

Curriculum Vitae

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Research interests

Social epidemiology, Urban health, Chronic Diseases (Liver disease, Cardiovascular disease, Cancer, Hypertension), Physical Activity, Machine Learning in Health, IoT in Health, mHealth.

Education

2019 - now *PhD in Epidemiology* - Department of Epidemiology & Biostatistics, Dornsife School of Public Health, Drexel University, Philadelphia, PA. USA

– Dissertation: **Urban environments and chronic liver disease**

— Dissertation Committee: Usama Bilal (chair), Mariana Lazo, Ana Diez-Roux, Harrison Quick, Steven Solga.

2010 - 2016 *Medical Doctor* - Faculty of Medical Sciences, University of San Carlos of Guatemala, Guatemala.

Other Significant Training

2019 Multilevel Modeling Course, Drexel University and Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

2018 Physical Activity and Public Health (Advanced course), National Institute of Public Health. Cuernavaca, México.

2016 NIH Clinical Research Training Course, National Institutes of Health.

2016 Nutritional Research for Chronic Disease Epidemiology, Institute of Nutrition of Central America and Panama and School of Public Health, University of Michigan.

2009 Internet Services, Galileo University, Guatemala.

Employment

September 2019 – to date Graduate Research Fellow in the Urban Health Collaborative, Dornsife School of Public Health, Drexel University.

January 2017 – August 2019 Researcher in the INCAP Research Center for the Prevention of Chronic Diseases –CIIPEC–, Institute of Nutrition of Central América and Panamá –INCAP–

- **December 2018 - August 2019** National Consultant, The Economic and Social Cost of the Double Burden of malnutrition in Central America (Guatemala, Dominican Republic, El Salvador and Honduras), in partnership with the World Food Program (WFP) and the Economic Commission for Latin American and the Caribbean (ECLAC), United Nations.
- **June 2018 - October 2018** Hy-TREC Project, in partnership with Tulane University School of Public Health and Tropical Medicine; Colorado School of Public Health, UC-Denver; INCAP, Guatemala.
- **April 2017 - August 2019** Data Analyst of the Central American hub for the "Salud Urbana en América Latina" project, in partnership with Dornsife School of Public Health, Drexel University. INCAP, Guatemala
- **January - March 2017** Data Analyst for Guatemala in the Child Health and Nutrition Impact Study (ChNIS) in partnership with Bloomberg School of Public Health, Johns Hopkins University.

June - December 2016 Research Fellow in the INCAP Research Center for the Prevention of Chronic Diseases (CIIPEC).

- Field coordinator. Child Health and Nutrition Impact Study (ChNIS) in partnership with Bloomberg School of Public Health, Johns Hopkins University. INCAP, Guatemala

Teaching

2021 *Teaching Assistant.* Intermediate Epidemiology, Department of Epidemiology & Biostatistics, Drexel University. Philadelphia PA.

2020 *Teaching Assistant.* Data Visualization for Urban Health, Urban Health Collaborative Summer Institute, Drexel University. Philadelphia PA.

2017 *Instructor.* Introduction to Statistical Programming with Python, Faculty of Engineering, University of San Carlos of Guatemala and Unit of Training and Development of Human Resources Institute of Nutrition of Central America and Panamá. Guatemala, Guatemala.

2016 *Instructor.* Use of Bibliographic Managers: Mendeley, INCAP's Center for the Prevention of Chronic Diseases, Institute of Nutrition of Central America and Panamá. Guatemala, Guatemala.

2014 *Tutor.* Hospital Tutoring Program, Faculty of Medical Science. University of San Carlos of Guatemala.

2012 *Tutor.* Student Tutoring Program, Faculty of Medical Science. University of San Carlos of Guatemala.

2012 *Course director.* Pre-University Course in Faculty of Medical Sciences. University of San Carlos of Guatemala.

2012 *Instructor.* Biology course (Pre-University course), Faculty of Medical Science. University of San Carlos de Guatemala.

2011 *Instructor.* Biology course (Pre-University course). Faculty of Medical Sciences in University of San Carlos of Guatemala.

Seminars/ Guest Lecturer

2020 *Guest Speaker* COVID-19 in Guatemala: Epidemiology. Faculty of Medical Sciences, University of San Carlos, Guatemala.

2020 *Guest Speaker* COVID-19 in Guatemala: Trends and Simulation Models. Guatemalan Society of Infectious Diseases. (AGEI)

2018 *Guest Lecturer*. "Introduction to the use of scientific evidence and correct citation". Nutrition and Public Health Course, Faculty of Nutrition Sciences in University Del Valle of Guatemala.

2018 *Guest Lecturer*. "Introduction to the use of scientific evidence and correct citation". Nutrition and Public Health Course, Faculty of Nutrition Sciences in University Del Valle of Guatemala.

