

Ayaz Hyder

Cunz Hall, 1841 Neil Ave., Room 380D, Columbus, OH, 43210

Website: The Hyder Lab

Research statement

Education and Training

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| 2013 | Research associate with Hla-Hla (Rosie) Thein in <i>Health Services Research</i> , Dalla Lana School of Public Health, University of Toronto |
| 2011 | Postdoctoral associate with Michelle Bell & Kathleen Belanger in <i>Environmental Epidemiology</i> , School of Public Health and School of Forestry and Environmental Studies, Yale University |
| 2012 | Ph.D. with Brian Leung and David Buckeridge in <i>Infectious Disease Modeling and Health Disparities</i> , Department of Biology, McGill University |
| 2005 | B.S. in Biology, McMaster University |

Ph.D. Dissertation

Title Validation and integration in spread models of influenza: Scientific insights and policy implications during influenza epidemics/pandemics

Employment

Current & Affiliations

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| 2015 – : | Assistant Professor, Division of Environmental Health Sciences, College of Public Health, The Ohio State University, Columbus, Ohio |
| 2015 – : | Core Faculty, Translational Data Analytics Institute, The Ohio State University |
| 2015 – : | Affiliated Faculty, Infectious Disease Institute, The Ohio State University |
| 2015 – : | Affiliated Faculty, Institute for Population Research, The Ohio State University |
| 2015 – : | Member, STEAM Factory, The Ohio State University |
| 2015 – 2022: | Affiliated Faculty, Initiative for Food and AgriCultural Transformation (InFACT), The Ohio State University |

Previous

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| 2015: | Lecturer, School of Environment, University of Toronto, Toronto, Ontario, Canada |
| 2006 – 2010: | Teaching assistant, Department of Biology, McGill University, Montreal, Quebec, Canada |

- 2008 – 2009: Statistician assistant to Michael Zappitelli, Montreal Children’s Hospital, Department of Pediatric Nephrology, Montreal, Quebec, Canada
- 2005 – 2005: Research assistant to Louise Pilote, Department of Epidemiology and Biostatistics, McGill University, Montreal, Quebec, Canada
- 2003 – 2005: Research assistant to Parminder Raina, McMaster University, Department of Clinical Epidemiology & Biostatistics, Hamilton, Ontario, Canada
- 2001 – 2002: Research assistant to Mark Loeb, McMaster University, Department of Clinical Epidemiology & Biostatistics, Hamilton, Ontario, Canada

Publications

Peer-reviewed journal articles

Published

- (1) **Hyder, A.**, A. Blatt, A.D. Hollander, C. Hoy, P.R. Huber, M.C. Lange, J.F. Quinn, C.M. Riggle, R. Sloan, and T.P. Tomich. 2022. “Design and Implementation of a Workshop for Evaluation of the Role of Power in Shaping and Solving Challenges in a Smart Foodshed.” Cited By 0, *Sustainability (Switzerland)* 14 (5). <https://doi.org/10.3390/su14052642>.
- (2) Kline, D., **Hyder, A.**, E. Liu, M. Rayo, S. Malloy, and E. Root. 2022. “A Bayesian spatio-temporal nowcasting model for public health decision-making and surveillance.” Cited By 2, *American Journal of Epidemiology*, <https://doi.org/10.1093/aje/kwac034>.
- (3) Li, Y., H.J. Miller, E.D. Root, **Hyder, A.**, and D. Liu. 2022. “Understanding the role of urban social and physical environment in opioid overdose events using found geospatial data.” Cited By 0, *Health and Place* 75. <https://doi.org/10.1016/j.healthplace.2022.102792>.
- (4) Beaulieu, E., C. DiGennaro, E. Stringfellow, A. Connolly, A. Hamilton, **Hyder, A.**, M. Cerdá, K.M. Keyes, and M.S. Jalali. 2021. “Economic Evaluation in Opioid Modeling: Systematic Review.” Cited By 7, *Value in Health* 24 (2): 158–173. <https://doi.org/10.1016/j.jval.2020.07.013>.
- (5) Cerdá, M., M.S. Jalali, A.D. Hamilton, C. Digennaro, **Hyder, A.**, J. Santaella-Tenorio, N. Kaur, C. Wang, and K.M. Keyes. 2021. “A Systematic Review of Simulation Models to Track and Address the Opioid Crisis.” Cited By 1, *Epidemiologic Reviews* 43 (1): 147–165. <https://doi.org/10.1093/epirev/mxab013>.
- (6) **Hyder, A.** and K.S. Barnett. 2021. “Low Birth Weight and Preterm Birth Among Arab-American Women in Ohio.” Cited By 0, *Maternal and Child Health Journal* 25 (4): 574–583. <https://doi.org/10.1007/s10995-020-03095-y>.
- (7) **Hyder, A.**, J. Lee, A. Dundon, L.T. Southerland, D. All, G. Hammond, and H.J. Miller. 2021. “Opioid Treatment Deserts: Concept development and application in a US Midwestern urban county.” Cited By 1, *PLoS ONE* 16 (5 May). <https://doi.org/10.1371/journal.pone.0250324>.
- (8) **Hyder, A.**, A. Trinh, P. Padmanabhan, J. Marschhausen, A. Wu, A. Evans, R. Iyer, and A. Jones. 2021. “COVID-19 Surveillance for Local Decision Making: An Academic, School District, and Public Health Collaboration.” Cited By 0, *Public Health Reports* 136 (4): 403–412. <https://doi.org/10.1177/00333549211018203>.

