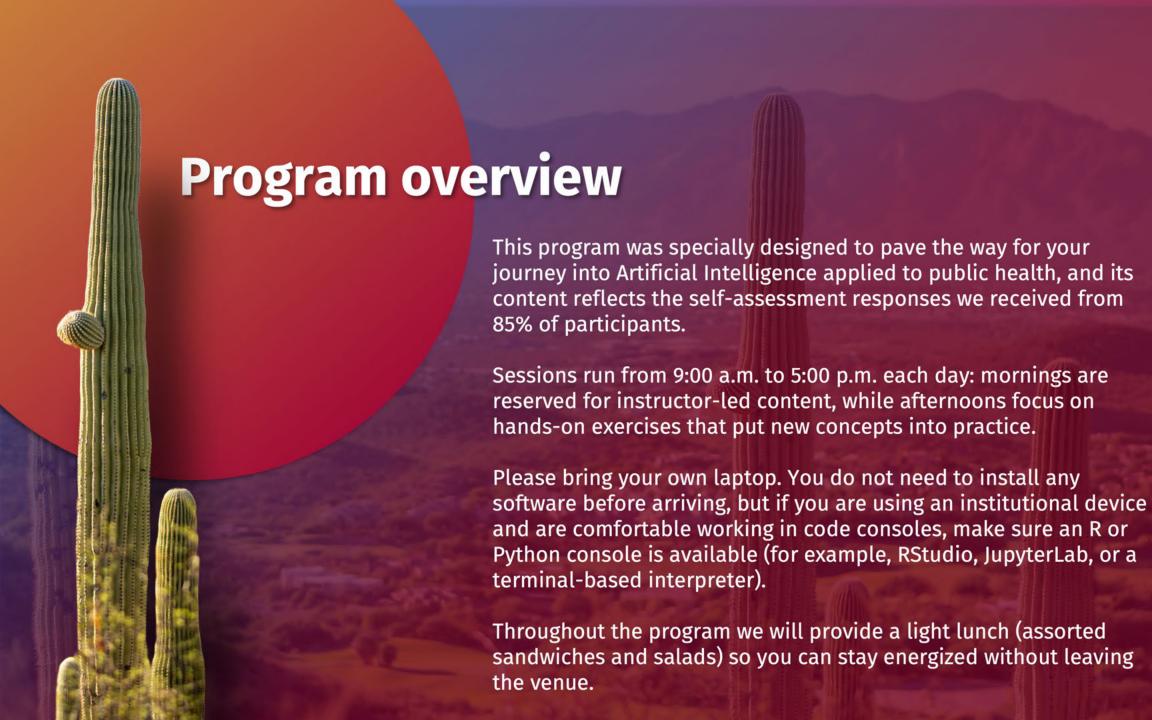# 1st PUBLIC HEALTH & AI SUMMER SCHOOL

Health Sciences Innovation Building (Room 642)
The University of Arizona • Tucson, 9 – 12 June 2025

Hosted by the Mel & Enid Zuckerman College of Public Health (MEZCOPH) in partnership with the Data Science Institute (DSI)

How to use this guide
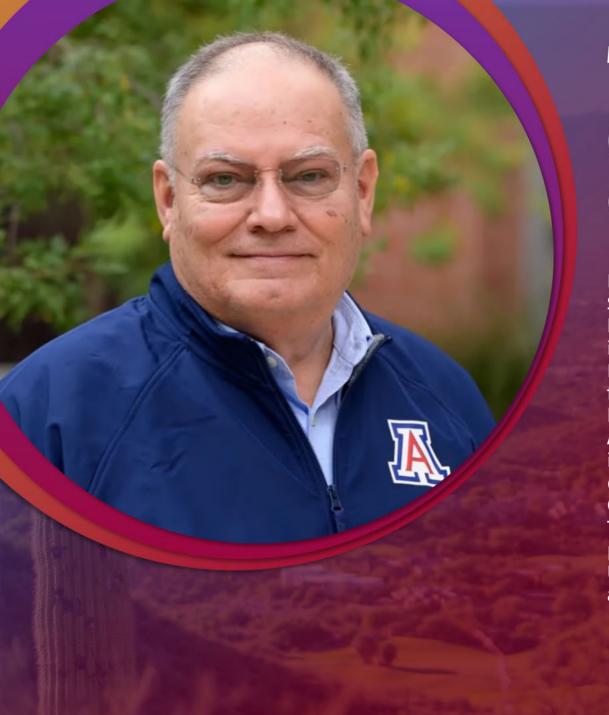
This digital booklet offers at-a-glance information for all participants:

