

HBCU – UP Target Infusion Project: Integrating Data Science into the Urban Studies & Sustainability Curriculum at Winston-Salem State University

Overview

WSSU's Target Infusion Project titled – Integrating Data Science into the Urban Studies & Sustainability Program (TIP – IDSUSSP) seeks to expose undergraduate students interested in the field of Urban Studies & Sustainability to data science. By combining urban studies and data science, we seek to engage students in new and innovative thinking and techniques that can harness the power of data to improve urban conditions around the globe. Through the use of data, urban studies can help reshape the world's cities into more sustainable places.

This interdisciplinary initiative will infuse data science content into the Urban Studies & Sustainability Program at WSSU. Specifically, the project's objectives include the following: reshape the Urban Studies and Sustainability Curriculum; modify two courses (through the infusion of data science content) which will orient students to current trends in urban studies and prepare them for a career in an urban studies related profession and/or graduate study in a related field; develop a new course (Applied Urban Studies Lab); engage undergraduates in urban studies related research; and outfit an Urban Studies Lab in which students can be exposed to the latest technology and techniques related to both data science and urban studies.

The TIP-IUSSC will help to develop a more robust and cutting-edge sequence of courses for students interested in this growing field. Students will be able to progress from the revised Introduction to Urban Studies into the newly created Applied Urban Studies Lab and then finish with the modified GIS Concepts and Techniques course. The revised program will also provide students with the opportunity to specialize in different tracks (e.g. Urban Planning and Administration, Race & Place, Spatial Justice, etc.).

Intellectual Merit

This project explores and designs new techniques for the inclusion of data science materials and knowledge within the Urban Studies and Sustainability curriculum. The successful implementation of the project will create critical knowledge and infuse cutting edge technologies into new and existing courses at WSSU. The project will further help in advancing the professional growth of the faculty involved, in increasing WSSU's research capabilities and in enhancing the research and educational experiences of underrepresented minority students.

Broader Impacts

The project will have broader impact on education and research by 1) disseminating the resulting methods and tools to the appropriate scientific communities through project website, publications in referred journals, presentations (including student research presentations) at state, national and international conferences, 2) involving undergraduate students to conduct challenging and timely research on an emerging issue that is of growing importance across the country, 3) providing valuable education and research experience to undergraduate students by enhancing the Urban Studies and Sustainability curriculum with revised courses that include data science components and the development of a new course, 4) exposing women, minority, and underrepresented students at a HBCU to data science content and skills related to Urban Studies and Sustainability that may influence their choice about further education and future careers and therefore increasing the size and diversity of the STEM workforce and 5) enhancing the infrastructure for research and education through the development of the Urban Studies Lab at Winston-Salem State University.