- (9) Aldridge, A.P., C. Barbosa, J.A. Barocas, J.L. Bush, J. Chhatwal, K.J. Harlow, **Hyder, A.**, B.P. Linas, K.E. McCollister, J.R. Morgan, S.M. Murphy, C. Savitzky, B.R. Schackman, E.E. Seiber, L. E Starbird, J. Villani, and G.A. Zarkin. 2020. “Health economic design for cost, cost-effectiveness and simulation analyses in the HEALing Communities Study.” Cited By 6, *Drug and Alcohol Dependence* 217. <https://doi.org/10.1016/j.drugalcdep.2020.108336>.
- (10) Hollander, A.D., C. Hoy, P.R. Huber, **Hyder, A.**, M.C. Lange, A. Latham, J.F. Quinn, C.M. Riggle, and T.P. Tomich. 2020. “Toward Smart Foodsheds: Using Stakeholder Engagement to Improve Informatics Frameworks for Regional Food Systems.” Cited By 2, *Annals of the American Association of Geographers* 110 (2): 535–546. <https://doi.org/10.1080/24694452.2019.1662764>.
- (11) **Hyder, A.** 2020. “Teaching systems science to public health professionals.” Cited By 0, *Public Health* 181:119–121. <https://doi.org/10.1016/j.puhe.2019.12.013>.
- (12) **Hyder, A.** and A.A. May. 2020. “Translational data analytics in exposure science and environmental health: A citizen science approach with high school students.” Cited By 4, *Environmental Health: A Global Access Science Source* 19 (1). <https://doi.org/10.1186/s12940-020-00627-5>.
- (13) Jensen, P.T., K. Koh, R.E. Cash, S.P. Ardoin, and **Hyder, A.** 2020. “Inpatient mortality in transition-aged youth with rheumatic disease: An analysis of the National Inpatient Sample.” Cited By 0, *Pediatric Rheumatology* 18 (1). <https://doi.org/10.1186/s12969-020-0416-4>.
- (14) Koh, K., M.L. Kaiser, G. Sweeney, K. Samadi, and **Hyder, A.** 2020. “Explaining racial inequality in food security in Columbus, Ohio: A blinder–oaxaca decomposition analysis.” Cited By 2, *International Journal of Environmental Research and Public Health* 17 (15): 1–15. <https://doi.org/10.3390/ijerph17155488>.
- (15) Li, Y., **Hyder, A.**, L.T. Southerland, G. Hammond, A. Porr, and H.J. Miller. 2020. “311 service requests as indicators of neighborhood distress and opioid use disorder.” Cited By 9, *Scientific Reports* 10 (1). <https://doi.org/10.1038/s41598-020-76685-z>.
- (16) Walsh, S.L., N. El-Bassel, R.D. Jackson, J.H. Samet, M. Aggarwal, A.P. Aldridge, T. Baker, et al. 2020. “The HEALing (Helping to End Addiction Long-term SM) Communities Study: Protocol for a cluster randomized trial at the community level to reduce opioid overdose deaths through implementation of an integrated set of evidence-based practices.” Cited By 16, *Drug and Alcohol Dependence* 217. <https://doi.org/10.1016/j.drugalcdep.2020.108335>.
- (17) Koh, K., R. Reno, and **Hyder, A.** 2019. “Examining disparities in food accessibility among households in Columbus, Ohio: an agent-based model.” Cited By 7, *Food Security* 11 (2): 317–331. <https://doi.org/10.1007/s12571-019-00900-7>.
- (18) **Hyder, A.** 2018. “Public funding for genomics and the return on investment: A public health perspective.” Cited By 1, *Perspectives in Biology and Medicine* 61 (4): 572–583. <https://doi.org/10.1353/pbm.2018.0066>.
- (19) Koh, K., R. Reno, and **Hyder, A.** 2018. “Designing an Agent-Based Model Using Group Model Building: Application to Food Insecurity Patterns in a U.S. Midwestern Metropolitan City.” Cited By 5, *Journal of Urban Health* 95 (2): 278–289. <https://doi.org/10.1007/s11524-018-0230-1>.
- (20) Reno, R., and **Hyder, A.** 2018. “The Evidence Base for Social Determinants of Health as Risk Factors for Infant Mortality: A Systematic Scoping Review.” Cited By 17, *Journal of health care for the poor and underserved* 29 (4): 1188–1208. <https://doi.org/10.1353/hpu.2018.0091>.
- (21) Hosseinichimeh, N., R. MacDonald, **Hyder, A.**, A. Ebrahimvandi, L. Porter, R. Reno, J. Maurer, D.L. Andersen, G. Richardson, J. Hawley, and D.F. Andersen. 2017. “Group Model Building Techniques for Rapid Elicitation of Parameter Values, Effect Sizes, and Data Sources.” Cited By 8, *System Dynamics Review* 33 (1): 71–84. <https://doi.org/10.1002/sdr.1575>.