1. Program overview

2. Daily agenda

3. Meet your instructor

4. Key contacts and Wi-Fi details

Keep it with you throughout the workshop for quick reference.

Program overview

This program was specially designed to pave the way for your journey into Artificial Intelligence applied to public health, and its content reflects the self-assessment responses we received from 85% of participants.

Sessions run from 9:00 a.m. to 5:00 p.m. each day: mornings are reserved for instructor-led content, while afternoons focus on hands-on exercises that put new concepts into practice.

Please bring your own laptop. You do not need to install any software before arriving, but if you are using an institutional device and are comfortable working in code consoles, make sure an R or Python console is available (for example, RStudio, JupyterLab, or a terminal-based interpreter).

Throughout the program we will provide a light lunch (assorted sandwiches and salads) so you can stay energized without leaving the venue.

AGENDA

Agenda June 9th

Time	Session	Speakers
9:00 – 9:30	Welcome remarks & Summer school overview	Dean Iman Hakim Nirav Merchant Onicio B Leal Neto
9:30 – 10:30	Digital Public Health & Digital Epidemiology	Onicio B Leal Neto
10:30 – 11:00	Break	
11:00 – 12:30	What is AI? Fundamentals for Public Health	Enrique Noriega
12:30 – 1:30	Lunch	
1:30 – 4:30	AI Maker Space I: Building Public Health AI agents	Onicio B Leal Neto

The agenda may be subject to changes and updates without prior notice.

Agenda June 10th

Time	Session	Speakers
9:00 – 9:45	Data Analysis and Management Skills for AI	Nirav Merchant
9:45 – 10:45	Panel: Future-ready Public Health - AI-powered modernization	Theresa Cullen Susan Robinson Nirav Merchant
10:45 – 11:15	Break	
11:15 – 12:15	Introduction to Key Data Concepts and Technologies (Non-Coding Focus)	Carlos Lizarrága
12:15 – 1:00	Creating reproducible analysis workflows (Lite-Coding focus)	Michele Cosi
1:00 – 1:45	Lunch	
1:45 – 3:30	Geospatial Analysis and AI in Public Health	Tyson Swetnam
3:30 – 5:00	AI Maker Space II: Prompt engineering for Public Health matters	Tyson Swetnam

The agenda may be subject to changes and updates without prior notice.

Agenda June 11th

Time	Session	Speakers
9:00 – 9:45	Ethical and Legal considerations of AI	Tyson Swetnam
9:45 – 10:30	AI in patient care and digital health cohorts	Marvin Slepian
10:30 – 10:45	Break	
10:45 – 12:00	AI Transparency, accountability, bias and discrimination	Tyson Swetnam
12:00 – 1:00	Lunch	
1:00 – 2:00	Promoting Health Equity with AI	Onicio B Leal Neto
2:00 – 3:00	Evaluating AI tools	Enrique Noriega
3:30 – 5:00	AI Maker Space III: Standardization of multi-modal datasets	Nirav Merchant

The agenda may be subject to changes and updates without prior notice.

Agenda June 12th

Time	Session	Speakers
9:00 – 9:45	AI-driven public health preparedness	Sameer Halai
9:45 – 10:30	Implementing a roadmap for AI adoption	Nirav Merchant
10:30 – 11:00	Break	
11:00 – 12:00	Collaborating with Universities and access to NSF AI computational resources	Michele Cosi
12:00 – 1:15	Lunch	
1:15 – 2:15	Digital biomarkers applications in Public Health	Shravan Aras
2:15 – 4:30	AI Maker Space IV: Experience showcase	Onicio B Leal Neto
4:30 – 5:00	Wrap up and closing remarks	

The agenda may be subject to changes and updates without prior notice.