2018 *Guest Lecturer*. "Urban Health". Urban Health Forum, Faculty of Agricultural Sciences in Rafael Landivar University, Guatemala.

2017 *Guest Lecturer*. "Career in Research". SOCIG Seminar, Faculty of Medical Sciences, University of San Carlos, Guatemala.

Institutional Honors Position

2021-2023 Doctoral Student Representative at Curriculum and Assessment Committee, Dornsife School of Public Health, Drexel University.

2021-2023 Vice-president of the Institutional Ethics Committee, Institute of Nutrition of Central America and Panamá, Guatemala.

2020-2021 Doctoral Student Representative at Steering Committee, Urban Health Collaborative, Dornsife School of Public Health, Drexel University.

2018-2020 Vice-president of the Institutional Ethics Committee, Institute of Nutrition of Central America and Panamá, Guatemala.

2013 President of the National Medical Student Association "Gustavo Adolfo Hernandez", Guatemala.

2013 Titular Member of the Higher University Council of Central America –CSUCA–.

2013 Vice-President and Founder member of Scientific Society of Guatemala.

2013 National Delegate of Guatemala in the General Assembly of the Latin American Federation of Scientific Societies of Medical Students.

2012 First Substitute of General Secretary in the National Medical Student Association "Gustavo Adolfo Hernandez".

Awards and Fellowships

2022 **Society for Epidemiologic Research** Student Dissertation Workshop Travel Award

2021 **Society for Epidemiologic Research** 2020 Tyroler Student Prize Paper Award Finalist

2020 **American Public Health Association** 2020 Trong D. Nguyen Memorial Award Finalist

2020 **Society for Epidemiologic Research** Travel Award

2018 **Fogarty Scholarship** Physical Activity and Public Health (Advanced course), National Institute of Public Health. Cuernavaca, México.

Affiliated Organizations and Societies

- Society for Epidemiologic Research – SER-
- Interdisciplinary Association for Population Health Science - IAPHS -
- College of Physicians and Surgeons of Guatemala
- College of Physicians of Philadelphia, Public Health Section.
- Urban Health Network for Latin America and the Caribbean, Drexel University.

Medical License

Medical registry No. 21,113

College of Physicians & Surgeons of Guatemala.

Scientific publications

1. Mullachery P, Rodriguez DA, Miranda JJ, López-Olmedo N, **Martinez-Folgar K**, Barreto ML, Diez-Roux AV, Bilal U. *Mortality amenable to healthcare in Latin American cities: a cross-sectional study examining between-country variation in amenable mortality and the role of urban metrics*. International Journal of Epidemiology, Volume 51, Issue 1, February 2022, Pages 303–313, <https://doi.org/10.1093/ije/dyab137>
2. Bilal U, Caio P de Castro, Alfaro T, Barrientos-Gutierrez T, Barreto M, Leveau C, **Martinez-Folgar K**, Miranda JJ, Montes F, Mullachery P, Pina MF, Rodriguez DA, Dos Santos GF, Andrade RFS, Diez-Roux AV. *Scaling of mortality in 742 metropolitan areas of the Americas* Science advances, 7(50), eabl6325. <https://doi.org/10.1126/sciadv.abl6325>
3. Lima EEC, Vilela EA, Peralta A, Rocha M, Queiroz BL, Gonzaga MR, Piscocoy-Diaz M, **Martinez-Folgar K**, Garcia-Guerrero VM, Freire FHMA. *Investigating regional excess mortality during 2020 COVID-19 pandemic in selected Latin American countries*. Genus 77, 30 (2021). <https://doi.org/10.1186/s41118-021-00139-1>
4. **Martinez-Folgar K**, Alburez D, Paniagua-Avila A, Bilal U. *Excess Mortality During the COVID-19 Pandemic in Guatemala*. American Journal of Public Health 111, 1839-1846, <https://doi.org/10.2105/AJPH.2021.306452>
5. Gouveia N, Kephart JL, Dronova I, McClure L, Granados JT, Betancourt RM, O’Ryan AC, Texcalac-Sangrador JL, **Martinez-Folgar K**, Rodriguez D, Diez-Roux AV. *Ambient fine particulate matter in Latin American cities: Levels, population exposure, and associated urban factors..* Science of The Total Environment. 2021 Jun 10;772:145035. <https://doi.org/10.1016/j.scitotenv.2021.145035> PMID: 33581538; PMCID: PMC8024944.
6. Bilal U, Diez-Roux AV, Rodriguez D, Alazraqui M, Vives A, **Martinez-Folgar K**, Miranda JJ, Lopez Olmedo N, Caiaffa W. *Inequalities in life expectancy in six large Latin American cities from the SALURBAL study: an ecological analysis*. The Lancet Planetary health.3 (12), e503-e510 Available at: [https://doi.org/10.1016/S2542-5196\(19\)30235-9](https://doi.org/10.1016/S2542-5196(19)30235-9)
7. Henson RM, Ortigoza A, **Martinez-Folgar K**, Baeza F, Caiaffa W, Vives Vergara A, Diez Roux AV, Lovasi G. *Evaluating the health effects of place-based slum upgrading physical environment interventions: A systematic review (2012–2018)* Social Sciences and Medicine. (261)2020, Available at <https://doi.org/10.1016/j.socscimed.2020.113102>
8. Fort M, Paniagua-Avila A, Beratarrechea A, Cardona S, Figueroa JC, **Martinez-Folgar K**, Moyano D, Barrios E, Mazariegos BE, Palacios E, Irazola V, Ramirez-Zea M. *Stakeholder Engagement in the Translation of a Hypertension Control Program to Guatemala’s Public Primary Health Care System:*

