

Omar Yaxmehen Bello-Chavolla

Medical Doctor, specialist in Applied Statistics and PhD in Medicine, graduated summa cum laude from UNAM. I am an Associate Professor at the National Institute for Geriatrics in Mexico, I am also a Human Physiology and Statistics lecturer at the Faculty of Medicine at UNAM. My research recent work has focused on the development of machine learning approaches to improve personalized medicine in cardio-metabolic diseases, as well consistent data-driven evaluations of the impact of COVID-19 in Mexico and the assessment of metabolic aging through body composition analyses. For my research work, I have received the Dr. Jorge Rosenkranz award for Medical Research for the development of the METS-IR index to quantify peripheral insulin sensitivity and in 2019 the Mexico City government awarded me the Youth Merit Award in Environmental and Public Health.



bello
chavolla | lab 

View this CV online with links at <http://oyaxbell.github.io/cv>

💻 Research Experience

Current
I
2020

- **Associate Professor**
Bello-Chavolla Lab, Research Division  Instituto Nacional de Geriatría
 - Lab Coordinator
 - Lines of research: 1) Data-driven phenotypes of Metabolic and functional aging. 2) Heterogeneity of metabolic diseases in Mexican and admixed populations. 3) Artificial Intelligence and Machine Learning applied for the study of metabolic diseases.

2019
I
2016

- **Graduate Researcher**
Metabolic Disease Research Unit  Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán
 - PhD researcher in Metabolism and Applied Statistics
 - Projects: Development of carido-metabolic surrogates for epidemiologic research
 - 15 published articles, 3 book chapters.

2017
I
2017

- **Visiting PhD Student**
Bordeaux, France  Institut de Santé Publique, D'épidémiologie et de Développement, Université de Bordeaux, France
 - Visiting PhD work with the Three City Study
 - Project: Development of a predictive model for dementia in type 2 diabetes
 - Training in Applied Statistical Modeling using R

🎓 Education

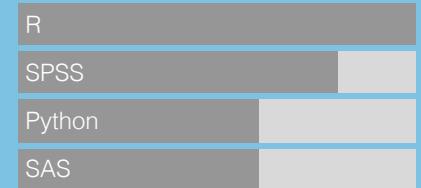
2019
I
2017

- **PhD In Medicine**
Mexico City, Mexico  Faculty Of Medicine - Universidad Nacional Autónoma de México (UNAM)
 - Graduated Summa Cum Laude
 - Mentorship: Dr. Carlos A. Aguilar-Salinas

Contact

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- 👤 <https://orcid.org/0000-0003-3093-937X>
- 🔗 <http://bellolab.org>
- linkedin <https://bit.ly/2QWWrPT>

Language Skills



Made with the R package
[pagedown](#).

Last updated on 2021-05-09.

2019
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2018

- **Specialist In Applied Statistics**
Mexico City, Mexico
📍 Institute for Research in Applied Mathematics and Systems - Universidad Nacional Autónoma de México (UNAM)
 - Graduated Summa Cum Laude
- **Medical Doctor**
Mexico City, Mexico
📍 Faculty Of Medicine - Universidad Nacional Autónoma de México (UNAM)
 - Graduated Summa Cum Laude

2018
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2011

▢ Teaching Experience

Current
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2020

- **Statistics Lecturer**
Mexico City, Mexico
📍 PhD in Medicine and Masters in Sociomedical Sciences, Universidad Nacional Autónoma de México
 - Topics: Multivariate Statistics, Introduction to Statistical Modeling
- **Physiology Lecturer**
Mexico City, Mexico
📍 Department of Physiology, Faculty of Medicine, Universidad Nacional Autónoma de México
 - Topics: Human Physiology

Current
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2018

Areas of Expertise: R programming, Data management, Experimental design, Fixed and random effects models, Mediation analysis, Predictive modeling, Parametric and non-parametric Survival analysis. Supervised machine learning, Boosting, Neural Networks

I am a main lecturer of the graduate programs of the PhD in Medicine and Masters in Sociomedical Sciences degrees at the National Autonomous University of Mexico (UNAM). I also teach undergraduate Physiology as part of the General Medicine Curriculum at the Faculty of Medicine at UNAM.

🏆 Research Awards

2020

- **SNI 1**
CONACyT 📍 Mexico City, Mexico
 - Recognized as National Researcher Level I (SNI 1) by the National Researcher System of the Mexican National Council for Science and Technology

2020

- **Interstellar Initiative Award**
New York Academy of Sciences 📍 New York, USA
 - Selected as participant in the Interstellar Initiative 2020-2021 Workshop by the New York Academy of Sciences and the Japan Agency for Medical Research and Development

2020

- **Lindau Nobel Laureates Meeting**
Lindau Nobel Laureates Fundatio 📍 Lindau, Germany
 - Selected as representative of the Mexican National Academy of Sciences to participate in the 70th Lindau Nobel Laureate Meeting to be conducted in Lindau, Germany during July 2021.