- (22) Milwid, R., A. Steriu, J. Arino, J. Heffernan, **Hyder, A**, D. Schanzer, E. Gardner, M. Haworth-Brockman, H. Isfeld-Kiely, J.M. Langley, and S.M. Moghadas. 2016. “Toward standardizing a lexicon of infectious disease modeling terms.” Cited By 9, *Frontiers in Public Health* 4 (SEP). <https://doi.org/10.3389/FPUBH.2016.00213>.
- (23) **Hyder, A** and B. Leung. 2015. “Social deprivation and burden of influenza: Testing hypotheses and gaining insights from a simulation model for the spread of influenza.” Cited By 5, *Epidemics* 11:71–79. <https://doi.org/10.1016/j.epidem.2015.03.004>.
- (24) Qiao, Y., **Hyder, A**, S.J. Bae, W. Zarin, T.J. O’Neill, N.E. Marcon, L. Stein, and H.-H. Thein. 2015. “Surveillance in Patients with Barrett’s Esophagus for Early Detection of Esophageal Adenocarcinoma: A Systematic Review and Meta-Analysis.” Cited By 27, *Clinical and Translational Gastroenterology* 6. <https://doi.org/10.1038/ctg.2015.58>.
- (25) **Hyder, A**, H.J. Lee, K. Ebisu, P. Koutrakis, K. Belanger, and M.L. Bell. 2014. “Use of satellite- and monitor-based data.” Cited By 105, *Epidemiology* 25 (1): 58–67. <https://doi.org/10.1097/EDE.0000000000000027>.
- (26) **Hyder, A**, D.L. Buckeridge, and B. Leung. 2013. “Predictive Validation of an Influenza Spread Model.” Cited By 19, *PLoS ONE* 8 (6). <https://doi.org/10.1371/journal.pone.0065459>.
- (27) Alkandari, O., K.A. Eddington, **Hyder, A**, F. Gauvin, T. Ducruet, R. Gottesman, V. Phan, and M. Zappitelli. 2011. “Acute kidney injury is an independent risk factor for pediatric intensive care unit mortality, longer length of stay and prolonged mechanical ventilation in critically ill children: A two-center retrospective cohort study.” Cited By 218, *Critical Care* 15 (3). <https://doi.org/10.1186/cc10269>.
- (28) Zappitelli, M., B.S. Moffett, **Hyder, A**, and S.L. Goldstein. 2011. “Acute kidney injury in non-critically ill children treated with aminoglycoside antibiotics in a tertiary healthcare centre: A retrospective cohort study.” Cited By 108, *Nephrology Dialysis Transplantation* 26 (1): 144–150. <https://doi.org/10.1093/ndt/gfq375>.
- (29) Zappitelli, M., P.-L. Bernier, R.S. Saczkowski, C.I. Tchervenkov, R. Gottesman, A. Dancea, **Hyder, A**, and O. Alkandari. 2009. “A small post-operative rise in serum creatinine predicts acute kidney injury in children undergoing cardiac surgery.” Cited By 232, *Kidney International* 76 (8): 885–892. <https://doi.org/10.1038/ki.2009.270>.
- (30) **Hyder, A**, B. Leung, and Z. Miao. 2008. “Integrating data, biology, and decision models for invasive species management: Application to leafy spurge (*Euphorbia esula*).” Cited By 24, *Ecology and Society* 13 (2). <https://doi.org/10.5751/ES-02485-130212>.

Accepted for publication

- (1) **Hyder, A**. 2022. “Handbook of Global Urban Health, by Igor Vojnovic, Amber L. Pearson, Gershim Asiki, Geoff DeVerteuil, Adriana Allen (eds.)” *Journal of Urban Affairs*, <https://doi.org/10.1080/07352166.2022.2079361>.
- (2) **Hyder, A**, G Graffagnino, R Barbeau, L Dent, A Glover, A Jones, J McAdams, S Nawaz, G.M. Wontumi, and N Baryeh. 2022. “Addressing health equity goals for COVID-19 vaccination using integrated data and mapping tools: A collaboration between academia, public health, and healthcare systems in Columbus and Franklin County, Ohio.” *Journal of Public Health Management and Practice* Accepted.