Lessons Learned, Challenges, and Opportunities Global heart 14(2). Available at <https://doi.org/10.1016/j.gheart.2019.05.005>

9. Edward A, Bowles C, Ramirez-Zea M, Sanchez JF, Brown A, **Martinez-Folgar K** , Ghee AE. *Care-seeking patterns for common pediatric illnesses: A mixed methods study in rural Guatemala*. Science Publishing Group Journal 2018:1(2), Available at: <https://spg.ltd/wp-content/uploads/2018/09/002-SPG.pdf>

Letters, Commentaries and Editorials

1. Lazo M, **Martinez-Folgar K**, Bilal U. *Racial/ethnic disparities in hepatocellular carcinoma: the role of neighborhood socioeconomic deprivation*. Cancer Epidemiology, Biomarkers & Prevention. Accepted for publication
2. **Martinez-Folgar K**, Salomon V . *Student scientific publication: a look at the Guatemalan reality*. Educacion medica. 2017;18(1): 79. <http://dx.doi.org/10.1016/j.edumed.2016.08.003>
3. **Martínez-Folgar K**. *Aplicaciones móviles para uso del médico: ¿están basadas en evidencia?*. Rev Hisp Cienc Salud. 2016;2(2): 192-193.
4. **Martinez-Folgar K**. *Diagnostic methods: Utopia in Guatemala's rural public service?*. Rev Calid Asist. 2016. PMID 27575404. <http://dx.doi.org/10.1016/j.cali.2016.06.008>
5. **Martinez-Folgar K** . *Educación médica basada en competencias: la nueva torre de babel*. Inv Ed Med. 2016. <http://dx.doi.org/10.1016/j.riem.2016.06.001>

Presentations at Scientific Meetings (Oral Presentations)

1. **Martinez-Folgar K**, *Spatial Heterogeneity in Excess Mortality During the COVID-19 Pandemic in Guatemala*. 17th International Conference on Urban Health, International Society for Urban Health, United States. July 2021
2. **Martinez-Folgar K**, *Mortality trends during the COVID-19 pandemic in Guatemala*. 2020 SER Digital Meeting, Society for Epidemiologic Research, United States. November 2020
3. Goodman-Levy W, **Martinez-Folgar K**, *Heat related mortality in 340 guatemalan municipalities*. 2020 Annual Meeting, American Public Health Association, United States. November 2020
4. **Martinez-Folgar K**, Lazo M, Bilal U. *Liver cancer mortality disparities between Hispanics and Non-Hispanics Whites in US cities*. 2020 Annual Meeting, Society for Epidemiologic Research, United States. December 2020
5. **Martinez-Folgar K**,. *Modeling a pandemic: COVID-19 in Guatemala*. VI National Congress of Physics and Mathematics, USAC-UVG-UMG, Guatemala, September 2018
6. **Martinez-Folgar K**, Kroker-Lobos, MF. *Geospatial Analysis of Mortality in Guatemala: Challenges and Opportunities*. IX National Congress of Epidemiology, Ministry of Health of Guatemala. October 2018

Presentations at Scientific Meetings (Poster Presentations)

1. **Martinez-Folgar K**, Lazo M, Bilal U. *Racial/ethnic disparities in hepatic steatosis, inflammation, and fibrosis in the U.S. Population (NHANES 2017-2018)*. Society for Epidemiologic Research Annual Meeting 2022

2. **Martinez-Folgar K**, Bilal U, Quick H, Alfaro T, Stern D, Barrientos T, Miranda JJ, Ramirez-Zea M, Diez-Roux A, Lazo M. *Liver disease mortality across 366 Latin American cities: evidence from the SALURBAL study* International Conference for Urban Health, 2021.
3. **Martinez-Folgar K**. *Mortality trends during the COVID-19 Pandemic: What happened in Guatemala?*. SERdigital Fall 2020

Scientific Reports and Policy Briefs

1. **2021** Dialogos Guatemala, Las disparidades del proceso de vacunacion contra la COVID-19
2. **2019** World Food Program, El costo de la doble carga de la malnutrición: Impacto social y económico (Guatemala)
3. **2019** World Food Program, El costo de la doble carga de la malnutrición: Impacto social y económico (El Salvador)
4. **2019** World Food Program, El costo de la doble carga de la malnutrición: Impacto social y económico (Honduras)
5. **2019** World Food Program, El costo de la doble carga de la malnutrición: Impacto social y económico (Republica Dominicana).

