Stanford

ibrahim Halil Aslan

Postdoctoral Scholar, Hopkins Marine Station

NIH Biosketch available Online Curriculum Vitae available Online

Bio

BIO

My research primarily focuses on mathematical modeling for infectious diseases, which continue to pose significant threats to global health. I employ mathematical tools to derive crucial insights such as identifying patterns, forecasting pandemic trajectories, and assessing the effectiveness of various interventions, thereby informing public health policies and decision-making at local and global scales.

I am currently a postdoctoral scholar in the De Leo Lab and developing mechanistic models to investigate the impact of climate change on the transmission of the parasitic disease schistosomiasis, a role I have held since 2022. Prior to this, I completed my Ph.D. at the University of Tennessee in the Department of Mathematics, specializing in Mathematical Ecology/Evolution, in 2019. Subsequently, I served as a faculty member at Batman University.

HONORS AND AWARDS

- Summer Research Assistantship, University of Tennessee (2018)
- Graduate Teaching Assistantships, University of Tennessee (2015)
- Summer Research Assistantship, University of Tennessee (2015)
- Ph.D. Fellowship, Turkish Ministry of National Education (2014)
- Graduate Fellowship, Higher Education Credit and Hostels Institution, Turkiye (2010)
- Honor Undergraduate Reward, Mersin University (2009)
- Undergraduate Scholarship, Higher Education Credit and Hostels Institution, Turkiye (2005)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Councillor, Stanford Doerr School of Sustainability, Postdoc Advisory (2022 - 2024)
- Liaison, Stanford Doerr School of Sustainability, Diversity Equity Inclusion (2022 - 2022)
- Officer, Student chapter of Society for Industrial and Applied Mathematics (2017 - 2019)
- President, University of Tennessee Turkish Student Association (2016 - 2019)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of Tennessee Knoxville (2019)
- MS, University of Tennessee Knoxville , Mathematics with Concentration in Mathematical Ecology/Evolution (2016)
- MS, Gaziantep University , Applied Mathematics (2011)
- BSc, Mersin University , Mathematics (2009)

STANFORD ADVISORS

- Giulio De Leo, Postdoctoral Faculty Sponsor

COMMUNITY AND INTERNATIONAL WORK

- Integrated risk mapping and targeted snail control to support schistosomiasis elimination in Brazil and Cote d'Ivoire under future climate change
- Researcher

LINKS

- Linkedin: https://www.linkedin.com/in/ibrahimhalilaslan/

Research & Scholarship

RESEARCH INTERESTS

- Data Sciences

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Currently, I am exploring the complex interplay between temperature and the transmission risk of schistosomiasis, a parasitic disease currently affecting over two hundred million people, predominantly in SSA. I have been developing a novel mechanistic model with system of DE accounting for most of the thermal sensitive stages in the schistosomiasis life cycle and then improving the model with seasonal temperature oscillation and also some dormancy adaptation behaviors of snails like aestivation to explore the impact of seasonal temperature variation on the dynamics of schistosomiasis. In addition to that, I am also exploring the future projection of schistosomiasis under multiple future climate change scenarios in Brazil and Africa. Some of our preliminary results indicate that increasing the magnitude of seasonality, decreases the intensity of schistosomiasis, promotes a shift in the optimal transmission temperature towards lower values, Moreover, we discovered the seasonality extend the thermal breath of schistosomiasis.

PROJECTS

- Leptospirosis Modeling - NIMBioS/University of Tennessee, Knoxville (August 25, 2015 - June 24, 2016)
- Integrated risk mapping and targeted snail control to support schistosomiasis elimination in Brazil and Cote d'Ivoire under future climate change

LAB AFFILIATIONS

- Giulio De Leo (5/12/2024)

Publications

PUBLICATIONS

- **Analyzing the effect of restrictions on the COVID-19 outbreak for some US states** *THEORETICAL ECOLOGY*
  Demir, M., Aslan, I. H., Lenhart, S.
  2023
- **Analyzing the effect of restrictions on the COVID-19 outbreak for some US states.** *Theoretical ecology*
  Demir, M., Aslan, I. H., Lenhart, S.
  2023; 16 (2): 117-129
- **The effect of changing COVID-19 restrictions on the transmission rate in a veterinary clinic.** *Infectious Disease Modelling*
  Spence, L., Anderson, D. E., Aslan, I. H., Demir, M., Okafor, C. C., Souza, M., Lenhart, S.
  2023; 8 (1): 294-308
- **Modeling COVID-19: Forecasting and analyzing the dynamics of the outbreaks in Hubei and Turkey** *MATHEMATICAL METHODS IN THE APPLIED SCIENCES*
  Aslan, I., Demir, M., Wise, M., Lenhart, S.

2022

- **AN AGE STRUCTURE MODEL WITH IMPULSE ACTIONS FOR LEPTOSPIROSIS IN LIVESTOCK CATTLE** *JOURNAL OF BIOLOGICAL SYSTEMS*
  Aslan, I., Baca-Carrasco, D., Lenhart, S., Velasco-Hernandez, J. X.
  2021; 29 (01): 75-105