



## 2020 Undergraduate Summer Research Fellowships

### Fellowship Program

The [National Center for Sustainable Transportation](#) (NCST), housed in the University of California, Davis, [Institute of Transportation Studies](#) (ITS-Davis), offers a research fellowship program for undergraduates interested in transportation. The objective is to introduce a select group of undergraduate students to the transportation field through participation in our extensive research program. The fellowship will support students for an eight-week period over the summer to participate in ongoing research projects with faculty and graduate students. Previous NCST fellowship recipients can be viewed at <https://ncst.ucdavis.edu/undergraduate-research-fellowship-program>.

### Student Support

Research fellows will receive \$13.50 per hour and may work for eight weeks, or a maximum of 320 hours. Fellows may work up to 20 hours per week while school is in session and up to 40 hours per week when school is not in session. Specific dates and hours will be decided upon with the supervising faculty member. Students are required to submit a report to the NCST at the end of their fellowship and give a presentation at the end of the summer.

### Participating Faculty

Students are encouraged to identify key faculty members with whom they would like to work. Students may find a list of participating faculty and recent research projects on the list of [ITS-Davis academic and research faculty](#); however, students may work with other UC Davis faculty so long as the research relates to NCST research areas. Applicants are strongly encouraged to contact potential faculty sponsors regarding availability and the nature of their summer research projects prior to applying to the program.

### About the National Center for Sustainable Transportation and the UC Davis Institute of Transportation Studies

ITS-Davis was formally established in 1991 to organize and promote multi-disciplinary research of complex transportation problems. ITS-Davis was selected in a national competition in 2013 to lead a new two-year, \$11.2 million research, education, and outreach consortium for the U.S. Department of Transportation—the National Center for Sustainable Transportation. In 2016, the NCST and ITS-Davis once again successfully competed for a US DOT grant, expanding to a five-year, \$14 million program. The NCST's consortium includes the University of California, California State University, Long Beach, the University of California, Riverside, Georgia Institute of Technology, and the University of Vermont.

## **Research Topics**

Undergraduate research fellowships should focus on one or more of the following NCST research areas.

### ***Environmentally responsible infrastructure and operations***

Strategies to improve system efficiency usually also reduce energy consumption, GHG emissions, air pollution, and other environmental impacts for both passenger travel and goods movement. Strategies to reduce the carbon intensity of infrastructure often reduce overall costs and provide greater resiliency to commodity price fluctuations. Research related to these topics is focused on the development and assessment of strategies that reduce carbon emissions associated with infrastructure provision and systems operation, including innovative Intelligent Transportation Systems and connected and automated vehicle strategies.

### ***Multi-modal travel and sustainable land use***

Strategies to promote multi-modal travel and sustainable land use in urban, suburban, and rural settings for both passenger and goods movement, from the local to the international scale. Strategies to shift travel from solo driving to more efficient, low-carbon modes, including transit, walking, biking, and “new mobility” services, and more. Researchers at the NCST work to develop and assess strategies to address the land-use challenges of “logistics sprawl”, automated cars, and highway capacity, with the goal of enhancing the viability of low-impact modes and improving accessibility to jobs, housing, recreation, and services.

### ***Zero-emission vehicle and fuel technologies***

Improvements in vehicle and fuel technologies are largely responsible for the tremendous progress in reducing air pollution, and they show equal potential for reducing GHG emissions. The need to further improve energy efficiency and reduce GHG emissions for surface, water and air modes is motivating a shift to new-generation vehicle and fuel technologies, particularly biofuels and the full range of electric vehicles, including battery, plug-in hybrid, roadway-powered, and fuel cell electric vehicles. This research area is focused on lifecycle emissions, full private and social costs, consumer behavior, and regulatory and market policies.

### ***Institutional change***

New policy, regulatory, and organizational structures are needed at all levels of government to manage the disruptive transformations of electric vehicles, shared ride services, and vehicle automation, to ensure that their environmental impacts are minimized and that they are directed toward the public interest. Researchers at NCST are developing and disseminating the tools needed to support these efforts and are identifying and evaluating best practices for institutional change.

## **Eligibility**

Applicants must be a U.S. citizen or permanent resident, have completed the freshman year, and have a minimum GPA of 3.0. Additionally, students must not be graduating prior

to Summer 2020. That is, students graduating Summer 2020 or later are eligible to apply. Students in any program at UC Davis are eligible. Prior NCST undergraduate summer research fellows are not eligible to receive a second fellowship.

### **Application Instructions**

Applications must be submitted **by 5pm on Friday, April 10, 2020** for consideration.

***Submit application materials to the InfoReady call. Login to InfoReady using your UC Davis CAS login information:***

[Click here to apply.](#)

*Please direct any questions to:*

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