Meet your instructor

Carlos Lizárraga

Computation and Data Science Educator

Dr. Carlos Lizárraga is an Educator in Computational and Data Science at the University of Arizona Data Science Institute where his advisory and training activities are backed by his proficiency in scientific computing and information technologies. Dr. Lizárraga is an applied research scientist and retired Professor from the Physics Department at the University of Sonora, where he taught a Computational Physics Course using Python for Data Analysis and Numerical Computing. He actively engaged in the implementation of the Computer Science program, the development of initial High-Performance and High-Availability Clusters for academic activities support on Information Technologies skills development programs, and greatly participated in the Climate Change Research Program at Universidad Nacional Autónoma de México continuous outreach activities.

Enrique Noriega

Computing Sciences Researcher IV

Dr. Enrique Noriega's research focuses on applying machine reading methods to large collections of documents to help scientists search and discover novel information relevant to their own research. With over seven years of experience in academic research, Enrique is a passionate and innovative Research Scientist with the Data Science Institute at the University of Arizona, from which he received both his Ph.D. and M.S. degrees.

His primary areas of expertise are information extraction and information retrieval, using state-of-the-art machine learning methods, such as transformer architectures, language models, and reinforcement learning. Through his research and work with deep learning models, his goal is to advance the understanding and analysis of biomedical texts and data, and to contribute to the improvement of human health and well-being.

Marvin Slepian

Regents Professor and Associate Department Head, Clinical & Industrial Affairs, Biomedical Engineering
Director, Arizona Center for Accelerated Biomedical Innovation
Regents Professor of Materials Science and Engineering

Marvin J. Slepian, MD, is Regents' Professor of Medicine and Biomedical Engineering (Associate Department Head), with professorships in Medical Imaging, Materials Sciences and Engineering, and Chemical and Environmental Engineering and McGuire Scholar in the Eller College of Management, at University of Arizona. Dr. Slepian is founder and director of the Arizona Center for Accelerated Biomedical Innovation (ACABI) – a "creativity engine," focused on novel solution development for unmet medical needs. Dr. Slepian attended Princeton (AB Biochemical Sciences and Science in Human Affairs '77) and received his MD from University of Cincinnati College of Medicine ('81 AOA). He completed his residency in Internal Medicine at New York University–Bellevue Hospital, where he served as Chief Resident in Medicine; clinical and research fellowships in Cardiology at Johns Hopkins University School of Medicine; and clinical and research fellowships in Interventional Cardiology and a research fellowship in Artificial Organs at the Cleveland Clinic. In addition, Dr Slepian received post-doctoral training in Chemical Engineering and Polymer Chemistry at MIT, and Business and Management training at Harvard Business School.

Michele Cosi

Research Data Scientist

Michele is a Plant Scientist by training and a Research Data Scientist by trade. His work as a plant scientist revolves around the bioinformatics and genomics aspects of the field with contributions such as the assemblies of the Oryza longistaminata (red rice) and Oryza glaberrima (Africa rice) genomes. Incorporating data science aspects in his research, Michele aided the development of scalable workflow systems capable of processing the large volumes of high-throughput phenotyping data originating from the world's largest scanalyzer by leveraging CyVerse and the UA High-Performance Computing systems. Michele is a strong believer in Open Science, educating researchers in data science best practices, FAIR and CARE principles, containerization, and cloud native technologies. His experience has seen him lead scientific workshops such as Foundational Open Science Skills (FOSS), Container and Cloud Native Camp, and international workshops such as CompBio Asia 2022 and 2023 (Thailand and Singapore), and the 6th Uppsala Transposon Symposium (Sweden).

