

POSITION ANNOUNCEMENT

Postdoctoral Scholar

Salary Range: \$3,844 - \$5,752 per month

THE INSTITUTE OF TRANSPORTATION STUDIES, UNIVERSITY OF CALIFORNIA, IRVINE invites applications for a post-doctoral position in INTELLIGENT TRANSPORTATION SYSTEMS (ITS). The appointment is to be within the Postdoctoral Scholar series; salary will be determined based on capabilities and experience. The anticipated starting date of the position is 4 May 2008; the appointment will be for twelve months, with the possibility of renewal pending the availability of funding for the position.

The Postdoctoral Scholar will hold the primary responsibility for the research development of an HOV driver behavior model of access/egress decisions for eligible users of buffer-separated carpool lanes, using a probabilistic lane changing approach in which the probability of changing lanes in order to gain access to/ egress from the HOV facility will be based not solely on the traffic characteristics of the immediately adjacent lane, but rather on the collection of lanes between the vehicle's current lane, and the HOV facility. In the case of buffer-separated HOV facilities, the approach is to incorporate a variable gap-acceptance function for lane changing that is a function of the distance to the next access/egress point, as well as the distances to alternative upstream such points. Once developed and validated, the Postdoctoral Scholar will be expected to incorporate the model will be into the Paramics simulator via a Paramics plugin, using C++. The research will address both types of HOV lane operation in California—buffered and non-buffered. The plugin will include an output producing a number of appropriate performance measures, including a measure of the lane changes/vehicle/mile. Using the vehicle re-identification (REID) software developed at UCI, the Postdoctoral Scholar will be expected to employ vehicle signature field data to analyze and identify the trajectories of vehicles accessing/exiting the HOV facility to establish the level of confidence of the estimated models.

The Postdoctoral Scholar will also hold primary responsibility for online corridor field implementation and testing of the Real-Time Performance Measurement System (RTPMS), and REID and vehicle classification systems, developed previously at UCI. This will entail making

all detection station in the I-405 freeway corridor operational (replacing those that are defective, upgrading detector cards as needed, changing the OS from Windows 2000 to Linux, and providing communications with adequate bandwidth, most likely by wireless ISP), instrumenting select arterial detection stations in a similar fashion, and modifying the RTPMS for corridor operation (including web-site and data-base modifications). In addition, a significant operational phase for data collection, ground-truthing, algorithm development, and evaluation of the RTPMS and other algorithms is required.

Candidates for the position should have demonstrated capabilities in the following areas: loop detector technologies, stochastic network analysis, traffic microsimulation, applied mathematics and computation focusing on transportation. A strong interest in the application of advanced computing and numerical techniques toward real-world problem-solving is required. A Ph.D. in one of the following fields is required: Transportation Engineering, Electrical Engineering, Computer Engineering/Science, or Civil Engineering.

The position may be filled as early as 4May 2008; evaluation of candidates will begin immediately. Please submit a complete resume with at least three references by **3 May 2008** to Professor Stephen Ritchie, Director, Institute of Transportation Studies, University of California, Irvine, CA 92697-3600.

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