

Zachary C. Van Tol

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PROFILE: Dynamic and accomplished scholar with over 5 years of experience analyzing complex sustainability issues at the intersection of climate, housing, and public policy. Skilled in developing evidence-based recommendations, with proficiency in project management, stakeholder involvement, and mixed-methodology research to achieve sustainable urban development goals through actionable strategies. Seeking opportunities to address pressing socio-environmental challenges in American cities with innovative research and collaborative solutions alongside dedicated civil servants.

EDUCATION

- Ph.D., Sustainability** | Arizona State University (ASU) | Tempe, Arizona May 2025
- Dissertation: The crossroads of homelessness, climate, and media in Phoenix, Arizona: Distilling dynamics, risks, and solutions
- M.S., Geography** | Virginia Tech | Blacksburg, Virginia May 2021
- Thesis: Analysis of Urban Heat Island Intensity Through Air Mass Persistence
- B.S., Meteorology** | Virginia Tech | Blacksburg, Virginia Dec 2019

SKILLS AND COMPETENCIES

Policy Analysis & Development: Expertise in analyzing complex sustainability issues, synthesizing data, and developing evidence-based recommendations for progressive urban development and housing policy.

Research & Science Communication: Strong mixed-methods research skills combined with effective communication abilities, enabling the translation of complex ideas into actionable policies and strategies.

Project Management: Proven ability to collaborate with diverse stakeholders, including government agencies, community groups, and private sector entities, to achieve sustainable urban development.

EXPERIENCE

- Urban Sustainability Scientist** | ASU, School of Sustainability Aug 2021-May 2025
- Proficiently analyzed complex sustainability issues and developed evidence-based solutions that focused on the intersection of climate, housing, and media dynamics.
 - Employed innovative research methods, including comparative literature analysis, community-informed surveying, biometeorological measurements, and geospatial data analysis.
 - Demonstrated strong verbal and written communication skills, constructing cohesive narratives that bridged academic research, policy development, and real-world challenges to facilitate informed decision-making for effective interventions.
- Management Intern** | ASU, Office of University Affairs May 2024-May 2025
- Supported Dr. Michael M. Crow and Dr. Derrick Anderson in the development of publications related to Science, Technology, and Public Affairs, with a specific focus on the role of academic institutions in societal progress.
- AmeriCorps Member** | City of Phoenix, Office of Heat Response and Mitigation May 2024-Aug 2024
- Assisted the Heat Response Program Manager with the implementation of Phoenix's heat mitigation plan, evaluating the resiliency of existing climate-coping infrastructure and bolstering meaningful data collection mechanisms.
- Graduate Teaching Assistant** | ASU, School of Public Affairs Dec 2022-May 2025
- Assisted Dr. Michael M. Crow and Dr. Derrick Anderson with course design and development for a graduate and undergraduate seminar that explores the political, economic, cultural, and moral foundations of science and technology policy and governance in a democratic society.
- Chief of Staff** | ASU, Graduate and Professional Student Association May 2022-May 2023
- Facilitated effective communication through meeting transcription, memorandums, legislation drafting, and liaising activities within the office of the GPSA President. Co-managed a team of 70+ people who oversaw a budget of \$1.4 million.
- Graduate Research Assistant** | ASU, School of Arts, Media, and Engineering Aug 2021-Dec 2022
- Utilized biometeorological instruments—including the development and implementation of a four-height resistance temperature detector (RTD) array—to measure thermal comfort within the urban landscape, culminating in a presentation to the City of Phoenix that evaluated their cool pavement pilot program.
- Graduate Teaching Assistant** | Virginia Tech, Department of Geography Jan 2020-May 2021

- Courses taught: Intro to Earth's Climate, Climate Dynamics I & II, Geography of Wine, and Sustainable Urbanization.

University Libraries Geospatial Services Intern | Virginia Tech

Aug 2018-May 2019

- Digitized physical cartographic assets, creating accompanying metadata files to curate a GIS-capable data set of historical mapping catalogs.

VOLUNTEER EXPERIENCE

Supreme Court Justice | Graduate and Professional Student Association

May 2023-May 2024

- Appointed to adjudicate disputes amongst ASU Graduate and Professional Students in a fair, equitable manner based on the confines of the student government bylaws and constitution.

Social Cohesion Student Fellow | Center for the Study of Race and Democracy

Sep 2022-Oct 2022

- Facilitated public dialogue on two books central to conversations of identity, belonging, and Western hegemony: "Made in China" by Anna Qu and "I've Been Here all the While" by Alaina Roberts.

Student Meteorologist Volunteer | National Weather Service, Wakefield VA

June 2019-Aug 2019

- Compiled flash flood data utilizing NOAA's Flooded Locations and Simulated Hydrographs (FLASH) product, creating data sets and graphs that displayed the reliability of the software's flash flood predictions.