- (3) **Hyder, A.**, M. Smith, S. Sealy-Jefferson, R. Hood, S. Chettri, A. Dundon, A. Underwood, D. Bassett, and A. Norris. 2022. "Community Based Systems Dynamics for Reproductive Health: A Case Study from Urban Ohio." *Progress in Community Health Partnerships: Research, Education, and Action*, <https://preprint.press.jhu.edu/pchp/preprints/community-based-systems-dynamics-reproductive-health-example-urban-ohio-usa>.

Submitted

- (1) Lowrey, J, A Chandrasekaran, A Headings, and A. **Hyder**. 2022. "Does fresh food improve health? An econometric analysis of a partnership model of care."

In-preparation

- (1) **Hyder, A.**, L. Frazier, F. Anagbonu, K. Moon, A. Trinh, and S. Nawaz. n.d. "Evaluation and lessons learned from the COVID-19 Analytics & Targeted Surveillance (CATS) System for School Districts: The Experience from Central Ohio."
- (2) **Hyder, A.**, H. Miller, L. Southerland, A. Trinh, K. Harlow, and G. Hammond. n.d. "Partnerships, development, and implementation of an opioid surveillance system in Franklin County, Ohio."
- (3) **Hyder, A.**, C Graffagnino, G French, J.A. Maloney, B DeJesus, K Cowan, J Iversen, and S Bennett. 2022. "Findings from real-time monitoring and evaluation of the VaxCash program in Columbus, Ohio."
- (4) **Hyder, A.**, R. Hightower, M. Smith, R. Hood, S. Chettri, A. Underwood, and A. Norris. 2022. "What policies may eliminate racial inequities in infant mortality and other outcomes in the reproductive health system? A participatory modeling study."

Peer-reviewed conference proceedings

- (1) Bajaj, G., U. Kursuncu, M. Gaur, U. Lokala, **Hyder, A.**, S. Parthasarathy, and A. Sheth. 2021. "Knowledge-driven Drug-use Named Entity Recognition with Distant Supervision." 18th World Congress of Medical / Health Informatics (MedInfo).
- (2) Smith?, R., B.Y. Lee, A. Moustakas, A. Zeigler, M. Prague, R. Santos, M. Chung, R. Gras, V. Forbes, S. Borg, T. Comans, Y. Ma, N. Punt, W. Jusko, L. Brotz, and **Hyder, A.** 2016. "Population modelling by examples ii." In *Proceedings of the Summer Computer Simulation Conference*, 1–8.

Peer-reviewed letter

- (1) Freisthler, B, **Hyder, A.**, K.E. Lancaster, E.M. Loudon, and A.M. Rinderle. 2022. "Response to "COVID-19 economic impact payments and opioid overdose deaths"." Cited By 0, *International Journal of Drug Policy*, <https://doi.org/10.1016/j.drugpo.2022.103713>.

Edited books

- (1) Thomson, R., H. Bisgin, C. Dancy, **Hyder, A.**, and M. Hussain. 2020. *Social, Cultural, and Behavioral Modeling: 13th International Conference, SBP-BRiMS 2020, Washington, DC, USA, October 18–21, 2020, Proceedings*. Vol. 12268. Springer Nature.
- (2) Thomson, R., H. Bisgin, C. Dancy, and **Hyder, A.** 2019. *Social, Cultural, and Behavioral Modeling: 12th International Conference, SBP-BRiMS 2019, Washington, DC, USA, July 9–12, 2019, Proceedings*. Vol. 11549. Springer.

- (3) Thomson, R., C. Dancy, **Hyder, A.**, and H. Bisgin. 2018. *Social, Cultural, and Behavioral Modeling: 11th International Conference, SBP-BRIMS 2018, Washington, DC, USA, July 10-13, 2018, Proceedings*. Vol. 10899. Springer.

Reports

- (1) Anagbonu, F., L. Frazier, A. Trinh, and A. **Hyder**. 2022. *Research Memo on Reasons for continued masking in schools*. Prepared upon request from Franklin County Public Health.
- (2) **Hyder, A.** 2022. *Reducing Infant Mortality in Ohio: Individuals, Communities, Systems, and Interventions: All Babies Matter Simulation model for Infant Mortality or "ABM-Sim4IM"*. https://procure.ohio.gov/ProcOppForm/DADOH-18-EP-001_ODH%20Final%20Report%2006-2017.zip.
- (3) Thein, H. H., M. Gojovic, **Hyder, A.**, J. Beca, and C. Earle. 2014. *Canadian Partnership Against Cancer's Cancer Risk Management Model Evaluation Case Study: Cost- Effectiveness of Expanded Prevention and Treatment Programs for Cervical Cancer*.