2019	<ul style="list-style-type: none"> Best Scientific Paper Published During 2018 National Institutes for Health 	Mexico City, Mexico
	<ul style="list-style-type: none"> • Best original Scientific Paper published during 2018 from the National Institutes of Health in Mexico, awarded by the National Health Ministry. 	
2019	<ul style="list-style-type: none"> Mexico City Youth Award 2019 Mexico City Government 	Mexico City, Mexico
	<ul style="list-style-type: none"> • Mexico City Youth Award 2019 in the “Public Health and Environment” category for the development of metabolic risk prediction tools specific for Mexican population. 	
2018	<ul style="list-style-type: none"> Gustavo Parada Social Service Award National Autonomous University of Mexico 	Mexico City, Mexico
	<ul style="list-style-type: none"> • Gustavo Baz Prada Social Service Award 2018 for the program “Development of predictive models in Metabolic Research”, awarded by UNAM. 	
2018	<ul style="list-style-type: none"> Dr. Jorge Rosenkranz Award For Clinical Research Mexical Healthcare Foundation 	Mexico City, Mexico
	<ul style="list-style-type: none"> • Dr. Jorge Rosenkranz 2018 Medical Research Award in Clinical Research for the work “METS-IR, a novel score to evaluate insulin sensitivity, is predictive of visceral adiposity and incident type 2 diabetes” awarded by the Mexican Healthcare Foundation 	

Innovations

2020	<ul style="list-style-type: none"> Mechanistic Score For COVID-19 Lethality (MSL-COVID-19) Predictive model
	<ul style="list-style-type: none"> • Models developed to assess risk of mortality and severe COVID-19 using particularities of cardio-metabolic comorbidities in Mexicans. These tools were employed within the clinical triage facility of the Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán in Mexico City. • Published on doi:10.1371/journal.pone.0244051 • Link: https://uiem.shinyapps.io/nutri_cov/
2019	<ul style="list-style-type: none"> Metabolic Score For Visceral Fat (METS-VF) Clinical Marker
	<ul style="list-style-type: none"> • I developed an equation that combines METS-IR with age and the waist to height index to estimate visceral adiposity, as well as metabolic risk for type 2 diabetes mellitus and incident systemic arterial hypertension. It is specific for Mexican and Latin American population. • Published on: doi:10.1016/j.clnu.2019.07.012
2019	<ul style="list-style-type: none"> Deep Learning For Classification Of Data-Driven Diabetes Subtypes (Clusters SNNN) Classification algorithm
	<ul style="list-style-type: none"> • Development of a model using self-normalizing neural networks to optimize the pathophysiological classification in diabetes. • Published on doi: 10.1136/bmjdrc-2020-001550 • Link: https://uiem.shinyapps.io/diabetes_clusters_app/

2018

● **Metabolic Score For Insulin Resistance**

Clinical Marker

- I developed a tool for evaluation of insulin sensitivity and prediction of incident type 2 diabetes mellitus, specific for use in the Mexican and Latin American population.
- Published on [doi:10.1530/eje-17-0883](https://doi.org/10.1530/eje-17-0883)
- Link: https://en.wikipedia.org/wiki/Metabolic_Score_for_Insulin_Resistance

● **Selected Publications**

2021

● **Pushing The Boundaries Of Precision Nutrition To Tackle Alzheimer's Disease: Is There A Role For DHA?.**

The American Journal of Clinical Nutrition

- Fernandez-Chirino L, Antonio-Villa NE, Bello-Chavolla OY.
- <https://doi.org/10.1093/ajcn/nqab085>

2021

● **Adaptive Metabolic And Inflammatory Responses Identified Using Accelerated Aging Metrics Are Linked To Adverse Outcomes In Severe SARS-CoV-2 Infection.**

The Journals of Gerontology. Series A, Biological sciences and medical sciences

- Márquez-Salinas A, Fermín-Martínez CA, Antonio-Villa NE, Vargas-Vázquez A, C Guerra E, Campos-Muñoz A, Zavala-Romero L, Mehta R, Bahena-López JP, Ortiz-Brizuela E, González-Lara MF, Roman-Montes CM, Martínez-Guerra BA, Ponce de Leon A, Sifuentes-Osornio J, Gutiérrez-Robledo LM, Aguilar-Salinas CA, Bello-Chavolla OY.
- <https://doi.org/10.1093/gerona/glab078>

2021

● **Validation And Repurposing Of The MSL-COVID-19 Score For Prediction Of Severe COVID-19 Using Simple Clinical Predictors In A Triage Setting: The Nutri-CoV Score.**

PLoS One

- Bello-Chavolla OY, Antonio-Villa NE, Ortiz-Brizuela E, Vargas-Vázquez A, González-Lara MF, de Leon AP, Sifuentes-Osornio J, Aguilar-Salinas CA.
- <https://doi.org/10.1371/journal.pone.0244051>

2020

● **Profiling Cases With Non-Respiratory Symptoms And Asymptomatic SARS-CoV-2 Infections In Mexico City.**

Clinical infectious Diseases

- Bello-Chavolla OY, Antonio-Villa NE, Vargas-Vázquez A, Fermín-Martínez CA, Márquez-Salinas A, Bahena-López JP.
- <https://doi.org/10.1093/cid/ciaa1288>

