

YUNUS A. KINKHABWALA, PhD

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EDUCATION

Cornell University *September 2015 – October 2021 – Ithaca, NY* MS, PhD, Applied Physics

Region XIII Teacher Certification *April 2009 – May 2010 – Austin, TX* Math/Physics
Teacher Certification

University of Illinois at Urbana-Champaign *September 2003 – May 2006 – Urbana, IL* BS,
Physics

WORK AND RESEARCH EXPERIENCE

Senior Data Scientist, PSE Healthy Energy *October 2021 – Present Oakland, CA*

- Led team of researchers from multiple organizations to develop metrics of non-energy impacts of decarbonization plans for use by multiple state agencies in California
- Developed expert witness testimony in partnership with community organizations for multiple utility rate cases and integrated resource plans around energy equity and affordability
- Generated first household-scale estimates of residential energy usage and bills to develop policies aimed at reducing energy bills through investments in home improvements
- Developed capacity expansion model incorporating public health damages and distributed resilience targets to optimize retirement of single peaker power plant in disadvantaged Wilmington neighborhood
- Designed and implemented geospatial optimization models of the allocation of energy resilience at community centers to prioritize vulnerable populations in the case of an outage

Research Assistant, Cornell University, Itai Cohen lab *August 2015 – October 2021 Ithaca, NY*

- Developed data-driven predictive models of complex systems based on statistical physics principles
- Implemented simulations of segregation and predator prey dynamics
- Generated accurate neighborhood scale predictions of changes in demographic compositions

Math/Science Teacher, International School of Dakar *September 2011 – June 2015 Dakar, Senegal*

- Co-founded Green Team of students and teachers aimed at improving environmental impacts in Senegal

Math/Physics Teacher, Eastside Memorial High School *September 2009 – June 2011 Austin, TX*

- Taught first cohort to meet minimum Texas standards in math and science in five years

Schools/Community Resource Volunteer, US Peace Corps *September 2006 – November 2008*
Magogeni, Mpumalanga Province, South Africa

- Organized HIV testing drives and outreach in rural South African village
- Led teacher training in modern curriculum at three public schools
- Initiated first library in village in a school classroom

SELECTED PUBLICATIONS AND REPORTS

- Murphy, Patrick M., **Yunus Kinkhabwala**, Bethany Kwoka, Yanelli Nunez, Annelise Dillon, Audrey Amezcua-Smith, and Elena Krieger. "Modeling and design of solar+ storage-powered community resilience hubs across California." Risk analysis (2024).
- Arjun Makhijani, PhD, **Yunus Kinkhabwala**, PhD, Jessie Jaeger, MPH, MCP, Kelsey Bilsback, PhD, Lee Ann Hill, MPH, Laurel Peltier, MBA, Boris Lukanov, PhD, Elena Krieger, PhD. Energy Affordability in Maryland. PSE Healthy Energy. 2023
- Arjun Makhijani, PhD, **Yunus Kinkhabwala**, PhD, Jessie Jaeger, MPH, MCP, Kelsey Bilsback, PhD, Lee Ann Hill, MPH, Laurel Peltier, MBA, Boris Lukanov, PhD, Elena Krieger, PhD. Energy Affordability in Maryland. PSE Healthy Energy. 2023
- **Yunus Kinkhabwala**, PhD, Jessie Jaeger, MS, Energy Cost Burdened: A Case for Utility Disconnection Protections in Virginia. PSE Healthy Energy. 2023
- Dr. **Yunus Kinkhabwala** and Rory McIlmoil. Direct Testimony of Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC. Biennial Integrated Resource Plans. State of North Carolina Utilities Commission. DOCKET NO. E-100, SUB 179. 2022.
- Boris Lukanov, PhD, Arjun Makhijani, PhD, Karan Shetty, M.ESM, **Yunus Kinkhabwala**, PhD, Audrey Smith, MPH, Elena Krieger, PhD. Pathways to Energy Affordability in Colorado. PSE Health Energy. 2022.
- Boris Barron, Chen, Yuchao, **Yunus A. Kinkhabwala**, Boris Barron, Matthew Hall, Tomás A. Arias, and Itai Cohen. "Small-area population forecasting in a segregated city using density-functional fluctuation theory." Journal of Computational Social Science (2024): 1-21.
- Yuchao Chen, **Yunus A. Kinkhabwala**, Boris Barron, Matthew Hall, Tomas A. Arias, Itai Cohen. 2020. "Forecasting the dynamics of segregated population distributions at the neighborhood scale using Density-Functional Fluctuation Theory", arXiv:2008.09663 (under review).
- J. Felipe Méndez-Valderrama, **Yunus A. Kinkhabwala**, Jeffrey Silver, Itai Cohen & T. A. Arias. 2018. Density-functional fluctuation theory of crowds. Nat Commun 9, 3538 (2018).