health Association, Denver, CO *Invited Oral Presentation*, November 2010

- Pan, WK**, DL Carr, RE Bilborrow "Population, multi-scale processes, and land use transitions in the Ecuadorian Amazon" European Population Conference, Vienna, Austria, September 2010
- Pan, WK**, P. Yori, M. Olortegui, K. Lin, R. Gilman, M. Kosek. "Impact of Climate Variability on Diarrhea Pathogenicity" 6<sup>th</sup> International Conference on Geomedical Systems, GEOMED/SAMSI (Statistical and Applied Mathematical Sciences Institute), Charleston, SC, November 14-16, 2009.
- Pan, WK**, D. Ramachandran and D. Carr "Shifts in fertility determinants among women living in the Amazon over time" Population Association of America Annual Meeting, Detroit, MI, April 29-May 2, 2009.
- Pan, WK** and F. Zhao "Human migration impacts on land use in the Amazon" International Union for the Scientific Study of Population, Marrakesh, Morocco, September 26-October 1, 2009.
- Conlisk, E., S. Proescholdbell, & **WK Pan** "Impact of tobacco-free school policies on current tobacco use in high school students in North Carolina." Presented at the 135<sup>th</sup> APHA Annual Meeting (November 3-7, 2007), Boston, MA.
- Farley, JE, M. Ram, **WK Pan**, S. Waldman, G. Cassell, R. Chaisson, K. Weyer, M. Van der Walt "Outcomes of Multi-drug Resistant Tuberculosis Treatment amongst a South African Cohort with High HIV Prevalence." Presented at the 2007 Union World Conference on Lung Health, Capetown, South Africa, November 8-12, 2007.
- \* **Pan, WK** & A. Schaap "GIS and ZAMSTAR." 4<sup>th</sup> Annual CREATE / Bill & Melinda Gates Foundation Meeting. Rio de Janeiro, Brazil. September 24-26, 2007.
- Pan, WK** "Multilevel models in population-environment research" Department of Demography and Economic Sciences, Universidade Federal do Minas Gerais, Belo Horizonte, Brazil. September 19, 2007.
- Pan, WK** "Deforestation and Malaria: What's the connection?" Department of Environmental and Occupational Health, Rollins School of Public Health of Emory University. March 14, 2007.
- Pan, WK** "Integrating Satellite Data in Vector-borne Disease Models: A case study in the Peruvian Amazon" Department of International Health, Johns Hopkins University, January 17, 2007
- Pan, WK** & D.L Carr. "The ecological fallacy and land use research – Can multilevel models account for scale." Presented at the 2007 Annual meeting of the American Association of Geographers, April 17-21, 2007.
- Pan, WK** "Spatial distribution of high risk pregnancy and health case access in Bangladesh" Presented at the 2007 Annual meeting of the American Association of Geographers, April 17-21, 2007.
- \* **Pan, WK** "Integrando informacion satelital para predecir y pronosticar la malaria en la Cuenca Amazonica." Universidad Cayetano Heredia, Lima, Peru. March 7, 2007.
- Pan, WK**, M. Kosek, P.P. Yori, M. Olortegui, and R. Gilman. "A spatial analytic approach to analyze Shigella transmission." Presented at the 2006 Annual Meeting of the Population Association of America, April 1, 2006, Los Angeles, CA.
- Pan, WK** and S. Proescholdbell. "Improving Estimates of Adolescent Tobacco Use in North Carolina using the Youth Tobacco Survey." Presented at the 133<sup>rd</sup> Annual Meeting of the American Public Health Association, December 10-14, 2005, Philadelphia, PA.
- Pan WK** "Is spatial dependency a problem in Community Randomized Trials?" Presented at the 133<sup>rd</sup> Annual Meeting of the American Public Health Association, December 10-14, 2005, Philadelphia, PA