Presentations

Invited talks

- (1) **Hyder, A.** 2021. "Frontiers in evidence-based policy making: COVID-19 and Schools." Presented at Workshop on Evidence-Based Policymaking for Applied Economists by Agricultural & Applied Economics Association. Online.
- (2) **Hyder, A.** 2020. "Enhancing Equity in Infectious Disease: Lessons from the Bench and Between Disciplines." Presented at IDI Viruses & Emerging Pathogens Weekly Seminar. Online.
- (3) **Hyder, A.** 2020. "Integrating Public Health and Social Work through Translational Data Analytics: Examples from Infant Mortality Food Insecurity." Presented at College of Social Work Research Day. College of Social Work, The Ohio State University, Columbus, Ohio, United States.
- (4) **Hyder, A.** 2020. "Models, Data, Sensing, and "Smart" to Solve Public Health Crisis (COVID-19 and Opioids)." Presented at Networking Technology / Systems (NeTS) First Call to Arms Community Workshop. Online.
- (5) **Hyder, A.** 2020. "Models, Data, Sensing, and "Smart" to Solve Public Health Crisis (COVID-19)." Presented at Departmental Colloquium, Mathematics, Arizona State University. Online.
- (6) **Hyder, A.**, H.J. Lee, K. Ebisu, P. Koutrakis, M.L. Bell, and K. Belanger. 2020. "Does the Data Source of Exposure Assessment (Land-Based Monitors vs Satellite) Modify the Effect of PM2.5 Exposure on Birth Outcomes?" Presented at Annual International Society of Environmental Epidemiology Conference. Columbia, South Carolina, United States.
- (7) **Hyder, A.**, B. Leung, A. Verma, and D. Buckeridge. 2020. "Prediction and validation of influenza spread models." Presented at MITACS Annual Conference, University of New Brunswick, Fredericton, New Brunswick, Canada.
- (8) **Hyder, A.** 2019. "Examining disparities in food accessibility among households in Columbus Ohio: An agent-based model." Presented at Nutrition / Obesity, Concurrent Session, Society for Epidemiologic Research, June 18-21, 2016, Minneapolis, Minnesota, United States.

- (9) **Hyder, A.** and A. May. 2018. “Smart Sensors for Smart Cities: Two Examples of Multi-Sector Collaborations in Central Ohio.” Presented at SuccessBound Central Ohio Conference. Columbus, Ohio, United States.
- (10) **Hyder, A.** 2017. “Agent-based modeling: Theory and Application.” Presented at Research Methods Festival, The Ohio State University, Columbus, Ohio, United States.
- (11) **Hyder, A.** 2017. “Public Health + Cyber-Physical Systems: Examples from Pregnancy, Food Insecurity, and Opioid Epidemic.” Presented at Panel on Challenges / Opportunities for Bringing Smart Services to Underserved Urban Communities. Cyber-Physical Systems Principal Investigators’ Meeting, National Science Foundation, Washington D.C., United States.
- (12) **Hyder, A.,** R. Machiraju, and A. Arora. 2017. “Putting the Smarts in Smart Columbus: Data Ecosystems for Smart and Healthy Communities.” Presented at Midwest Big Data Hub All-Hands Meeting. Omaha, Nebraska, United States.
- (13) **Hyder, A.** 2016. “Complex Systems Models for Environmental Epidemiology: Application to Childhood Asthma.” Presented at Environmental Health Seminar Series, Cincinnati Children’s Hospital Medical Center. Cincinnati, Ohio, United States.
- (14) **Hyder, A.** 2016. “Complex Systems Models in Epidemiology: Past, Present and Future.” Presented at OSU-Center for Excellence in Regulatory Tobacco Science Seminar Series. Columbus, Ohio, United States.
- (15) **Hyder, A.** 2016. “Integrating Public Health, Healthcare and Policy using Translational Data Analytics: Examples from Infant Mortality, Food Insecurity and Pediatric Asthma.” Presented at Glen Colloquium Series. Glen College of Public Affairs, The Ohio State University, Columbus, Ohio, United States.
- (16) **Hyder, A.** 2016. “Transforming the Food Environment for Better Health: A Systems Approach (using Translational Data Analytics).” IC-FOODS Conference. Davis, California, United States.
- (17) **Hyder, A.** 2015. “Complex Systems Models for Better Decisions and Better Health: Examples from Influenza and Population Health.” Presented at Disease Ecology / Computer Modeling Laboratory Seminar Series, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, Ohio, United States.
- (18) **Hyder, A.** 2015. “Complex Systems Models for Better Decisions and Better Health: Examples from Influenza, Cancer and Asthma.” Presented at Data Mining Research Lab Seminar Series, Department of Computer Science / Engineering, The Ohio State University, Columbus, Ohio, United States.
- (19) **Hyder, A.** 2014. “A Caution on ”Big” Data and Prediction in Epidemiology and Public Health Decision-Making.” Presented at Big Data / Health Policy Workshop, Fields Institute, Toronto, Ontario, Canada.
- (20) **Hyder, A.** and B. Leung. 2012. “Integrating Predictors of Health Disparities with a Complex Model of Influenza Spread.” Presented at Dynamic of Preparedness: A Public Health Systems Conference. MIDAS National Center of Excellence. University of Pittsburgh, United States.
- (21) **Hyder, A.,** M. Jeanmougin, and B. Leung. 2011. “The role of scale and heterogeneity on disease spread among vulnerable populations during an epidemic.” Presented at Center for Disease Modeling Group Meeting. York University, Toronto, Ontario, Canada.