Software Skills

Python (pandas, numpy, matplotlib, etc.), R (base, tidyverse, ggplot2, etc.), Stata, QGIS, Markdown, LaTeX, PHP, SQL.

Peer-review activities

Journal Reviewer

Geospatial Health
Diabetes Care
British Medical Journal

Review of Abstracts for Scientific Meetings

2022 Society for Epidemiologic Research Annual Meeting
2021 International Population Conference
2021 Society for Epidemiologic Research Annual Meeting
2020 Society of Epidemiologic Research Fall Conference
2020 American Public Health Association - Epidemiology Section

Media/News appearances

(clickable links)

2022

2022 Prensa Libre - Accidentes de tránsito: historias de víctimas, tras ese instante trágico que les cambia la vida

2022 Prensa Libre - Nuevo sistema del semáforo epidemiológico hace más difícil que un municipio esté en alerta roja

2022 Prensa Libre - La expectativa de vida en Guatemala cayó 2 años debido a la pandemia

2021

2021 Prensa Libre - 74% de estudiantes aún no pueden vacunarse, son los niños que cursan primaria y preprimaria

2021 Prensa Libre - ¿Hay dosis suficientes para vacunar contra el covid-19 a los adolescentes en Guatemala?

2021 New York Times - 723 Epidemiologists on When and How the U.S. Can Fully Return to Normal

2021 Prensa Libre - Las vacunas contra el covid 19 estan por agotarse en el pais la mayoría son para segundas dosis

2021 Prensa Libre - 40% de guatemaltecos estaría fuera del plan de vacunación contra el covid-19, las desigualdades que persisten en el país son parte del problema

2021 Prensa Libre - Mineduc pide suspender clases presenciales en municipios con alerta naranja y tendencia a rojo

2021 Prensa Libre - Coronavirus al ritmo de vacunacion actual, en 19 anos guatemaltecos estarian vacunados

2021 Ojoconmipisto - El poder local comunitario ya se tiene, el problema sera la logistica de la vacunacion

2020

2020 Guatevision - Noticiero Guatevision 6 pm, 11 de diciembre de 2020: Min 0:30

2020 Guatevision - Noticiero Guatevision 1 pm, 11 de diciembre de 2020: Min 7:20

2020 Prensa Libre - Coronavirus: municipios de Sacatepéquez, Chimaltenango, Quetzaltenango, San Marcos, Alta Verapaz, Petén y Chiquimula pasarán a rojo

2020 EFE - Guatemala admite que hubo 40 a 50 % de exceso de mortalidad a partir de junio

2020 Forbes Centroamerica - Guatemala admite que hubo hasta 50% exceso de mortalidad desde junio

2020 Diario Libre - Guatemala admite que hubo hasta 50% exceso de mortalidad desde junio

2020 elPeriodico - “En Guatemala no se sabe si hay más muertos en la zona 1 o en la zona 10”

2020 Prensa Libre - Exceso de mortalidad en el país durante la pandemia

2020 Prensa Libre - Verificamos por usted: ¿Los asintomáticos pueden convertirse en supercontagadores del covid-19?

2020 Plaza Publica - COVID19 se ensaña con la juventud guatemalteca

2020 Nomada - Epidemiólogo: “Temo un aumento brusco de casos que no podremos detectar”

2020 Plaza Publica - COVID19 En 5 gráficos: La mortalidad ha crecido en la capital pero no en el país con respecto a años anteriores

2020 Plaza Publica - VIDEO Epidemiólogo: “De momento se hace casi imposible hacer una comparación sin sesgo entre países”

2020 Nomada - (Mapas y datos) Así está la pandemia al otro lado de las débiles fronteras de Guatemala

2020 Nomada - (Mapas y Datos) ¿Qué departamentos corren más riesgo ante el COVID-19?

2020 (Gráficas) Guatemala: el gran perdedor en pruebas de COVID-19 en América Latina

2020 Nomada - 6 Expertos y 6 razones por las que el acceso a datos es importante para enfrentar al COVID-19

2020 Nomada - (Audios) La lucha contra el COVID-19: así es la vida en el hospital del Parque de la Industria

2020 Nomada - COVID-19: Cinco meses después no conocemos la magnitud real de la pandemia