Vice President | Gamma Phi Beta Honor Society

Aug 2018-May 2019

- Organized and oversaw meetings of 300+ members of Virginia Tech's chapter of a nationally recognized collegiate honor society, instilling values of leadership, service, and community stewardship.

Class of 2020 Leadership Team | Virginia Tech

Aug 2017-Dec 2019

- Selected for respectable character and leadership qualities out of a 200-person applicant pool, tasked with co-organizing class events and the independent responsibility for a budget of over \$25,000.

PUBLICATIONS & REPORTS

GOOGLE SCHOLAR (click me)

Van Tol Z. and Ahbeck B. "Progression or regression? The influence of media, politics, and narrative at a time of national climate-housing nexus challenges" In: *Analyses of Social Issues and Public Policy*. Under Review.

Van Tol Z., Vanos J.K., Middel A., and Ferguson K.M. (2024). "Concurrent Heat and Air Pollution Exposures Among People Experiencing Homelessness" In: *Environmental Health Perspectives*

Van Tol Z. and Ellis A.W. (2023). "Analysis of Urban Heat Island Intensity Through Air Mass Persistence: A Case Study of Four United States Cities" In: *Urban Climate*.

Ramseyer C.A., Stanfield T.J., **Van Tol Z.**, Gingrich T., Henry P., Forister P., Lamkin B.F., Stackhouse S., and Samrin S.S. (2022). "Identifying Eastern U.S. Atmospheric River Types and Evaluating Historical Trends" In: *Journal of Geophysical Research-Atmospheres*.

Report: Site Design and Human Heat Burden in Pacoima, California, August 2021 to April 2023. Pacoima, Los Angeles, CA. <https://innovation.luskin.ucla.edu/wp-content/uploads/2023/05/luskin-pacoima-extreme-heat-report.pdf>

In Preparation

Van Tol Z., Vanos J.K., Middel A., and Ferguson K.M. "Air pollution and high-temperature co-exposures for people experiencing homelessness in the current socio-political atmosphere: A case study in Phoenix, Arizona"

Van Tol Z., Vanos J.K., Middel A., and Ferguson K.M. "Reducing heat and air pollution exposure for people experiencing homelessness: Leveraging existing data sets to optimize resource allocation in Phoenix, Arizona"

MEDIA AND PRESS

- ASU College of Global Futures. (Spring 2023). "Heat and health risks: a multifaceted human problem". *Global Futures: Futurecast*, 25-31. https://issuu.com/asuoked/docs/gfl_2023_future_cast_vol4
- Girke, J. (Oct. 2022). *Extremwetter in den USA Obdachlose sind Hitze und Flut ausgeliefert*. ZDF. <https://www.zdf.de/nachrichten/panorama/usa-hitze-obdachlosigkeit-klimawandel-100.html>
- Consensus Digital Media. (April 2022). *How America's Hottest City is Handling the Heat* | *American Innovators* [Video]. YouTube. <https://www.youtube.com/watch?v=hrDHPYmJJ-A>

OUTREACH AND PUBLIC SPEAKING

2024

- ANGLES (A network for graduate leadership in sustainability) Workshop | Denver, CO
- Global Climate-Homelessness Think Tank | Virtual
- Extreme Heat Workshop | Columbia University, NY
- American Association of Geographers Annual Meeting | Honolulu, HI
- Interdisciplinary Ph.D. Workshop in Sustainable Development | Columbia University, NY

2023

- 11th International Conference on Urban Climate | Sydney, AU
- International Congress of Biometeorology | ASU
- Local to Global Justice 22nd Annual Forum and Festival | ASU
- Central Arizona—Phoenix Long-Term Ecological Research 25th Annual All Scientists Meeting | Scottsdale, AZ
- Graduate Student Advocacy Conference | Washington, D.C.

2022

- Sustainability Seminar | ASU
- Arizona Health Equity Conference | Tempe, AZ
- Graduate Student Advocacy Conference | Washington, D.C.
- 102nd Annual American Meteorological Society Meeting | Virtual

2021

- Graduate Student Advocacy Conference | Washington, D.C.

2020

- Esri Student Federal GIS Conference Assistantship | Washington, D.C.

AWARDS AND RECOGNITION

2024

- Extreme Heat Workshop Travel Award
- ASU School of Sustainability Research Achievement Award
- Graduate College Travel Award
- GPSA Professional Development Grant

2023

- GPSA Travel Grant
- Central Arizona—Phoenix Long-Term Ecological Research Graduate Grant
- GPSA Founders Award

2022

- Global Education Office: Go Global Grant
- Office of the President Scholarship: Antarctica 2022
- GPSA Jumpstart Grant
- Arizona Health Equity Conference Scholarship
- Graduate College Travel Award
- GPSA Travel Grant

2018

- Dean's International Study Abroad Scholarship