2020

● **Health-Care Workers With COVID-19 Living In Mexico City: Clinical Characterization And Related Outcomes.**

Clinical infectious Diseases

- Antonio-Villa NE, Bello-Chavolla OY, Vargas-Vázquez A, Fermín-Martínez CA, Márquez-Salinas A, Bahena-López JP.
- <https://doi.org/10.1101/2020.07.02.20145169>

Consult my complete research work at: <https://orcid.org/0000-0003-3093-937X>. Citations can be tracked at: https://scholar.google.com/citations?user=kS_jiQ8AAAAJ&hl=es&authuser=1

- 2020 ● **Clinical Characterization Of Data-Driven Diabetes Subgroups In Mexicans Using A Reproducible Machine Learning Approach.**
BMJ open diabetes research & care
• Bello-Chavolla OY, Bahena-López JP, Vargas-Vázquez A, Antonio-Villa NE, Márquez-Salinas A, Fermín-Martínez CA, Rojas R, Mehta R, Cruz-Bautista I, Hernández-Jiménez S, García-Ulloa AC, Almeda-Valdes P, Aguilar-Salinas CA; Metabolic Syndrome Study Group; Group of Study CAIPaDi.
• <https://doi.org/10.1136/bmjdrc-2020-001550>
- 2020 ● **Unequal Impact Of Structural Health Determinants And Comorbidity On COVID-19 Severity And Lethality In Older Mexican Adults: Considerations Beyond Chronological Aging.**
The journals of gerontology. Series A, Biological sciences and medical sciences
• Bello-Chavolla OY, González-Díaz A, Antonio-Villa NE, Fermín-Martínez CA, Márquez-Salinas A, Vargas-Vázquez A, Bahena-López JP, García-Peña C, Aguilar-Salinas CA, Gutiérrez-Robledo LM.
• <https://doi.org/10.1093/gerona/glaa163>
- 2020 ● **Predicting Mortality Due To SARS-CoV-2: A Mechanistic Score Relating Obesity And Diabetes To COVID-19 Outcomes In Mexico**
The Journal of Clinical Endocrinology and Metabolism
• Bello-Chavolla OY, Bahena-López JP, Antonio-Villa NE, Vargas-Vázquez A, González-Díaz A, Márquez-Salinas A, Fermín-Martínez CA, Naveja JJ, Aguilar-Salinas CA.
• <https://doi.org/10.1210/clinem/dgaa346>
- 2019 ● **Metabolic Score For Visceral Fat (METS-VF), A Novel Estimator Of Intra-Abdominal Fat Content And Cardio-Metabolic Health.**
Clinical Nutrition
• Bello-Chavolla OY, Antonio-Villa NE, Vargas-Vázquez A, Viveros-Ruiz T, Almeda-Valdes P, Gomez-Velasco D, Mehta R, Elias-López D, Cruz-Bautista I, Roldán-Valadez E, Martagón AJ, Aguilar-Salinas CA.
• <https://doi.org/10.1016/j.clnu.2019.07.012>
- 2019 ● **Pathophysiological Mechanisms Linking Type 2 Diabetes And Dementia: Review Of Evidence From Clinical, Translational And Epidemiological Research.**
Current Diabetes Reviews
• Bello-Chavolla OY, Antonio-Villa NE, Vargas-Vázquez A, Ávila-Funes JA, Aguilar-Salinas CA.
• <https://doi.org/10.2174/1573399815666190129155654>
- 2018 ● **METS-IR, A Novel Score To Evaluate Insulin Sensitivity, Is Predictive Of Visceral Adiposity And Incident Type 2 Diabetes**
European Journal of Endocrinology
• Bello-Chavolla OY, Almeda-Valdes P, Gomez-Velasco D, Viveros-Ruiz T, Cruz-Bautista I, Romo-Romo A, Sánchez-Lázaro D, Meza-Oviedo D, Vargas-Vázquez A, Campos OA, Sevilla-González MDR, Martagón AJ, Hernández LM, Mehta R, Caballeros-Barragán CR, Aguilar-Salinas CA.
• <https://doi.org/10.1530/eje-17-0883>

Editorial Work

Current
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2021

- **PLoS One**
Associate Editor
 - Associate Editor in the section of General Medicine

Current
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2020

- **BMC Endocrine Disorders**
Associate Editor
 - Associate Editor in the section Epidemiology of Endocrine Disorders

Current
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2021

- **Frontiers In Aging Neuroscience**
Topic Editor
 - Topic Editor: Modifiable Risk Factors of Accelerated Brain Aging and Dementia

2022
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2020

- **Journal Of The American Society Of Nephrology**
Editorial Fellow
 - Member of the 2020-2022 class of Editorial Fellows

Professional Associations

2021

- **New York Academy Of Sciences**
Member

2021

- **Endocrine Society**
Early Career Member

2021

- **American Society Of Nephrology**
Early Career Member

2021

- **European Society Of Endocrinology**
Early Career Member