- (22) **Hyder, A.**, M. Jeanmougin, and B. Leung. 2011. “The role of scale and heterogeneity on disease spread among vulnerable populations during an epidemic.” Presented at Epistemology of Modeling / Simulation. MIDAS National Center of Excellence. University of Pittsburgh, United States.

Poster presentations

- (1) **Hyder, A.** 2019. “Public funding for genomics and the return on investment: A public health perspective.” Presented at Society for Epidemiologic Research, June 18-21, 2016, Minneapolis, Minnesota, United States.
- (2) **Hyder, A.**, J. Lee, A. Dundon, L.T. Southerland, D. All, G. Hammond, and H.J. Miller. 2019. “Recovery Deserts: Identifying neighborhoods underserved by opioid treatment and recovery services.” Poster presentation at Society for Epidemiologic Research, June 18-21, 2016, Minneapolis, Minnesota, United States.
- (3) **Hyder, A.**, T. H-H(Rosie), and M. Urquia. 2016. “Effect of residential mobility and immigrant status on birth outcomes: A retrospective study of pregnant women in Ontario from 2000-2012.” Presented at Society for Epidemiological Research / Society for Perinatal Epidemiological Research, June 21-22, 2016, Miami, Florida, United States.
- (4) **Hyder, A.**, H.J. Lee, K. Ebisu, P. Koutrakis, M.L. Bell, and K. Belanger. 2016. “Integrating air pollution exposure in a mechanistic agent-based model of asthma: Model development and application to childhood asthma outcomes.” Presented at International Society for Epidemiological Research. Rome, Italy.
- (5) **Hyder, A.**, N. Marcon, L. Stein, T. Godfrey, and H.H. Thein. 2015. “Cost-effectiveness of sponge-based surveillance with genetic testing for early diagnosis of esophageal adenocarcinoma.” Presented at OICR/CCO Health Services Research Program’s 7th Annual Meeting, Toronto, Ontario, Canada.
- (6) **Hyder, A.**, L. Stein, and H.H. Thein. 2015. “Development and validation of a microsimulation model to evaluate the cost-effectiveness of innovative screening and surveillance for early detection of esophageal adenocarcinoma.” Presented at Society for Medical Decision Making North America Meeting, Miami, Florida, United States.

Awards and Recognition

Grants and contracts

Federal grants

2021 – 2026, <i>NSF, AI Institute</i>	\$19,999,998
ICICLE: Intelligent CyberInfrastructure with Computational Learning in the Environment	
PI: DK Panda (The Ohio State University)	
Role: Senior Key Personnel	
2019 – 2023, <i>NIH/NIDA/HEaling Community Study</i>	\$62,397,575
Optimizing HEALing in Ohio (OHIO)	
PI: Rebecca Jackson (The Ohio State University)	
Role: Senior Key Personnel	

- 2021 – 2023, *Center for Disease Control and Prevention* \$15,000,000
 Community Health Workers for COVID Response and Resilient Communities
 PI: Ohio Department of Health
 Role: PI of the Component C Innovative Demonstration Project
- 2021 – 2023, *Patient Centered Outcomes Research Institute, PCORI* \$200,000
 Integrating PCOR into American Muslim Institutions for Informed COVID-19 Vaccine Decision-Making
 PI: **Ayaz Hyder** (The Ohio State University)
 Role: PI
- 2021 – 2022, *NSF, Convergence Accelerator Track F (2137806)* \$749,997
 Actionable Sensemaking Tools for Curating and Authenticating Information in the Presence of Misinformation during Crises
 PI: Srinivasan Parthasarathy (The Ohio State University)
 Role: Co-PI
- 2018 – 2022, *NSF/Smart & Connected Communities (1737573)* \$666,496
 Developing an Informational Infrastructure for Building Smart Regional Foodsheds
 PI: Tom Tomich (University of California, Davis)
 Role: Co-PI
- 2018 – 2021, *NSF, BD Spokes-Big Data Regional Innovation Spokes (1761969)* \$651,000
 Big Data Hub: Spoke: Community-Driven Data Engineering for Opioid and Substance Abuse in the Rural Midwest
 PI: Raghu Machiraju (The Ohio State University)
 Role: Co-PI
- 2016 – 2019, *NSF Div Chem, Bioeng, Environ, & Trnsp (1645226)* \$99,613
 EAGER: Incorporating Citizen Science into Real-Time Sensor-Based Estimates of Traffic-Related Air Pollution Exposure
 PI: Andrew May (The Ohio State University)
 Role: Co-PI
- 2016 – 2018, *NIH, NICHD (Sub-project of P2CHD058484)* \$53,795
 Effect of lifetime intergenerational exposures to environmental toxicants and socio-demographic factors on prenatal and cognitive outcomes in children
 PI: **Ayaz Hyder** (The Ohio State University)
 Role: PI