Onicio B Leal Neto

Assistant Research Professor

Onicio B. Leal-Neto is biomedical scientist, holds a master degree and PhD in Public Health and Epidemiology. He is the leader of Global Flu View at Global Health Institute and Assistant Research Professor at the Department of Epidemiology, University of Arizona. Previously, he was senior researcher at the Department of Computer Science, ETH Zürich, Switzerland. He was also consultant for digital innovations at Ending Pandemics and Digital Health Expert at Singularity University. Leal-Neto's research focuses on public health innovation and the application of technologies in managing epidemics and pandemics. He integrates crowdsourcing, wearables, data science, and machine learning in his work, with a global reach that includes countries like Malawi, Kenya, and Ivory Coast. His proficiency in health technologies has been sought after by prominent organizations such as UNICEF, the Pan American Health Organization, the Inter-American Development Bank, and various governments. In addition to his academic and consulting roles, Leal-Neto is also an entrepreneur. He founded the digital epidemiology startup Epitrack, which successfully sold in 2021. His research topics are: Digital Epidemiology, Digital Public Health, AI in Public Health, Digital Contact Tracing, Wearables Technologies, Machine Learning and Health Analytics.

Shravan Aras

Assistant Director for Sensor Analysis and Smart Health Platforms
Co-Founder Opensci LLC & Amahealth LLC

Shravan holds a Ph.D in Computer Science from University of Arizona in 2018 and a Bachelors in Technology in Computer Engineering from College of Engineering Pune in 2012. I have worked on wide array of technologies from pico-satellites to predictive analysis for cardiac conditions across both academia and industry.

His research areas span across energy optimization for sensors, clinical imaging using machine learning techniques, graded authentication based on biometrics and biomedical algorithms for cardiovascular systems. I am a big proponent of the Low Code - No Code initiative, giving clinicians, and non-technical personnel the tools to develop sensor-based applications for distributed clinical data collection. In the past I have also worked on and managed teams for Pico-Satellite projects, and several nationwide mobile applications including HIPAA compliant clinical applications. My several years of experience in startups along with his academic background has prepared me to balance various commercialization aspects along with research goals.

Sameer Halai

CEO of Wehealth

Sameer is an entrepreneur who enjoys solving wicked hard problems in low-cost and scalable ways. He has co-founded several VC-backed companies, taking them from zero-to-one and scaling to profitability and exit. He has hands-on skills in product development, design, sales, marketing, research & engineering and has built consumer products used by hundreds of millions of users as well as high scale enterprise solutions that solve big business problems. He also worked in highly creative incubation and research environments. His domains include public health, finance, energy, social computing, robotics, and embedded systems. He is also into mountaineering and photography.

Theresa Cullen

Pima County Public Health Director

Dr. Cullen has a long medical and public health career beginning as a family practice physician for the Indian Health Service in San Carlos, Arizona, and subsequently at San Xavier and Sells, Arizona, where she eventually became the Clinical Director. She then became the senior informatics consultant for Indian Health Service for six years; during that time, she was also appointed for one year as the Acting Director for the National Office of Planning and Evaluation for the Indian Health Service in Washington. She was subsequently chosen to be the Chief Information Officer in the Office of Information Technology. After retirement from U.S. Public Health Service, Dr. Cullen became the Chief Medical Information Officer and Director of Health Informatics for the Veterans Health Administration, including a one-year period as the Acting Deputy Director for the DoD/VA Integrated Electronic Health Record Initiative. In her most recent position, Dr. Cullen has been the Deputy Director for Global Health Informatics and an Associate Professor in Family Medicine at Regenstrief Institute/Indiana University.