- Pan, WK** "Linking population and health to environment and land use in Amazonia" Presented at the GIS Population Science Workshop – UCSB 2005, June 19-July 2, 2005, Santa Barbara, CA.
- Walsh, S.J., **WK Pan**, C.M. Erlien, and C.F. Mena. "Land, Fragmentation and Change Patterns as Descriptors of Deforestation in the Ecuadorian Amazon Frontier." Presented at the 2005 annual meeting of the Association of American Geographers, April 5-9, 2005, Denver, CO.
- Pan, WK**, and C. Erlien. "The impact of population-environment dynamics on human health in the Ecuadorian Amazon." Presented at the 132nd Annual Conference of the American Public Health Association (APHA), Washington D.C., November 6-10, 2004
- Pan, WK**, D.L. Carr, and R.E. Bilsborrow. "Determinants of farm fragmentation in the Ecuadorian Amazon." Conference for Latin American Geographers. Antigua, Guatemala, May 19-22, 2004.
- Pan, WK**, A. Barbieri, R.E. Bilsborrow. "Land use transitions in Ecuador's Northern Amazon: Multilevel and spatial factors." International Workshop on Transitions in Agriculture and Future Land Use Patterns, Wageningen, The Netherlands. November 30-December 3, 2003.
- \* **Pan, WK** and D.L. Carr. "Multilevel factors influencing land use change in the Ecuadorian Amazon." Presented at the International Young Scientists' Global Change Conference, Trieste, Italy. November 16-21, 2003.
- Pan, WK** and D.L. Carr. "Multilevel factors influencing births on the Ecuadorian Amazon Frontier." Presented at the 68<sup>th</sup> Annual Meeting of the Population Association of America (PAA). Minneapolis, MN, May 1-3, 2003.
- Pan, WK** and R.E. Bilsborrow. "Multilevel statistical models to assess factors influencing land use: A case study in the Ecuadorian Amazon." Presented at the 68<sup>th</sup> Annual Meeting of the PAA. Minneapolis, MN, May 1-3, 2003.
- Pan, WK** and D.L. Carr. "Links between Fertility, Farm Size and Land Use on the Frontier: Evidence from the Ecuadorian Amazon". Presented at the 130<sup>th</sup> Annual Conference of the APHA. Philadelphia, PA., November 9-13, 2002.
- Carr, D. L. and **WK Pan**. "Fertility Determinants on the Frontier: Longitudinal Evidence from the Ecuadorian Amazon." International Geographic Union. Durban, South Africa. August, 4-7, 2002.
- Carr, D.L. and **WK Pan**. "Fertility Determinants on the Frontier: Longitudinal Evidence from the Ecuadorian Amazon". Presented at the 67<sup>th</sup> Annual Meeting of the PAA. Atlanta, GA, May 9-11, 2002.
- Bilsborrow, R.E. and **WK Pan**. "Population Growth, Fragmentation of Plots and Land Use Change in the Ecuadorian Amazon." Presented at the IUSSP General Population Conference, Salvador, Brazil, August 13-18, 2001.
- Bilsborrow, R.E., **WK Pan**, S.J. Walsh, and K.A. Crews-Meyer. "Change Patterns of Population and Land Use in Ecuador's Northern Amazon." Human Dimensions of Global Environmental Change Research Community Meeting, Special Session. Rio de Janeiro, Brazil, October 6-8, 2001.
- Pan, WK**, L. Murphy, B. Sullivan, and R.E. Bilsborrow. "Population and Land Use in Ecuador's Northern Amazon in 1999: Intensification and Growth in the Frontier." Presented at the 66<sup>th</sup> Annual Meeting of the PAA, Washington DC, March 29-31, 2001.
- Pan, WK** "LCLUC Models that account for Spatial Patterns in the Ecuadorian Amazon." Presentation at the 2001 Eastern North American Region of the International Biometric Society, March 25-28, 2001.

**Pan, WK** and R.E. Bilsborrow. "Changes in Ecuadorian farm composition over time – Population pressures and changes in land use." Presented at the 65<sup>th</sup> Annual Meeting of the PAA. Los Angeles, CA. March 23-25, 2000.

Murphy, L. and **WK Pan**. "Permanence and adaptation among settler households in Ecuador's Amazon." Presented at the Latin America Studies Association National Meeting. Miami, FL. March 16-18, 2000.

Taff, G., **WK Pan**, R.E. Bilsborrow. "Population pressure, subdivision and land clearing in the Ecuadorian Amazon." Presented at the Latin America Studies Association National Meeting. Miami, FL. March 16-18, 2000.

Wohl, D., B. Ngo, S. Fiscus, J. Handy, T. Alcorn, M. Cronin, **WK Pan**, D. Rosen, and C. Van der Horst. "CMV Viremia and the Risk of CMV End-Organ Disease (EOD) or Death in Patients with AIDS." Presented at the 7<sup>th</sup> Conference on Retroviruses and Opportunistic Infections. San Francisco, CA. January 30 – February 4, 2000.

## **HOBBIES**

Outside of academic life, I am involved in several activities to try to maintain balance. These include: spending time with my family, playing soccer regularly, fishing, camping, hiking, golfing, exploratory travel, snorkeling and scuba, and helping my wife manage her olive oil farm in Kalamata, Greece ([www.karmirioliveoil.com](http://www.karmirioliveoil.com)).