Foundation grants

- 2018 – 2021, *Anonymous (Foundation)* \$5,091,714
 OPEN: The Ohio Policy Evaluation Network
 PI: Allison Norris (The Ohio State University) and Danielle Bessett (University of Cincinnati)
 Role: PI of the sub-project on infant mortality

State or Local grants and contracts

2020 – 2022, <i>Centers for Disease Control and Prevention</i> Franklin County Overdose Data to Action PI: Kristin Harlow (The Ohio State University) Role: Co-PI	\$340,000
2021 – 2022, <i>Franklin County Public Health</i> COVID-19 Analytics and Targeted Surveillance System for Schools PI: Ayaz Hyder (The Ohio State University) Role: PI	\$161,901
2020 – 2021, <i>Ohio Department of Health</i> State of Ohio's COVID-19 recovery response management activities PI: Eric Seiber (The Ohio State University) Role: Co-I	\$801,378
2020 – 2021, <i>Educational Service Center of Central Ohio</i> COVID-19 Analytics and Targeted Surveillance System for Schools PI: Ayaz Hyder (The Ohio State University) Role: PI	\$202,769
2019 – 2020, <i>Centers for Disease Control and Prevention</i> Franklin County Overdose Data to Action PI: Ayaz Hyder (The Ohio State University) Role: PI	\$177,564
2019 – 2020, <i>Dublin City Schools</i> Citizen science for Smart Cities: application to environmental health sensors and high school STEM education in Dublin, Ohio PI: Ayaz Hyder (The Ohio State University) Role: PI	\$13,702
2016 – 2017, <i>Government Resource Center, State of Ohio</i> Systems Modeling of Infant Mortality in Ohio, Infant Mortality Research Partnership PI: Joshua Hawley (The Ohio State University) Role: Co-PI	\$541,833

Seed grants (internal)

2021 – 2022, <i>Office of Research, The Ohio State University, Seed Grant</i> Rapid Prototyping of Computational Workflows for COVID-19 Pandemic Response and Recovery PI: Ayaz Hyder (The Ohio State University) Role: PI	\$20,000
2020 – 2022, <i>InFACT Seed Grant, The Ohio State University</i> Cultivating Responsibility: An Ecosystems Approach to Understanding the Role of Diet, Family,	\$34,767

Community, Policy , and Cultural Issues in Land-Grant University Reparation Efforts with Native American Tribes

PI: Stephen Gavazzi (The Ohio State University)

Role: Co-PI

2018 – 2019, *Opioid Innovation Fund, The Ohio State University* \$96,762

Franklin County Opioid Crisis Activity Levels (FOCAL) Map

PI:Harvey Miller (The Ohio State University)

Role: Co-PI

2016 – 2017, *Initiative for Food and AgriCultural Transformation Seed Grant* \$31,000

Transforming the Food Environment for Better Health: A Systems Approach

PI: **Ayaz Hyder** (The Ohio State University)

Role: PI

Teaching & Mentoring

Courses taught

- Current Issue in Environmental Health (3000 level course)

New courses developed

- Public Health Data Analytics I (5000 level course)
- Public Health Data Analytics II (7000 level course)
- Environmental Epidemiology (7000 level course)

Student advising

Ohio State University, College of Public Health

Postdoctoral

- 2021 – : Yogita Karale
- 2019 – 2020: Mikaela Smith
- 2016 – 2017: Rebecca Reno (current: Postdoctoral fellow, School of Public Health, University of California, Berkley)
- 2016 – 2018: Peter Koh (current: Assistant Professor, Tenure Track, University of Hong Kong)

Doctoral

- 2021 – Present : Balaji Ramesh, Co-advisor
- 2017 – 2017: Tyler Gorham, Doctoral committee member (current: Data analyst, Nationwide Children's Hospital)

Masters

- 2017 – 2018: Paul Jensen, MPH Clinical Translational Science, Academic advisor
- 2017-2018 Willa DN Skeehan, MPH Epidemiology, Academic advisor
- Lottie Sinkula, MSc Epidemiology, Academic advisor
- Christopher Eisner, MSc Epidemiology, Academic advisor