Meet your panellist – special guest

Susan Robinson

Chief Business Intelligence Officer - ADHS

Susan Robinson is the Chief Business Intelligence Officer at the Arizona Department of Health Services. An epidemiologist-turned-informatician, she joined ADHS straight out of graduate school to curb outbreaks of measles, mumps and pertussis, then rose through the ranks to lead the agency's Business Intelligence unit. Robinson modernised opioid-epidemic reporting in 2018 and later designed the data architecture behind Arizona's widely praised COVID-19 dashboard, making complex trends accessible to both policy-makers and the public. Today she oversees electronic disease-surveillance systems, cancer and birth-defect registries, vital-records analytics, hospital-discharge and EMS data, GIS services and the agency's visual-analytics team—driving real-time, equity-focused insight across the public-health spectrum.
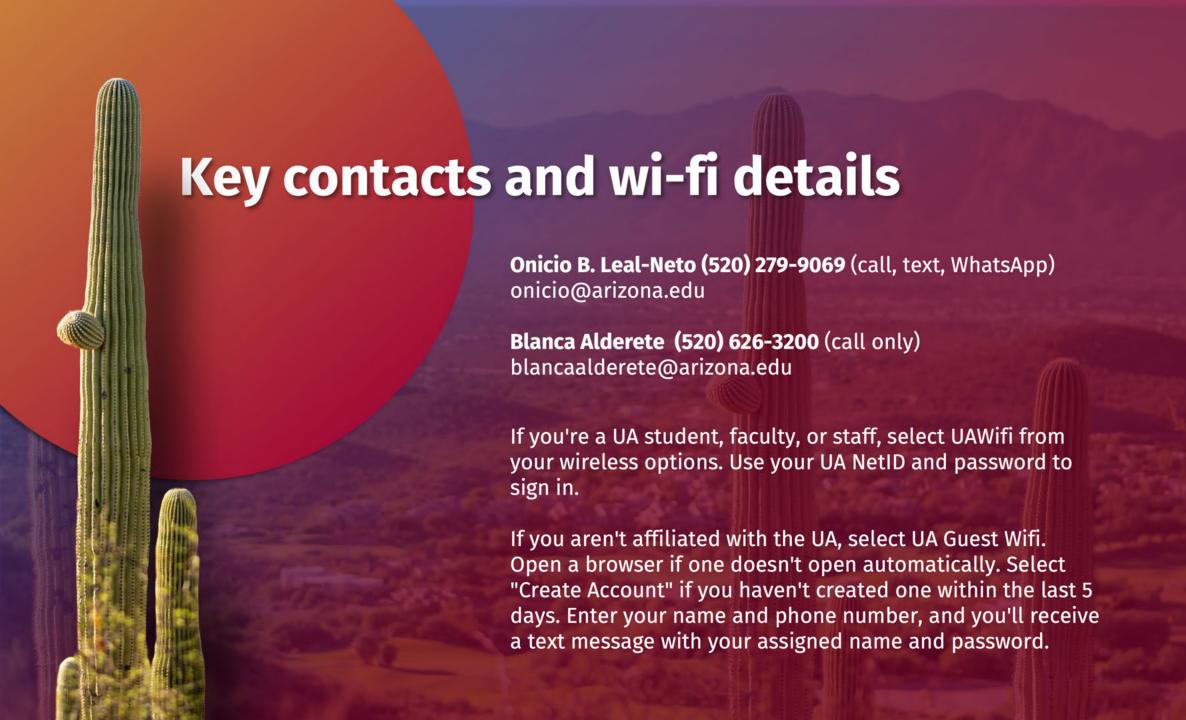
Tyson Swetnam

Director of Open Science
Research Associate Professor of Geoinformatics

Tyson Swetnam is a Research Associate Professor of Geoinformatics at The University of Arizona and the Director of Open Science in the Institute for Computation and Data-enabled Insight. Dr. Swetnam earned graduate degrees from the UArizona's College of Agriculture, Life, and Environmental Science (CALES) in Watershed Management (ecohydrology and disturbance ecology) and Geographic Information Systems (GIS) prior to his faculty appointment. He holds joint appointments in the School of Natural Resources and Environment and the BIO5 Institute. Dr. Swetnam's research covers a broad range of science and cyberinfrastructure applications where he collaborates with a diverse group of data science oriented projects in both Life and Earth Sciences. Dr. Swetnam is Co-principal investigator of CyVerse, the largest ever investment in cyberinfrastructure for the Life Sciences by The National Science Foundation; he also leads and co-leads multiple extramural research awards focused on data science, remote sensing of the environment, artificial intelligence and machine learning.

Key contacts
and wi-fi details

Key contacts and wi-fi details

Onicio B. Leal-Neto (520) 279-9069 (call, text, WhatsApp)
onicio@arizona.edu

Blanca Alderete (520) 626-3200 (call only)
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