Undergraduate

- 2016 – 2016: Ayesh Butt, Research Assistant
- 2017 – 2017: Zineb Habroune, Undergraduate Volunteer
- 2017 – 2019: Jordan Amann, Undergraduate Volunteer
- 2017 – 2019: Ashley Dundon, Research Assistant
- 2019 – 2020: Faraz Shaikh, Undergraduate Volunteer
- 2020 – 2020: Sana Lalani , Research Assistant
- 2020 – 2020: Ruth Plante, Research Assistant
- 2021 – 2021: Yousef Alish, Research Assistant
- 2020 – 2021: Enaho Liu, Research Assistant
- 2020 – 2021: Pranav Padamanabhan, Research Assistant
- 2020 – 2020: Eman Eltobgy, Research Assistant
- 2020 – Present: Net Zhang, Research Assistant
- 2021 – Present: Ramy El-Assly, Research Assistant
- 2021 – Present: Philip Oteng, Research Assistant
- 2021 – Present: Kexin Cui, Research Assistant

Ohio State University, Other

- 2019 – 2022: Yuchen Li, Doctoral committee member, Department of Geography, College of Arts and Sciences
- 2019 – 2021: John Lowrey, Doctoral committee member, Department of Operations and Business Analytics, College of Business (current: Assistant Professor, Tenure Track, Northeastern University)

Other

- 2019 – 2021: Omar Tahtamooni, Doctoral committee member, Environmental Health, University of Pittsburgh

Service

Professional

Journal reviewer

New England Journal of Medicine, Science, Journal of Drug and Alcohol Dependence, Injury Prevention, Journal of Public Health Management and Practice, American Journal of Preventive Medicine, International Journal of Environmental Research and Public Health, Environmental Health Perspectives, Science of the Total Environment, Annals of Internal Medicine, PLoS One, Journal of Public Health Management & Practice, Computational and Mathematical Organization Theory, Theoretical Biology and Medical Modeling, Oikos, Ecology and Society, Obesity, Epidemiology, Systems Science

Review panel

2022	Centers for Disease Control and Prevention, Special Emphasis Panel (SEP) for CK22-008: Building Mathematical Modeling Workforce Capacity to Support Infectious Disease and Healthcare Research
2020	National Science Foundation, Food- and agriculture-focused proposal review panel for the Smart and Connected Communities (S&CC) program (<i>Invited but declined</i>)
2019	National Science Foundation, Smart and Connected Communities, Planning Grants Review Panel

Membership in professional societies

2015 – Present	Society for Epidemiological Research (SER)
2015 – 2017	International Society for Environmental Epidemiology (ISEE)
2016 – 2018	Society for Pediatric and Perinatal Epidemiologic Research (SPER)
2013 – 2015	Society for Medical Decision Making

On-campus

University

2019	Translational Data Analytics Institute Faculty Director Search Committee
2019	Research and Creative Expression Strategic Planning Committee
2018	OSU Smart Campus Steering Committee

College

2017 – 2019	Bachelor's of Science in Public Health Committee
2016 – 2017	Research Day Committee

Student life

- 2022 – Present Faculty Advisor to Muslim Student Association
- 2019 – Present Faculty Advisor to Buckeyes for Harm Reduction
- 2019 – 2020 Faculty Advisor to Palestinian Women’s Association

Off-campus

- 2019 – 2020 Chair of the MORPC Air Quality Sensor Network subgroup, Mid-Ohio Regional Planning Commission.
- 2017 – 2018 Member of Smart Columbus Technical Working Group on Data Use Cases.
- 2018 Advisor to Committee and Steering Committee for Health Policy Institute of Ohio project on Social Determinants of Health for Infant Mortality.
- 2017 Advisor to Committee on State Health Improvement Plan: Maternal and Child Health Working Group.
- 2019 – 2022 Advisor to The Supporting Ohioans throughout Addiction and Recovery (SOAR) Initiative (developers of the SOAR App for Overdose Surge and Deadly Batch Alerts) on data curation, substance use data, GIS and technology integration.

COVID-19 related service

- 2021 – present Developed and implemented the Equity Mapping Tool, which is used by local health departments and healthcare systems for identifying potential pop-up/mobile COVID-19 vaccine sites.
- 2020 – present Advised, developed, and presented COVID-19 data, mitigation strategies and surveillance strategies for multiple Central Ohio school districts.
- 2020 – present Participated in COVID-19 Medical Advisory Board (for Upper Arlington City School District, Hilliard City School District, Dublin City School District).
- 2020 – 2021 Advised Ohio COVID-19 Minority Health Task Force on data curation, analysis, and data interpretation.
- 2020 – present Advisor to several Ohio mosques and cultural centers on pandemic preparedness and mitigation strategies.
- 2020 Developed simulation models for Ohio Department of Health on COVID-19 pandemic preparedness and recovery efforts as part of the OSU COVID-19 Modeling Team.
- 2020 Assisted Columbus Public Health and Franklin County Public Health with COVID-19 simulation modeling to answer “what if?” questions about school re-opening in 2020.
- 2020 Assembled the Wellbeing in the Time of Coronavirus Toolkit ([link](#)). As of May 8, 2020, 26,000 were reached via social media list serves and it was viewed 5,607 times on the Family and Youth Institute (FYI) website.